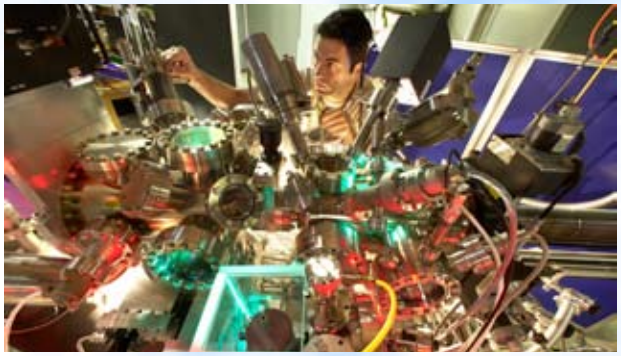
Management's Discussion and Analysis



Stanford Synchroton Radiation Laboratory at Stanford Linear Accelerator Center (SLAC).

Acting Deputy Secretary Kupfer at Colombian Coal Mine.

Outdoor Test Facility at National Renewable Energy Laboratory.

High Explosives Application Facility, Lawrence Livermore National Laboratory.

Mission

Discovering the solutions to power and secure America's future

Vision

A unified Department of Energy that keeps its commitments to achieve results for America

Operating Principles

- *Ensure safe, secure, and environmentally responsible operations*
- *Act with a sense of urgency*
- *Work together*
- *Treat people with dignity and respect*
- *Make the tough choices*
- *Keep our commitments*
- *Embrace innovation*
- *Always tell the truth*
- *Do the right thing*

Strategic Themes

- *Strategic Theme 1 – Energy Security*
- *Strategic Theme 2 – Nuclear Security*
- *Strategic Theme 3 – Scientific Discovery and Innovation*
- *Strategic Theme 4 – Environmental Responsibility*
- *Strategic Theme 5 – Management Excellence*

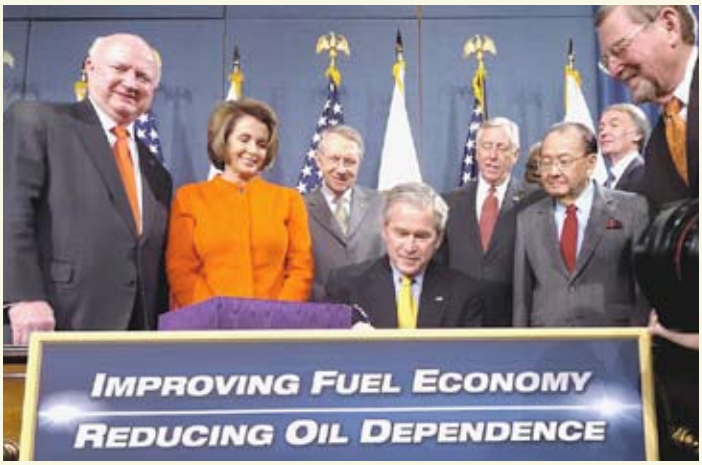
History

The Department has one of the richest and most diverse histories in the Federal Government, with its lineage tracing back to the Manhattan Project and the race to develop the atomic bomb during World War II. Following that war, Congress created the Atomic Energy Commission in 1946 to oversee the sprawling nuclear scientific and industrial complex supporting the Manhattan Project and to maintain civilian government control over atomic research and development. During the early Cold War years, the Commission focused on designing and producing nuclear weapons and developing nuclear reactors for naval propulsion. The creation of the Atomic Energy Commission ended the exclusive government use of the atom and began the growth of the commercial nuclear power industry, with the Commission having authority to regulate the new industry.

In response to changing needs and an extended energy crisis, the Congress passed the Department of Energy Organization Act in 1977, creating the Department of Energy. That legislation brought together for the first time, not only most of the government's energy programs, but also science and technology programs and defense responsibilities that included the design, construction and testing of nuclear weapons. The Department provided the framework for a comprehensive and balanced national energy plan by coordinating and administering the energy functions of the Federal Government. The Department undertook responsibility for long-term, high-risk research and development of energy technology, Federal power marketing, some energy conservation activities, the nuclear weapons programs, some energy regulatory programs and a central energy data collection and analysis program.

Over its history, the Department has shifted its emphasis and focus as the energy and security needs of the Nation have changed. Today, the Department contributes to the future of the Nation by promoting our energy security, maintaining the safety and reliability of our nuclear stockpile, cleaning up the environment from the legacy of the Cold War and developing innovation in science and technology.

