

DOE/IG-0491

SPECIAL  
REPORT

MANAGEMENT CHALLENGES  
AT  
THE DEPARTMENT OF ENERGY



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

November 28, 2000

MEMORANDUM FOR THE SECRETARY

FROM: Gregory H. Friedman (Signed)  
Inspector General

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

BACKGROUND

On October 12, 2000, the Chairmen of several committees of the U.S. Congress requested an assessment by the Office of Inspector General of the most significant management challenges facing the Department of Energy. We have received similar requests annually since 1997. As in the past, our response to this year's inquiry parallels the Department's reporting under the Federal Managers' Financial Integrity Act. The Office of Inspector General has a significant role in the Integrity Act process, which has traditionally resulted in an effective depiction of long-standing, institution-wide problems facing the Department of Energy.

RESULTS OF AUDIT

This special report constitutes our response to the congressional inquiry. The analysis is focused on those Department challenges that, in our view, warrant increased emphasis or appear to have reached a heightened level of urgency. Throughout our discussion, we have highlighted issues of concern relative to the newly formed National Nuclear Security Administration (NNSA). The Office of Inspector General is devoting considerable time and resources to evaluating various aspects of the NNSA's complex mission and operations.

In addition to issues relating to the creation of NNSA, the most serious challenges facing the Department today can be categorized as follows:

- Contract Administration;
- Energy Technology;
- Environmental Remediation (including radioactive waste storage);
- Human Capital;
- Information Technology;
- Infrastructure;
- Property Controls and Asset Inventories;
- Safety and Health; and
- Security.

Additional details on these challenges are provided in the text of the special report. We believe that with aggressive management action, a number of these issues can be addressed in the near term. However, the Department faces challenges in areas such as environmental cleanup; safety and health; and, contract administration that are, in our judgment, among the most intractable management issues in the Federal government. The successful resolution of these and similar issues require long-term, strategic solutions.

The Department has taken a number of positive actions to address some of its long-standing problems, including several that were reported by this office as management challenges in prior evaluations requested by Congress. For example, the Department has better integrated its multi-billion dollar research and development program by establishing comprehensive, cross-cutting research and development portfolios. Also, the Department's enhanced emphasis on complex-wide security is evidenced by the recent formation of the Office of Security and Emergency Operations and by the implementation of many new security policies. Similarly, the Department has acted aggressively to implement project management reforms, including a new tracking and control system and a senior level "watch list" for troubled projects. These and other Department accomplishments are discussed more fully on page 12 of the report.

We look forward to working with the Department's senior staff in a continuing effort to improve Department programs and operations, particularly as they relate to the management challenge issues.

Please let me know if there are any questions.

Attachment

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

# **Management Challenges at the Department of Energy**

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## Overview

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### INTRODUCTION

The Office of Inspector General (OIG) has identified nine issue areas which, in our judgment, represent the most significant challenges facing the Department of Energy (Department). Each challenge area is briefly discussed in this report. Our discussion also highlights issues of concern relative to the newly formed National Nuclear Security Administration (NNSA).

- Contract Administration<sup>1</sup>;
- Energy Technology;
- Environmental Remediation<sup>2</sup> (including radioactive waste storage);
- Human Capital;
- Information Technology;
- Infrastructure;
- Property Controls and Asset Inventories<sup>3</sup>;
- Safety and Health; and
- Security

### CONCLUSIONS AND OBSERVATIONS

The OIG believes that, with aggressive management action, several of the issues that we have highlighted can be addressed in the near term. In contrast, however, the Department's environmental remediation program represents one of the largest and most complex public policy issues facing this nation, let alone the Department. The effort to remediate the residual effects of the nuclear weapons program will require decades to complete at an estimated cost of over \$200 billion. It is unrealistic to anticipate that a program of this magnitude, one that is burdened with widely acknowledged technical uncertainty, can be removed anytime soon from a list of major Department challenges. Similarly, the Department, as a civilian agency which is one of the largest procurers of goods and services from the private sector, has had a continuing problem with administering the thousands of contract, grant, and other instruments that it uses for this purpose. While there have been concerted efforts at contract reform, recent OIG reports suggest that significant problems still exist. We are, therefore, not optimistic about removing contract administration from the list of challenges in the near future.

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<sup>1</sup>Combines *Contract Management and Project Management* from 1999.

<sup>2</sup>Combines *Environmental Compliance and Nuclear Waste Storage and Disposal* from 1999.

<sup>3</sup>Combines *Materials Inventory and Property Controls* from 1999.

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This report is divided into two sections. The first summarizes our observations regarding each management challenge area. We have cited recent OIG reviews which illustrate or identify key aspects of the challenge issues or specific operations and programs that are not achieving their intended results. Consistent with the requirements of the Government Performance and Results Act (Results Act), the Department should ensure that it has developed and implemented performance goals and measures that directly address each of these management challenges. Further, actual performance should be assessed against the goals and measures and independently validated.