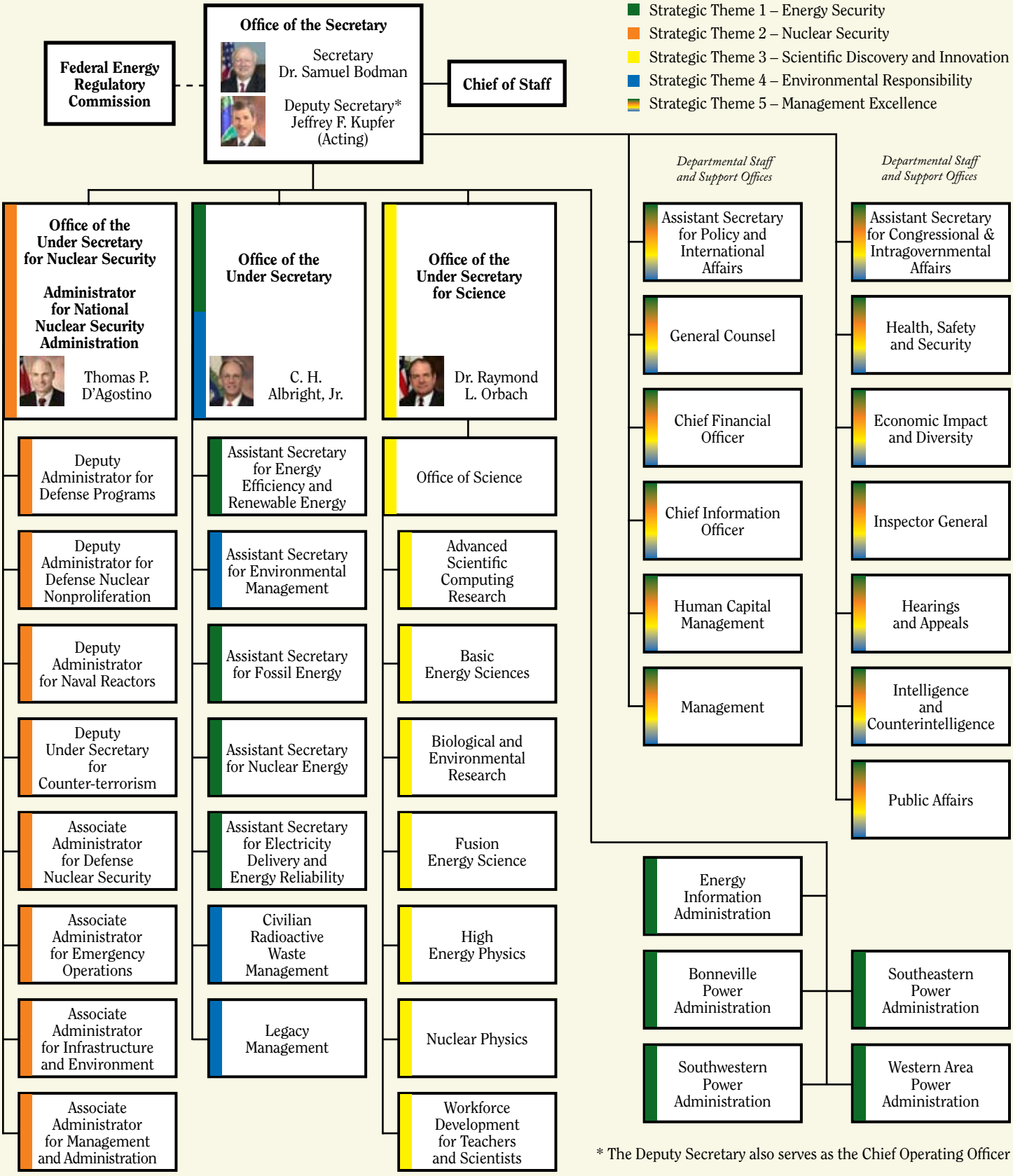
President George Bush signs Energy Policy Act of 1992.



President Bush signing the Energy Independence and Security Act of 2007.

Secretary Bodman and Al-Naimi.

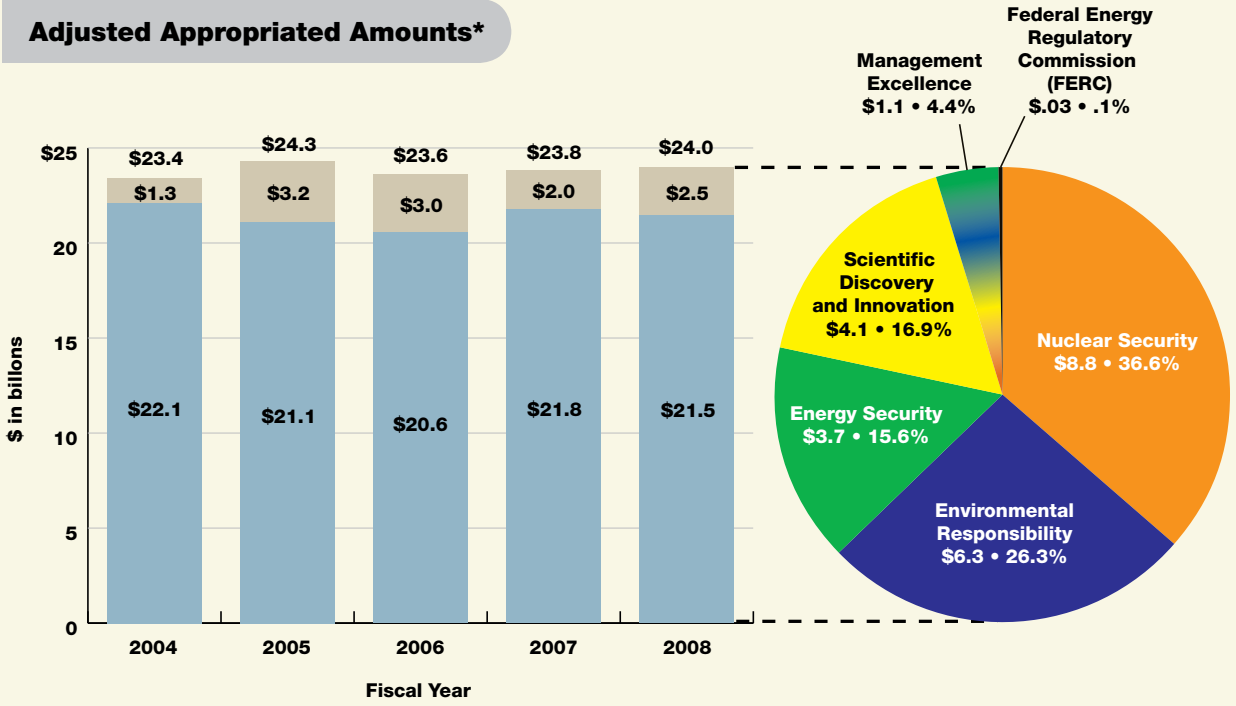
Agency Organizational Structure



* The Deputy Secretary also serves as the Chief Operating Officer

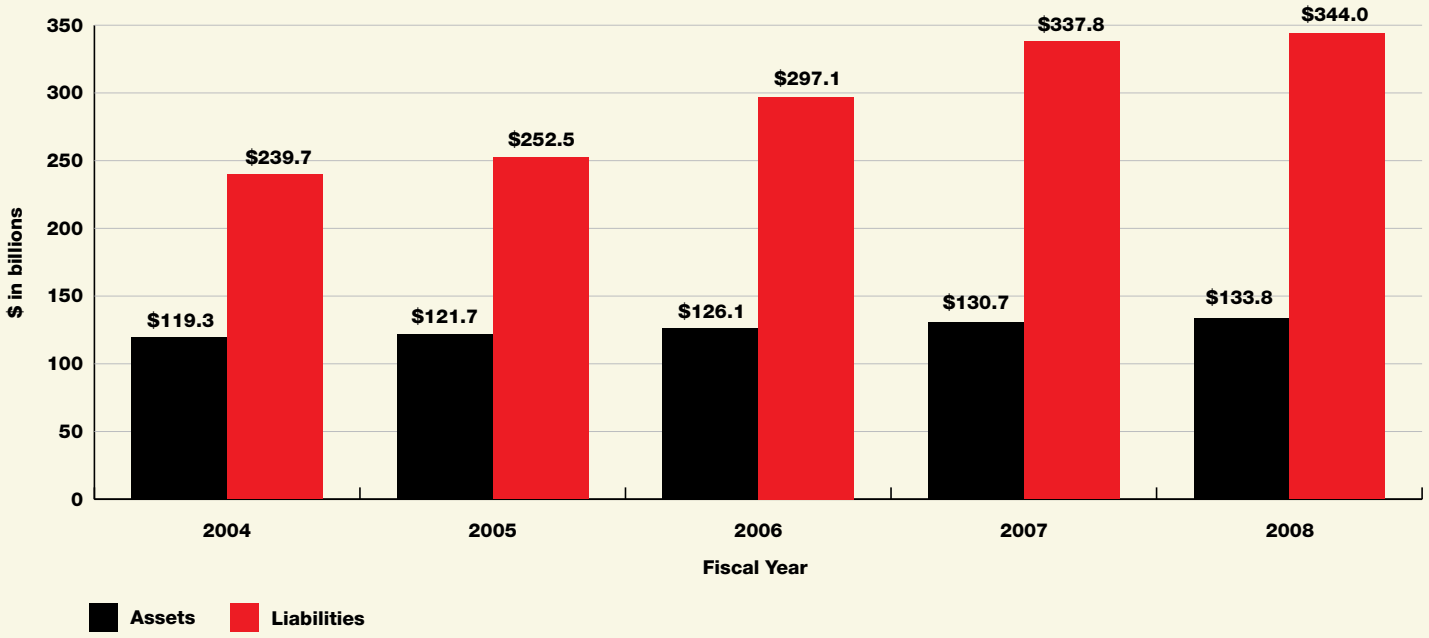