The final section of our report identifies positive progress the Department has made with respect to previously identified management challenges. Appendix 1 lists key OIG reports issued during the past year, organized by challenge area. Appendix 2 lists significant open recommendations on previously issued reports in these areas.

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(Signed)  
Office of Inspector General

# Management Challenges at the Department of Energy

## **Challenge Summaries**

The following sections briefly summarize our observations regarding the challenge areas.

### Issues Relating to the Creation of the NNSA

NNSA was established in March 2000 pursuant to Title 32 of the National Defense Authorization Act for Fiscal Year 2000 (Public Law 106-65). NNSA is to provide clear and direct lines of accountability and responsibility for the management and operation of the nation's nuclear weapons, naval reactors, and nuclear nonproliferation activities.

As with the establishment of any new Government enterprise, especially one with such a significant mission, the NNSA faces a number of challenges associated with creation. Logistical and organizational issues must be resolved; expectations, responsibilities, and authorities must be established; and, human capital issues must be addressed. Further, as envisioned at its creation, the NNSA has a number of major policy issues it must address. As discussed in the following pages, many of those issues - notably contract administration, security, infrastructure, and information technology - will represent management challenges to NNSA as well as to the Department.

Over the past several months, the OIG has worked to design a strategy for maximizing the effectiveness of our services relative to NNSA operations.

### Contract Administration

In its Fiscal Year 1999 *Accountability Report*, the Department reported that it had reformed its contracting practices, which had been largely unchanged for more than 50 years. The reported reforms included:

...aggressively recompeting contracts, tying performance metrics to contractor fees to incentivize improved performance, and shifting risk to contractors in exchange for the opportunity to earn higher fee amounts.

Based on our observations and OIG reviews conducted since 1994, we conclude that many of the Department's contract reform goals have yet to be achieved. For example, while incentives have been included in most Department contracts, OIG reviews have disclosed systemic weaknesses in the way these incentives have been administered. Further, while fees have, in fact, risen dramatically, OIG reviews have repeatedly disclosed that there has not been a commensurate increase in financial risk to the Department's major contractors.

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Ongoing OIG reviews have disclosed continuing problems associated with performance-based incentives and fees at major Department contractor locations. In the next few weeks, the OIG will issue a series of follow-up reports dealing with these issues.

During the past year, the OIG also disclosed instances where certain contracting practices did not appear to be in the Government's best interests. For example, our audit of *The Department's Management and Operating Contractor Make-or-Buy Program* (DOE/IG-0460, February 2000, <http://www.ig.doe.gov/pdf/ig-0460.pdf>) disclosed that the Department could save over \$5 million if it more thoroughly evaluated make-or-buy decisions using cost-benefit analyses. Our report on *Charitable Giving Requirements in Department of Energy Contracts* (HQ-L-00-01, March 2000, <http://www.ig.doe.gov/pdf/hql0001.pdf>) noted that several facilities' management contracts included clauses requiring charitable giving by contractors. Additionally, our report on *Polling by Lawrence Livermore National Laboratory* (HQ-L-00-02, July 2000, <http://www.ig.doe.gov/pdf/hql0002.pdf>) disclosed that Livermore contracted for a poll to gauge public awareness and impressions of the lab with respect to unfavorable press coverage.

In our judgment, improvement in contracting practices represents one of the greatest opportunities for enhancing the economy and efficiency of Departmental operations. Of the Department's total budget of \$18.9 billion, over \$13 billion is spent by its major contractors. The Office of Management and Budget has included "improving the DOE's program and contract management" as one of its 12 agency-specific priority management objectives for Fiscal Year 2001.

In previous years, the OIG reported project management as a separate challenge area. However, the Department's contractors carry out the vast majority of its large construction, scientific, and engineering projects. Project management is, therefore, an integral part of contract administration and we have chosen to portray them together in our current analysis. The Department has experienced difficulties in managing some of its major projects. Cost overruns, schedule delays, and other management problems have plagued Department projects, most recently the \$1 billion National Ignition Facility. Since the early 1990s, the Office of Inspector General has issued many reports critical of the Department's planning, justification, and management of its major projects.



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## Energy Technology

In a 1997 report, the Energy Research and Development Panel of the President's Committee of Advisors on Science and Technology noted that the nation's economic well-being depends on reliable, affordable supplies of energy. The Panel further commented that "...our national security requires secure supplies of oil or alternatives to it..." and that, as a consequence, the United States must maintain its leadership in the science and technology of energy supply and use.

Recent worldwide events, coupled with this year's dramatic spike in oil prices, have led to a renewed national focus on the significance of oil imports and the technology that can mitigate energy dependency. Currently, the United States relies on petroleum for about 40 percent of its energy supply, and 51 percent of this petroleum is imported. Increasing energy demands for transportation, as well as for other sectors of our economy, are likely to exacerbate this situation. For example, the Department projects that U.S. oil imports will increase from 51 percent in 1999 to 64 percent in 2020.