Financial Resources

Adjusted Appropriated Amounts*



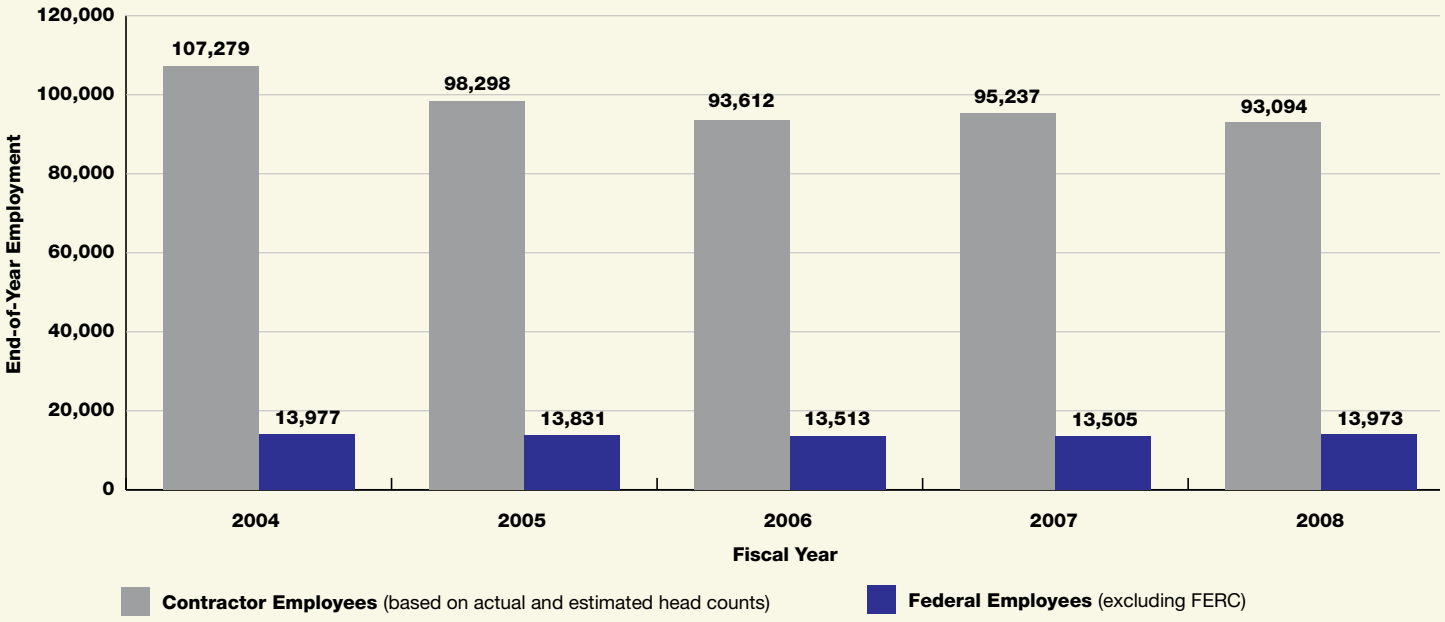
* Adjustments include reprogrammings, transfers-in from other Federal agencies and recissions.

Assets and Liabilities

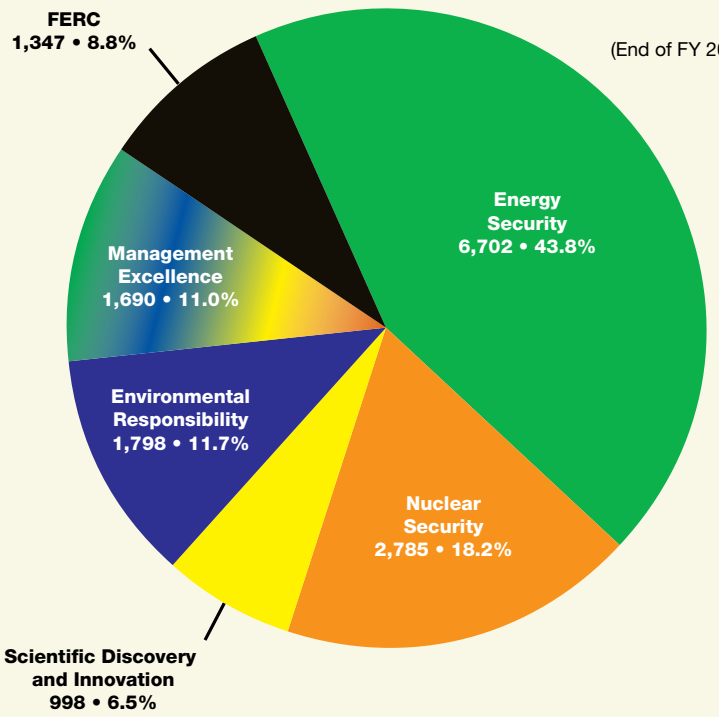


Human Capital Resources

DOE Federal and Contractor Employees

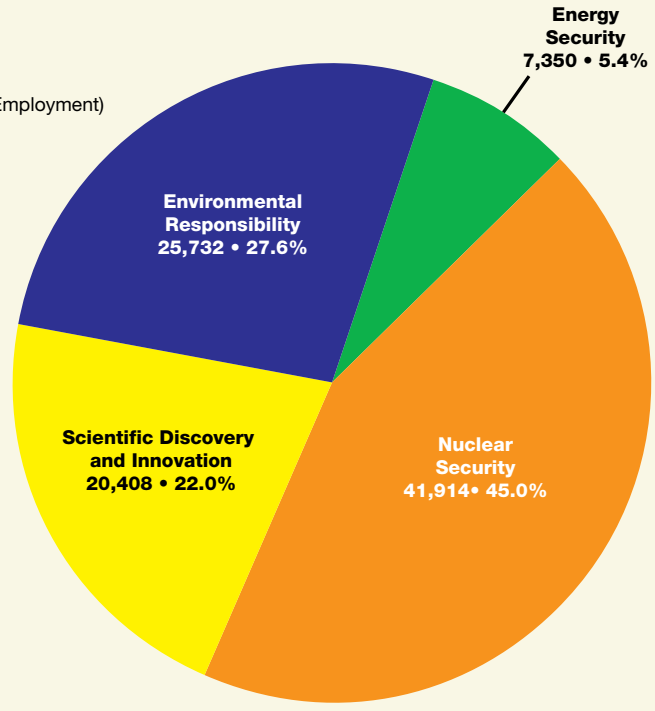


DOE Federal Employees by Strategic Theme

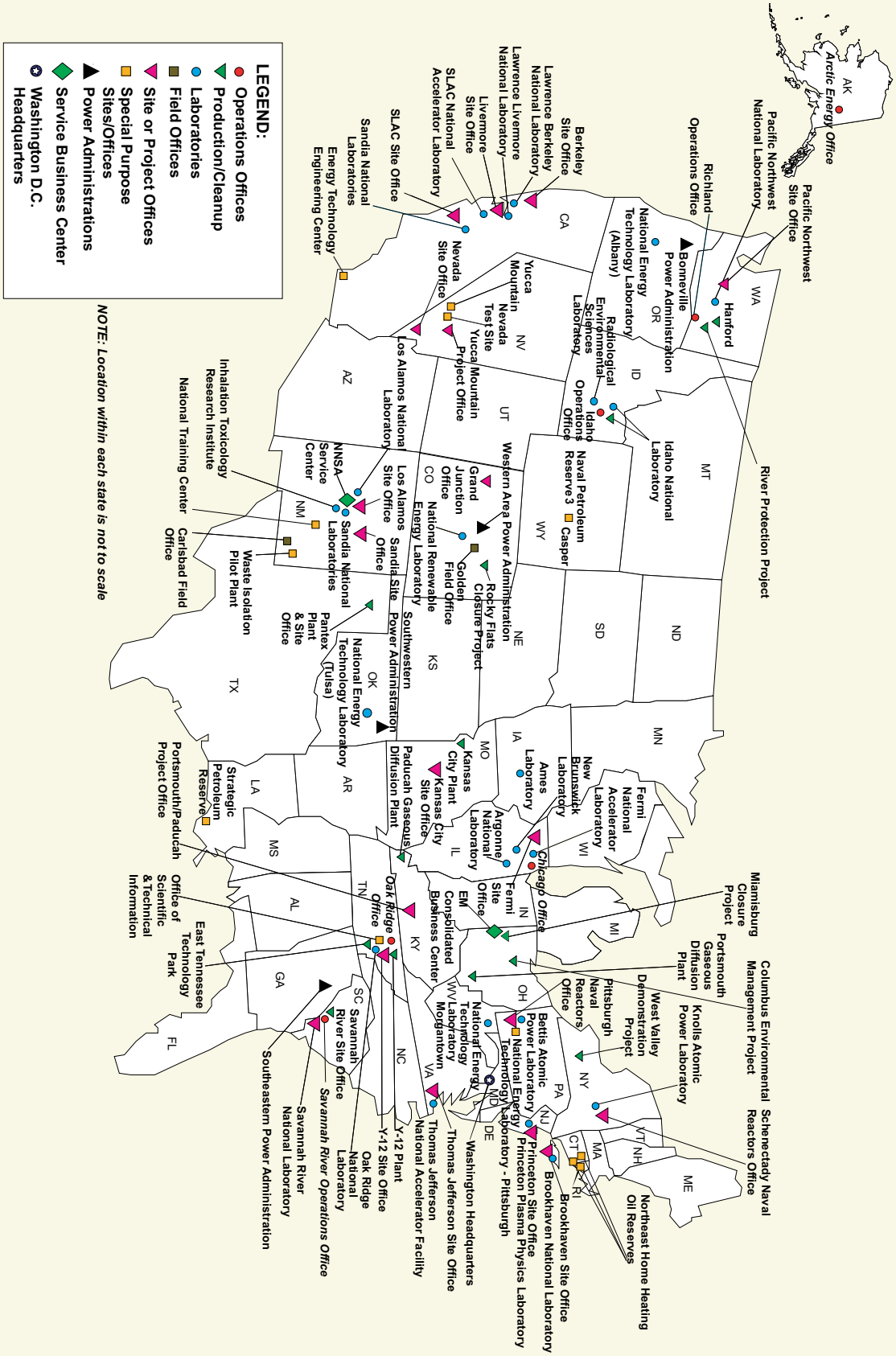


DOE Contractor Employees by Strategic Theme

(Not available for Management Excellence Theme)



Major Laboratories and Field Facilities



Performance and Accountability Report Card

Score	Requirement or Initiative	Supporting Indicators
G	Government Management Reform Act – Financial Statement Audit	— Unqualified Audit Opinion
G	Federal Managers' Financial Integrity Act – Internal Controls (Section II) Financial Systems (Section IV)	— No Material Weaknesses (Section II) — Financial Systems generally conform to (Section IV) requirements and no FISMA significant deficiencies identified.
G	OMB Circular A-123, Appendix A	— No Material Weaknesses
G	Federal Financial Management Improvement Act	— Substantially comply with Federal financial management system requirements.
G	Federal Information Security Management Act (FISMA)	— No FISMA significant deficiencies identified. Annual report indicated DOE making progress although challenges continue to exist. (http://ig.energy.gov/documents/IG-0801.pdf)
G	Improper Payments Information Act	— <1% Erroneous Payment Rate Not Considered Significant Risk per OMB Guidance

President's Management Agenda

In 2001, the President unveiled the President's Management Agenda (PMA) and challenged the federal government to become more efficient, effective, results-oriented and accountable. Over the past seven years, the PMA has become the primary framework by which the Department has implemented changes to support the President's management goals. The PMA reflects the President's on-going commitment to achieve immediate and measurable results that matter to the American people.