In light of the implications for our economic and national security, the Department should, in our judgment, intensify its efforts in the following areas:

- Availability of competitively-priced oil and natural gas supplies;
- Efficiency and productivity of energy-intensive industries; and,
- Development and use of advanced transportation vehicles and alternative fuels.

During the coming year, the OIG intends to initiate a series of audits on different aspects of the Department's energy technology activities, including alternative transportation fuels.

## Environmental Remediation

The Department's effort to address the environmental consequences of its nuclear weapons mission has been recognized as the largest remediation program of its kind ever undertaken. The Department reports that it is responsible for cleaning up 113 geographic sites located in 30 states and one territory. Sites range in size from as small as a football field to larger than the state of Rhode Island. Cleaning up the entire nuclear weapons legacy will take several decades and, according to the Department's most recent estimate, cost about \$230 billion. The magnitude of the cleanup effort, along with its technical

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complexities and uncertainties, ensures that it will remain a Departmental challenge for the foreseeable future.

The Department has made progress in defining the cleanup effort, estimating its scope, and prioritizing individual projects. However, OIG reviews over the past year have illustrated several examples of the need for increased management attention to achieving intended environmental cleanup outcomes. For example, our audit of *The Management of Tank Waste Remediation at the Hanford Site* (DOE/IG-0456, January 2000, <http://www.ig.doe.gov/pdf/ig-0456.pdf>) showed that this \$47 billion project did not have a completed baseline, critical path, or comprehensive project management plan despite similar OIG findings dating to 1993. During another audit, *Decontamination and Decommissioning Contract at the East Tennessee Technology Park* (DOE/IG-0481, September 2000, <http://www.ig.doe.gov/pdf/ig-0481.pdf>) we found that the decontamination of three buildings at that site was two years behind schedule and \$94 million over budget.

#### Human Capital

Since 1995, the Department has reduced Federal staff from 13,640 to 10,027 through reductions in force, buyouts, and attrition during a hiring moratorium to meet lowered budget estimates. During this period, the average age of employees in the Department has increased from 44 to 48. The fraction of staff eligible for retirement has increased from 6 percent to 11 percent in the last 5 years and will increase to 34 percent in the next 5 years. Separations exceed hires by almost 3 to 1.

Some of the Department's major contractors have experienced similar losses. For example, at Lawrence Livermore National Laboratory, three times as many scientists left the laboratory in the first eight months of 2000 as in all of 1999. A senior Department official recently testified before Congress that in 10 years, most of our weapons designers with nuclear testing experience will have retired. Many of those retiring or resigning take with them technical and scientific knowledge that is not easily replaced. For example, when the Department's newest system, the W88, reaches the end of its original design life in 2014, we may no longer have anyone with test-based job experience to help evaluate modifications that may be required.

The OIG has been monitoring this issue through our role in the FMFIA process and other audit work. For example, in our 1998 report on *The U.S. Department of Energy's Efforts to Preserve the Knowledge Base Needed to Operate a Downsized Nuclear Weapons Complex* (DOE/IG-0428, October 1998, <http://www.ig.doe.gov/pdf/ig-0428.pdf>) we

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recommended that, consistent with the Results Act, the Department develop and implement a performance plan to preserve the nuclear weapons program knowledge base, including capturing information that could be provided only by retiring weapons experts. Although that recommendation remained open as of September 30, 2000, the Department reported to us that it has taken steps to "reinvigorate" its knowledge and records management and has developed a comprehensive approach to preserving the nuclear weapons program knowledge base. While it is evident that management recognizes the seriousness of its human capital problem, the need for action to ensure that the Department has the technical, scientific, and management resources it needs to meet its mission requirements has become critical. The OIG has therefore initiated a follow-on review in this area.

### Information Technology

Enacted in 1996, the Clinger-Cohen Act required the Department to appoint a Chief Information Officer (CIO). The CIO was vested with the responsibility to develop and implement (1) an effective agency-wide information technology capital investment strategy, (2) specific performance goals and measures, (3) monitoring of and reporting on information technology programs, and (4) an integrated information technology architecture. Since 1996, the OIG has issued ten audit reports identifying problems associated with the Department's implementation of Clinger-Cohen and its management of \$1.6 billion in annual information technology expenditures. Consequently, we are working on an overview evaluation of the Department's implementation efforts.

The use of capital planning and investment controls to better manage information technology has been identified by the Office of Management and Budget as a Government-wide priority management objective for Fiscal Year 2001. Two of our most recent reports illustrate that the Department does not have an effective investment strategy for information technology. In our audit of *Corporate and Stand-Alone Information Systems Development* (DOE/IG-0485, September 2000, <http://www.ig.doe.gov/pdf/ig-0485.pdf>), we found that the Department had spent at least \$38 million developing duplicative information systems. Duplicative systems existed or were under development at virtually all organizational levels within the Department. Similarly, during our audit of *Commercial Off-the-Shelf Software Acquisition Framework* (DOE/IG-0463, March, 2000, <http://www.ig.doe.gov/pdf/ig0463.pdf>) we found that the Department failed to take advantage of enterprise-wide software contracts that could have saved nearly \$40 million on just one of its desktop software suites.