Each agency is held accountable for its performance in carrying out the PMA through quarterly scorecards issued by the Office of Management and Budget (OMB). Agencies are scored green, yellow or red on their status in achieving overall goals or long-term criteria, as well as their progress in implementing improvement plans. The Department is scored against six PMA initiatives highlighted in the chart below. Further information on OMB's management of the PMA may be found at http://www.ExpectMore.gov.

President's Management Agenda Scorecard www.Results.gov	Current Status as of September 30, 2008	Progress in Implementation
Human Capital	Y	G
Commercial Services Management	R	Y
Financial Performance	G	G
E-Government	Y	Y
Performance Improvement	G	G
Real Property	G	G

G Green (Success): Implementation is proceeding according to plan.

Y Yellow (Mixed Results): Some slippage or other issue(s) requiring adjustment.

R Red (Unsatisfactory): Initiative in serious jeopardy absent significant management intervention.

DOE by the Numbers

$33,213	FY 2008 budgetary resources (obligations incurred $ in millions)
727,000,000	Barrels of current capacity in the Strategic Petroleum Reserve
138	Number of patents in FY 2008 resulting from DOE-sponsored research and development
86	Number of Nobel Laureates affiliated with DOE and predecessor agencies
4	Number of top 10 computers in the world affiliated with DOE (Top 500 List)
140,000,000	Cumulative miles of safe, reliable and militarily effective nuclear propulsion plant operation

Program Assessment Rating Tool

In 2002, the OMB developed the Program Assessment Rating Tool (PART) as an instrument for implementing the PMA and the Budget and Performance Integration Initiative. The motivation behind the PART was the administration's desire to assess and measure the accomplishments of federal programs so that the federal government could improve its performance. The PART provides federal agencies with a disciplined tool for assessing program planning, management and performance against quantitative, outcome-oriented goals. It is a tool to inform the funding and management decisions so that programs can become more effective. As an instrument for periodically evaluating the efficiency and effectiveness of federal programs, the PART enables managers to identify and rectify existing and potential problems associated with program performance.

From FY 2002 through 2008, the Department has evaluated 55 of its current programs. Of these assessed programs, 75 percent are rated as "Moderately Effective" or "Effective." The following chart shows DOE's average results by strategic theme:

DOE PART Results By Strategic Theme

	Average Score	Average Rating
Theme 1: Energy Security	68	Adequate
Theme 2: Nuclear Security	85	Effective
Theme 3: Scientific Discovery and Innovation	86	Effective
Theme 4: Environmental Responsibility	66	Adequate
DOE-Wide Results	75	Moderately Effective

Theme 5, Management Excellence is not included in the PART. More information on PART scores and OMB's findings is available at www.ExpectMore.gov.

Strategic Themes and Program Performance

The Department's commitment to its mission is outlined in its Strategic Plan. The Department has worked with OMB and Congress to extend the life of its 2006 Strategic Plan into the next Presidential Administration. Under the strategic roadmap, the Department strives to deliver results along five strategic themes and 16 strategic goals to achieve its mission.

The performance, financial and other related information presented in this report is structured around these themes and goals. The Department's Strategic Plan can be viewed at www.energy.gov/about/strategicplan.htm.

Solar Decathlon on the Mall.

Theme 1 | Theme 2 | Theme 3 | Theme 4 | Theme 5

Energy Security

Promoting America's energy security through reliable, clean and affordable energy.

Hydropower, Southeastern Power Administration.

Strategic Goals

1) Energy Diversity
2) Environmental Impacts of Energy
3) Energy Infrastructure
4) Energy Productivity

Supporting Offices

1) Nuclear Energy
2) Fossil Energy
3) Energy Efficiency and Renewable Energy
4) Electricity Delivery and Energy Reliability
5) Energy Information Administration
6) Power Marketing Administrations

Federal Employees (End of year employment): **6,702**
Contractor Employees (Actual and estimated head counts): **5,040**
Program Costs (gross $ in millions): **$6,880**

Strategic Goal 1 – Energy Diversity: Increase our energy options and reduce dependence on oil; thereby, reducing vulnerability to disruptions and increasing the flexibility of the market to meet U.S. needs.

Strategic Goal 2 – Environmental Impacts of Energy: Improve the quality of the environment by reducing greenhouse gas emissions and environmental impacts to land, water and air from energy production and use.

Strategic Goal 3 – Energy Infrastructure: Create a more flexible, more reliable and higher capacity U.S. energy infrastructure.

Strategic Goal 4 – Energy Productivity: Cost-effectively improve the energy efficiency of the U.S. economy.

Energy is a force powering business, manufacturing and the transportation of goods and services to serve the American and world economies. Energy supply and demand plays a vital role in our national security and the economic output of our nation.