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In our audit of *The U.S. Department of Energy's Consolidated Financial Statements for Fiscal Years 1999 and 1998* (DOE/IG-FS-00-01, March 2000), we determined that problems associated with implementation of a new financial management system at the Department's Western Area Power Administration (WAPA) constituted a material internal control weakness. Operational deficiencies included problems with system functionality and performance, data accuracy, security, and reporting. Unfortunately, as of November 2000, WAPA was still experiencing delays in the preparation of its Fiscal Year 1999 financial information for audit. These delays could impact our ongoing audit of the Department's Fiscal Year 2000 consolidated financial statements.

Recent passage of Government Information Security Reform (P.L.106-398, subtitle G), with its requirement for an annual independent evaluation of the Department's information security activities by the OIG, represents a significant additional challenge and a major demand on our staffing and budgetary resources. We are developing a comprehensive strategy for meeting this new requirement in a manner that fully leverages our in-house capabilities, contractor resources, and the expertise of other information technology groups within the Department. Our Technology Audit Group and Technology Crimes Section, both formed in 1999, are working together to coordinate this effort.

### Infrastructure

For several years, the OIG has reported that the condition of the Department's infrastructure is inadequate and, in fact, is deteriorating at an alarming pace. Recent audits in certain areas key to the Department's core missions have led us to conclude that the problem has become more severe, requiring prompt management attention.

In its recently revised Strategic Plan, the Department identified six objectives for its National Nuclear Security business line. The first three deal with the Department's ability to (1) maintain and refurbish nuclear weapons; (2) achieve "robust and vital" scientific, engineering, and manufacturing capabilities; and, (3) ensure the "vitality and readiness" of the national nuclear security enterprise.

Based on our audit of the *Management of the Nuclear Weapons Production Infrastructure*, (DOE/IG-0484, September 2000, <http://www.ig.doe.gov/pdf/ig-0484.pdf>) we found that some Stockpile Stewardship Plan milestones and goals have slipped, restoration costs

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have increased, and future nuclear weapons production work, as required by a Presidential Decision Directive, is at risk. Knowledgeable Department officials estimate that between \$5 billion and \$8 billion over current budgeted amounts will need to be invested to address the deteriorating infrastructure of the weapons production plants. The Department and NNSA must swiftly act to counter the effects of deferred maintenance to the production infrastructure and the loss of certain critical manufacturing capabilities

Regarding Department-wide infrastructure issues, our audit of *Implementation of Presidential Decision Directive 63, Critical Infrastructure Protection* (DOE/IG-0483, September 2000, <http://www.ig.doe.gov/pdf/ig-0483.pdf>) demonstrated that the Department had not implemented its Critical Infrastructure Protection Plan. As a result, the Department faced increased risk of malicious damage to cyber-related critical infrastructure that could adversely impact its ability to protect critical assets and deliver essential services. We noted that the Department had not developed specific performance measures or goals to guide implementation of the Presidential Decision Directive.

#### Property Controls and Asset Inventories

For several years the OIG has been reporting, through the FMFIA process, that the Department has extensive inventories of nuclear and non-nuclear materials that may no longer be necessary due to mission changes. We have been concerned that funds spent to store, secure, and handle these materials could be put to better use and that the potential exists for safety and health concerns. The OIG has also reported significant deficiencies in controls over Government property.

In January 2000, as part of a larger cost-savings initiative, the Inspector General suggested that the Secretary initiate a Department-wide review to specifically identify excess or unneeded assets and schedule for their disposal at the earliest possible time. Based in part on the OIG recommendation, the Secretary announced, in March 2000, a Departmental initiative to "clean out the attic" of unneeded, unused property. Since March, Department managers have been working to deploy a number of new processes, including on-line auctions, to deal with this issue. The "clean out the attic" initiative is still ongoing.

While the Department deserves credit for its attention to this long-standing problem, recent OIG reviews raised new concerns about the adequacy of controls over property. Our audit of *Non-Nuclear Weapons Parts at the Rocky Flats Environmental Technology Site*

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(DOE/IG-0475, June 2000, <http://www.ig.doe.gov/pdf/ig-0475.pdf>), disclosed that Rocky Flats (1) could not account for its weapons parts, (2) did not maintain accurate inventory records, and (3) could not accurately report the value of its non-nuclear parts inventory on the Department's financial statements. In our *Inspection of Surplus Computer Equipment Management at the Savannah River Site* (DOE/IG-0472, June 2000, <http://www.ig.doe.gov/pdf/ig-0472.pdf>) we determined that a contractor did not comply with property management requirements for disposal of surplus computer equipment. Stored information, including Unclassified Controlled Nuclear Information, was not cleared from all surplus computers.