The Department of Energy is working to meet these challenges through implementing four goals to improve our energy security. This includes increasing the diversity of domestic energy supply options which in turn reduces our susceptibility to fluctuation in the energy markets. We are working to discover clean energy alternatives that minimize the impacts to our environment but at a competitive cost that does not burden the U.S. consumer. We are pursuing technologies to improve the reliability of our energy infrastructure to meet higher future energy needs. And we are working to improve the efficiency of our energy use to reduce costs and curtail increasing demand for energy.

The Department of Energy had both accomplishments and challenges throughout FY 2008 in meeting its mission of

promoting America's energy security through reliable, clean and affordable energy. These include:

Highlighted Accomplishments


Strategic Petroleum Reserve.

- **Ensuring a Secure Oil Supply:** Maintained four government-owned Strategic Petroleum Reserve oil storage facilities with a combined storage capacity of 727 million barrels of crude oil, representing an investment of more than $20.5 billion in energy security.

- **Securing Energy Availability:** DOE was instrumental in meeting the needs of U.S. refineries after Hurricanes Gustav and Ike caused extensive power outages and substantial disruptions in crude oil supplies. Contracts were awarded at year-end releasing approximately 5 million barrels of crude oil from the Reserve to respond to the damaged logistical supply system. The crude oil and associated premiums will return in 2009.

- **Developing New Clean Renewable Fuels:** DOE continued to make progress in reducing the cost of cellulosic ethanol by improving fermentation yield and conversion of tars from gasification. Both of these accomplishments are critical to achieving the 2012 goal of $1.33/gal ethanol. In addition, DOE awarded seven demonstration-scale cellulosic biorefineries projects and is negotiating two more. These demonstrations, coupled with the four commercial-scale demonstrations represent substantial progress toward validating cost-competitiveness of cellulosic biofuels.

- **Solar Energy Breakthrough:** World record for solar cell efficiency of 40.8 percent achieved at DOE's National Renewable Energy Laboratory that puts us on a path to increase clean energy supply and reduce costs in the future. This technology will lead to higher efficiency for concentrating photovoltaic technologies and help achieve the goal of developing solar cells that are projected to be ready for widespread deployment at a levelized cost of electricity of 5 to 10 cents per kilowatt hour by 2015.

- **New Nuclear Power Plants:** Two DOE industry partners had combined construction and operating license applications docketed by the Nuclear Regulatory Commission (NRC) for review, representing significant progress toward deployment of new nuclear power plants.

- **Fossil Power Advances:** DOE continues to make progress in its development of advanced, affordable Integrated Gasification Combined Cycle (IGCC) technology. The new technology that DOE has demonstrated at pilot scale would achieve a thermal efficiency of 42 percent at a capital cost of $1,608/kW, compared to the baseline capital cost of $1,840/kW, according to systems analysis projections of full scale IGCC systems.

- **Developing Clean Coal Technologies:** Restructured the FutureGen project to demonstrate cutting-edge carbon capture and storage technology at multiple commercial-scale clean coal power plants.

- **Supplying Critical Energy Data and Analysis:** DOE's Energy Information Administration (EIA) provided unbiased energy information on current energy markets to promote sound policy-making and public understanding of energy and its impact on the economy and the environment. EIA's weekly petroleum supply and natural gas shortage reports were closely watched indicators of current energy market conditions. EIA's energy projections were widely-used baselines for analyses of proposed energy and environmental policies.

Challenges

- **Alternative Energy Costs:** The cost to the consumer for clean energy alternatives is still higher, in most cases, than traditional energy sources such as coal and oil.

- **New Energy Supplies:** Clean, renewable energy technologies only account for 10 percent of total U.S. primary energy production.

- **Modernizing the Electric Grid:** Transmission and other infrastructure instruments will be required to cost effectively and efficiently integrate renewable energy resources into the nation's electric grid.


Electric Grid Research.

Plug-In Hybrid Electric Vehicle at National Renewable Energy Laboratory.


Transmission Towers at Western Area Power Administration.

Nuclear Security

Ensuring America's nuclear security.

Warhead Safety Component.

Strategic Goals

1) Nuclear Deterrent
2) Weapons of Mass Destruction
3) Nuclear Propulsion Plants

Supporting Offices

1) National Nuclear Security Administration

Federal Employees (End of year employment): **2,785**
Contractor Employees (Actual and estimated head counts): **41,914**
Program Costs (gross $ in millions): **$9,088**

Strategic Goal 1 – Nuclear Deterrent: Transform the nation's nuclear weapons stockpile and supporting infrastructure to be more responsive to the threats of the 21st Century.

Strategic Goal 2 – Weapons of Mass Destruction: Prevent the acquisition of nuclear and radiological materials for use in weapons of mass destruction and in other acts of terrorism.

Strategic Goal 3 – Nuclear Propulsion Plants: Provide safe, militarily effective nuclear propulsion plants to the U.S. Navy.

USS New Hampshire, Naval Reactors.

Ensuring America's National Nuclear Security is a major focus of the Department of Energy. This is accomplished through maintaining a reliable and functional nuclear deterrent while at the same time transforming our nuclear capability to emerging 21st century threats such as terrorism. The Department is also working to prevent nuclear weapons or radiological materials falling into the hands of terrorists or other hostile entities by securing nuclear materials and pursuing a non-proliferation strategy. Finally, the Department works to provide the U.S. Navy with safe and effective nuclear propulsion plants.