### Safety and Health

Ensuring the safety and health of its workforce and the public is one of the Department's most difficult, long-term challenges. Safety and health issues encompass all activities relating to the identification, testing, handling, labeling, cleanup, storage, and/or disposal of radioactive and hazardous waste. Other activities relate to nuclear safety and occupational and worker safety and health (e.g., nuclear safety standards).

As with the Environmental Remediation challenge, the OIG does not expect that the Department will resolve these complex issues in the near term. Rather, Department managers should take aggressive action to ensure that safety and health activities are carried out as efficiently and effectively as possible. Several OIG reviews completed during the past year showed that this was not always the case.

Our audit of *In-Vitro Bioassay Services at Department of Energy Facilities* (DOE/IG-0458, February 2000, <http://www.ig.doe.gov/pdf/ig0458.pdf>), for example, disclosed that certain contractors ignored available Department-wide subcontracts for bioassay analyses. Instead, the contractors issued their own subcontracts at substantially higher rates. During our audit of the *Federal Energy Regulatory Commission's Dam Safety Program* (DOE/IG-0486, October 2000, <http://www.ig.doe.gov/pdf/ig-0486.pdf>), we concluded that, overall, the Commission conducted a thorough and comprehensive dam safety program. However, management inefficiencies led to a backlog of safety reports needing review. As a result, the Commission did not have complete, timely, and important information about the safety condition of some dams under its jurisdiction.

The OIG also received allegations of criminal misconduct regarding safety and health issues. For example, we received information that one

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of the Department's subcontractors was mixing hazardous materials with non-hazardous/non-regulated paint waste material. After an extensive investigation, the subcontractor was sentenced to three years probation and fined for the treatment of hazardous waste without a permit and for transportation of hazardous waste without a manifest.

### Security

One of the objectives of the Department's National Nuclear Security business line is ensuring that the Department's "...nuclear weapons, materials, facilities, and information assets are secure through effective safeguards and security policy, implementation, and oversight." The Department spends over \$1 billion per year for physical and personnel security. This includes NNSA and other Departmental sites. Previous reviews by the OIG, Congress, and others have identified weaknesses in the Department's protection of nuclear weapons-related information. Lapses in security were frequently cited during the debate leading to NNSA's creation. In 1999, the OIG designated Security as an emphasis area and initiated a number of reviews aimed at assisting the Department in focusing on areas of particular concern. The results of these reviews indicated that improvements in security operations are still needed.

Our report on *Inspection of Allegations Relating to the Albuquerque Operations Office Security Survey Process and the Security Operations' Self-Assessment at Los Alamos National Laboratory* (DOE/IG-0471, May 2000, <http://www.ig.doe.gov/pdf/ig-0471.pdf>) showed that certain security survey ratings were changed without a documented rationale. This inspection also disclosed that about 30 percent of the Los Alamos security operations division personnel we interviewed believed they had been pressured to change or mitigate security self-assessments. Another inspection addressed *Allegations Concerning the Department of Energy's Site Safeguards and Security Planning Process* (DOE/IG-0482, September 2000, <http://www.ig.doe.gov/pdf/sssp.pdf>), where we identified significant problems in the manner in which site safeguards and security plans were reviewed and quality assurance issues were closed.

Our reviews have also identified security weaknesses relating to information technology. In our audit of *Unclassified Network Security at Selected Field Sites*, (DOE/OIG-0459, February 2000, <http://www.ig.doe.gov/pdf/ig0459.pdf>), the OIG identified, at all six sites we visited, significant weaknesses that increased the risk that unclassified computer networks could be damaged by malicious attack. Even

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though the Department became aware of a number of network security problems in recent years, it did not, until recently, issue specific network security requirements. An *Inspection of the Sale of a Paragon Supercomputer by Sandia National Laboratories* (DOE/IG-0455, December 1999, <http://www.ig.doe.gov/pdf/Paragonf.pdf>) determined that Sandia failed to exercise prudent management judgment in its decision to excess and sell a supercomputer to a Chinese national. The supercomputer was one of the world's 100 fastest computers and had been used by Sandia to support the Department's nuclear weapons testing program. As noted previously, our inspection dealing with computer equipment at Savannah River (DOE/IG-0472) disclosed that management at that site did not assure that surplus computers were sanitized prior to disposal.

## Areas of Progress

The Department has taken steps to address a number of previously reported problems. Specifically, Department managers have implemented OIG recommendations or otherwise improved processes related to:

- Integrating research and development activities;
- Increasing emphasis on security;
- Commencing operations at the Waste Isolation Pilot Plant (WIPP);
- Enhancing project management;
- Improving financial reporting on environmental liabilities; and,
- Correcting the Year 2000 computer problem.

As this list illustrates, progress has been made in areas representing significant complexity. The improvements came about as a result of strategic planning and goal-setting, management commitment, and the concerted efforts of many Department and contractor personnel.

### Research and Development Portfolios

The Department undertook a major effort to coordinate its research and development activities. In a 1998 audit report on *The U.S. Department of Energy's Management of Research and Development Integration* (DOE/IG-0417, March 1998, <http://www.ig.doe.gov/pdf/ig-0417.pdf>), the OIG recommended that the Department better integrate its \$6 billion annual research and development program to assure maximum benefit to taxpayers and to minimize the possibility



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that research would be unnecessarily duplicated. The Under Secretary for Energy, Science, and Environment led the Department's effort to fully catalog its research program and to coordinate research across programmatic lines. This effort resulted in the publication of a series of comprehensive research and development "portfolios." In a January 2000 letter to the Secretary, the Inspector General suggested that the Under Secretary's approach to research and development be adopted for other cross-cutting programs and initiatives throughout the Department.

#### Security Improvements

The Department has re-emphasized the importance of strong security throughout the complex. The Office of Security and Emergency Operations has developed and implemented over two dozen new security policies and directives. Our observations at several locations suggest that there is a heightened awareness of the Department's security needs. Despite this positive progress, however, security remains one of the most difficult challenges facing the Department and the NNSA.

#### WIPP Operations

After more than 20 years of scientific study, public input, and regulatory struggles, WIPP began operations in March 1999. Located in Southeastern New Mexico, WIPP is the world's first underground repository licensed to safely and permanently dispose of transuranic radioactive waste left from the research and production of nuclear weapons. As of October 2000, WIPP had received 100 shipments of waste from Rocky Flats, the Idaho National Engineering and Environmental Laboratory, Los Alamos National Laboratory, and Hanford. Over the expected 35-year operating life of WIPP, the Department plans to transport 37,000 loads of transuranic waste from 23 locations nationwide.

#### Project Management Initiatives

The Department recently implemented a series of reforms, including a new project management tracking and control system, a Chief Operating Officer's "Watch List" for troubled projects, and a new project management organization within the Office of Chief Financial Officer. While we are encouraged at these steps, the OIG believes that project management – which we include as part of contract administration for this report – remains one of the Department's key challenges.

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### Financial Management

In 1999, we reported a material internal control weakness in the Department's estimating process for environmental liabilities. However, in our audit of *The U.S. Department of Energy's Consolidated Financial Statements for Fiscal Years 1999 and 1998* (DOE/IG-FS-00-01, March 2000) we reported that management had addressed the internal control weakness by developing a documented, complete, and updated estimate.

Also as part of the financial statement audit, we reported that the Department's financial management systems were in substantial compliance with requirements of the Federal Financial Management Improvement Act of 1996. The Department is one of only three agencies found to be in substantial compliance.

### Year 2000

The Department successfully negotiated the Year 2000 date change, experiencing only minimal problems with its information systems. The Chief Information Officer's staff coordinated the Department's review of more than 400 mission-critical systems, ensuring those systems had been upgraded or replaced, tested, and independently validated as Year 2000 compliant. The Department responded quickly and decisively to address a number of related issues raised by the OIG.

**FY 2000-01 REPORTS RELATING TO THE DEPARTMENT'S  
MANAGEMENT CHALLENGES**

**ISSUES RELATING TO THE CREATION OF NNSA**

Ongoing	National Nuclear Security Administration's Surveillance and Dual Revalidation Program
Ongoing	ATLAS Pulse Power Experimental Facility
Ongoing	Weapon Related Container Development
Ongoing	Utilization of High Explosive Facilities
Planned	Initial Evaluation of NNSA Activities

**CONTRACT ADMINISTRATION**

DOE/IG-0479	Management of Patent and Licensing Activities at Department-owned Contractor-operated Laboratories
DOE/IG-0460	The Department's Management and Operating Contractor Make-or-Buy Program
WR-B-00-03	Outsourcing Opportunities at the Los Alamos National Laboratory
Ongoing	Management and Integrating Contractor Fees
Ongoing	Performance Based Contractor Practices
Ongoing	IT Support Service Contracts
Ongoing	DOE Nuclear Material Stabilization Program
Ongoing	Office of River Protection -- Performance Measures
Ongoing	LLNL -- Procurement Card Practices

**ENERGY TECHNOLOGY**

DOE/IG-0467	U.S. Department of Energy's Global Climate Change Activities
Ongoing	Super Energy Savings
Planned	Alternative Fuels

**ENVIRONMENTAL REMEDIATION (including radioactive waste storage)**

DOE/IG-0481	Decontamination and Decommissioning Contract at the East Tennessee Technology Park
DOE/IG-0476	Best Practices for Environmental Baseline Development
DOE/IG-0461	Groundwater Monitoring Activities at Department of Energy Facilities
DOE/IG-0462	National Low-Level Waste Management Program
DOE/IG-0456	The Management of Tank Waste Remediation at the Hanford Site
DOE/IG-0454	Waste Incineration at the Idaho Engineering and Environmental Laboratory

DOE/IG-0453	Waste Incineration at the Savannah River Site
Ongoing	Americium/Curium Vitrification
Ongoing	Remediation and Closure of Miamisburg Environmental Management Project
Ongoing	Idaho National Engineering & Environmental Lab's Tru Waste Program
Ongoing	Intersite Waste Transfer Program
Ongoing	Privatization of Cleanup Contracts

### **HUMAN CAPITAL**

Ongoing	Recruitment and Retention
Ongoing	Reliance on Contractors

### **INFORMATION TECHNOLOGY**

DOE/IG-0485	Corporate and Stand-Alone Information System Development
DOE/IG-0483*	Implementation of PDD 63, Critical Infrastructure Protection
DOE/IG-0466	Implementation of Integrated Business Information Systems within the Department of Energy
DOE/IG-0463	Commercial Off-the-Shelf Software Acquisition Framework
DOE/IG-0459*	Unclassified Computer Network Security at Selected Field Sites
Ongoing	Corporate Human Resource Information System
Ongoing	Integrated Planning and Budgeting System -- Information System
Ongoing	Cybersecurity of Privacy Act Information

### **INFRASTRUCTURE**

DOE/IG-0484	Management of the Nuclear Weapons Production Infrastructure
DOE/IG-0483*	Implementation of PDD 63, Critical Infrastructure Protection
Ongoing	Facility Maintenance at the INEEL

### **PROPERTY CONTROLS AND ASSET INVENTORIES**

DOE/IG-0475	Non-nuclear Weapons Parts at the Rocky Flats Environmental Technology Site
DOE/IG-0472	Inspection of Surplus Computer Equipment Management at the Savannah River Site
DOE/IG-0468	Facilities Information Management System
DOE/IG-0455*	Sale of a Paragon Supercomputer by Sandia National Laboratory
Ongoing	BPA Property Control Issue
Ongoing	ORO -- Property Transfer Under CRADA
Ongoing	LLNL Excess Personal Property Management
Ongoing	ORO -- Management of Personal Property

## **SAFETY AND HEALTH**

IG-0486 Federal Energy Regulatory Commission's Dam Safety Program  
IG-0458 In-Vitro Bioassay Services at Department of Energy Facilities  
S00IS010 Management Alert on Inspection of "Chem-Bio" Safety Protocols at DOE (Sandia)  
INS-0-00-01 Inspection of Selected Issues of the Chem-Bio Facility at the Oak Ridge National Laboratory  
S99IS040 Management Alert on Inspection of "Chem-Bio" Safety Protocols at DOE (INEEL)  
Ongoing Inspection of Department of Energy Activities Involving Biological Select Agents  
Ongoing Nuclear Transportation Safeguards  
Planned Safety Management at the Savannah River Site  
Planned Integrated Safety Management Program at Oak Ridge  
Planned Integrated Safety Management Program at LLNL  
Planned Illness and Injury Reporting at Rocky Flats

## **SECURITY**

DOE/IG-0488 Inspection of Selected Aspects of the Department of Energy's Classified Document Transmittal Process  
DOE/IG-0482 Summary Report on Allegations Concerning the Department of Energy's Site Safeguards and Security Planning Process  
DOE/IG-0471 Inspection of Allegations Relating to the Albuquerque Operations Office Security Survey Process and the Security Operations' Self-Assessments at Los Alamos National Laboratory  
DOE/IG-0464 Follow-on Review of the Status of the U.S. Department of Energy's Counterintelligence Implementation Plan  
DOE/IG-0459\* Unclassified Computer Network Security at Selected Field Sites  
DOE/IG-0455\* Sale of a Paragon Supercomputer by Sandia National Laboratory  
Ongoing NNSA Surveillance and Dual Revalidation  
Ongoing Protective Force/OTS Firearms  
Ongoing Computer Incident Reporting

### **SIGNIFICANT OPEN RECOMMENDATIONS**

#### **Contract Administration**

- Determine what alternatives are available to resolve conflicting statutes relating to competition with the private sector; seek clarification or legislative resolution to the non-competition versus competition dichotomy; develop a methodology for communicating technology transfer procedures and practices to stakeholders. *(IG-0479)*
- Develop program specific guidance for evaluating contractor functions and monitor field implementation of contractor make-or-buy efforts. *(IG-0460)*
- Include bioassay services in make-or-buy plans; maintain cost records sufficient to determine whether bioassay services should be performed in-house or subcontracted out; and establish a standard schedule of cost elements to use in comparing the cost of performing bioassay services in-house against the cost of subcontracting for bioassay services. *(IG-0458)*
- Take aggressive action to control the excessive cost of Architectural and Engineering services; award contracts for architectural and engineering services, competitively based on technical competence and price. *(IG-0424)*
- Adopt processes and procedures to collect and validate the estimated and actual cost information used as a basis for performance measurement. *(IG-0439)*

#### **Environmental Remediation**

- Ensure that personnel performing metal surveys at the East Tennessee Technology Park are adequately supervised, and monitor the quality of surveys performed. *(IG-0481)*
- Designate a Headquarters office to be responsible and accountable for groundwater monitoring activities; accumulate information on well installation, sampling techniques and frequency, and laboratory analysis costs; and expedite the integration of groundwater monitoring activities. *(IG-0461)*
- Complete development and implementation of the integrated project baseline (River Protection Project); re-evaluate the risk of proceeding into construction of the vitrification facilities at Hanford without complete design; and fill critical contract administration vacancies. *(IG-0456)*
- Reduce the amount of downtime between incineration campaigns; sort, segregate, and characterize the inventory of mixed waste; and close the Waste Experimental Reduction Facility Incinerator as soon as other treatment options are in place. *(IG-0454)*

- Use two blend tanks to prepare and feed PUREX into the incinerator and increase feed rate for solid waste. *(IG-0453)*
- Characterize the inventory of incinerable waste as soon as possible to facilitate preparation of a burn plan that will allow the Toxic Substance Control Act Incinerator to operate more efficiently; and close the incinerator as soon as other treatment options are in place. *(IG-0451)*
- Seek to amend the 1995 interim Record-of-Decision in order to achieve cleanup levels that are consistent with land use decisions and challenge future Records of Decision having cleanup objectives that are inconsistent with projected land uses. *(IG-0446)*
- Require Los Alamos to provide actual detailed remediation cost data on a site-by-site basis. *(IG-0410)*

### **Human Capital**

- Develop and implement a performance plan for knowledge preservation activities and for integrating site activities throughout the Department for the nuclear weapons complex. *(IG-0428)*

### **Information Technology**

- Adhere to the provisions of the Department's information technology architecture; reduce the approval threshold for major IT investments; consolidate development activities; increase control over potentially duplicative efforts by developing an accurate and complete system inventory; and maintain accurate data on information system lifecycle development and maintenance costs. *(IG-0485)*
- Perform a feasibility study to determine whether an integrated business information system should be implemented; establish performance measures to assess progress; develop a detailed project plan; and assign a project manager with overall responsibility for the project. *(IG-0466)*
- Develop and implement mandatory Department-wide standards governing the acquisition of computer software and negotiate and award Department-wide commercial-off-the-shelf software contracts that include enterprise-wide deployment based on the standards. *(IG-0463)*

### **Infrastructure**

- Establish an overall science and production focal point in the NNSA; update all budget-planning assumptions; conduct condition assessment surveys at all production plants and laboratories; prepare Ten-Year Site Plans at each production facility; establish consistent performance measures for infrastructure maintenance; and develop a contingency plan prioritizing infrastructure activities. *(IG-0484)*

- Revise the Department's Critical Infrastructure Protection Plan to include expert review team comments and new implementation milestones; prepare a detailed, comprehensive resource plan for all critical infrastructure protection efforts; reallocate budgetary resources; and establish specific critical infrastructure protection performance measures. *(IG-0483)*

## **Property Controls and Asset Inventories**

- Establish controls to ensure that the contractor at Rocky Flats Technology Site identifies and screens weapons parts prior to disposal; forwards weapons parts to sites where they are needed; controls accountable weapons parts; and documents the weapons parts shipped offsite. *(IG-0475)*
- Strengthen the collection and management of real property information; include the users of the real property information in the process; and coordinate changes with the Department's Information Technology Architecture. *(IG-0468)*
- Dispose of all materials determined to be excess and, where appropriate, make these items available for sale to others; fully implement the inventory management plans at the Kansas City Area Office and Kansas City Plant. *(IG-0450)*
- Limit leased space to minimum amount necessary to perform the Department's mission; develop comprehensive site development plans for all geographic locations, including Headquarters; maintain an accurate Department-wide database for all leased property; and coordinate all new leasing activity with each of the Departmental offices that maintain space in the proposed leasing area. *(IG-0402)*
- Reevaluate requirements for all Departmental owned or controlled land against current and foreseeable requirements and dispose of all non-essential land identified. *(IG-0399)*

## **Security**

- Ensure that officials of the Department and its contractors are held accountable for management failures that result in the improper transmittal of classified material. *(IG-0488)*
- Resolve to fully implement Departmental Notice 205.1, Unclassified Cyber Security Program; correct identified security vulnerabilities; establish specific goals and performance measures for improving the level of unclassified computer security relating to network operations. *(IG-0459)*
- Address weaknesses in Sandia's High-Risk Property Control Process and Sandia's Property Management process; develop an opinion on the legality of Department contractors inquiring about the possible foreign ownership of companies that bid on excess property. *(IG-0455)*
- Develop and negotiate with appropriate Russian officials a policy on minimum levels of access to facilities and information required before upgrade initiation and for verification of upgrade use after installation. *(IG-0452)*



- Improve the Department's export licensing review process and strengthen the Department's deemed export licensing process. (*IG-0445*)
- Complete inventories and measurements of special nuclear materials. (*IG-0388*)

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