The Department of Energy had both accomplishments and challenges throughout FY 2008 in meeting its mission of ensuring America's nuclear security. These include:

Highlighted Accomplishments

- **Formulated a National Nuclear Deterrent Strategy:** In conjunction with the Secretary of Defense, the Department of Energy reported to Congress on the type of deterrent strategy needed for "National Security and Nuclear Weapons in the 21st Century."

- **Securing Domestic Nuclear Materials:** Completed construction of the Highly Enriched Uranium Materials Facility at the Y-12 National Security Center in Oak Ridge, Tennessee, which allows us to consolidate uranium storage and improve security. Continued an aggressive effort to improve the physical security at sites around the country.

Highly Enriched Uranium Materials Facility, Y-12.

- **Assisted in Securing Foreign Nuclear Materials:** Completed security upgrades for 39 buildings containing weapons usable material at Russian nuclear sites and installed radiation detection equipment at seven major ports and 53 border crossings in Russia and six other countries.

- **Partnered with Other Countries to Counter Weapons of Mass Destruction:** Conducted international outreach and training to assist foreign governments in developing emergency management programs to counter the threats from weapons of mass destruction.

- **Maintaining a Reliable and Functional Nuclear Deterrent:** Built the world's fastest computer, the Roadrunner at Los Alamos National Laboratory (LANL), which performs 1,000 trillion calculations per second and enables more reliable simulations of nuclear weapons performance.

Roadrunner Supercomputer.

Challenges

- **Underground Nuclear Test Ban:** Maintaining a reliable U.S. nuclear stockpile without underground testing is a significant technical and management challenge.

- **Consolidating Domestic Nuclear Materials:** During the transition to a smaller, safer, more secure and less expensive nuclear weapons complex, the Department must obtain the proper certifications for packaging the hazardous material and take extremely high security measures before, during and after each shipment.

Scientific Discovery and Innovation

Strengthening U.S. scientific discovery, economic competitiveness and improving quality of life through innovations in science and technology.

Strategic Goals

1) Scientific Breakthroughs
2) Foundations of Science
3) Research Integration

Supporting Offices

1) Science

Federal Employees (End of year employment): **998**
Contractor Employees (Actual and estimated head counts): **20,408**
Program Costs (gross $ in millions): **$3,790**

Strategic Goal 1 – Scientific Breakthroughs: Achieve the major scientific discoveries that will drive U.S. competitiveness; inspire America; and revolutionize our approaches to the nation's energy, national security and environmental quality challenges.

Strategic Goal 2 – Foundations of Science: Deliver the scientific facilities, train the next generation of scientists and engineers and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.

Strategic Goal 3 – Research Integration: Integrate basic and applied research to accelerate innovation and to create transformational solutions for energy and other U.S. needs.

The Department of Energy delivers discoveries and scientific tools that transform our understanding of energy and matter and advance the national, economic and energy security of the United States. The Department endeavors to achieve the major scientific discoveries that will drive U.S. competitiveness, inspire America and revolutionize our approaches to the nation's energy, national security and environmental quality challenges. We also deliver the scientific facilities, train the next generation of scientists and engineers, and provide stewardship over ten national laboratories, their capabilities and infrastructure required for U.S. scientific primacy; and integrate basic and applied research to accelerate innovation and to create transformational solutions.

The Department of Energy had both accomplishments and challenges throughout FY 2008 in meeting its mission to strengthen U.S. scientific discovery, economic competitiveness and improving quality of life through innovations in science and technology. These include:

Highlighted Accomplishments


Bio Energy Science Center.

- **Discovering New Clean Renewable Fuels:** Opened three new DOE Bioenergy Research Centers where top-scientists can discover breakthroughs that will make biofuel production cost-effective.

- **Using Nanoscience to Engineer Better Materials:** Provided the five DOE Nanoscience Research Centers with advanced tools for researchers to study matter at the atomic scale. Researchers will be able to design materials with properties tailored to specific needs such as strong, lightweight materials, new lubricants and more efficient solar energy cells.


Linac Coherent Light Source.

- **Building the World's Best Scientific Instruments:** Moved closer to completion of the Linac Coherent Light Source, the world's first x-ray free electron laser, which will enable scientists for the first time to observe chemical reactions and biological processes at the molecular level in real time. Began construction of the 12 giga-electron-volt Continuous Electron Beam Facility Upgrade Project which will allow scientists to study the basic building blocks of matter with unprecedented precision and resolution.

- **Probing the Secrets of the Universe:** Launched the Fermi Gamma-ray Space Telescope, in partnership with NASA, to observe and understand high-energy particles in space and search for the potential components of dark matter.

- **Improving Climate Predictions:** Deployed the Atmospheric Radiation Measurement mobile facility in China which will provide new observations of clouds and dust to improve climate predictions.

- **World's Fastest Computers:** Upgraded the Jaguar supercomputer (Oak Ridge, Cray XT4) to be the fastest in the world for open science; will be used to simulate complex physical, biological and socioeconomic systems with greater realism and predictive power.

Challenges

- **Burgeoning Global Energy Crisis and Economic Competition:** Today America faces the dual challenge of a burgeoning global

energy crisis and intensifying global economic competition that makes the search for fundamental breakthroughs in science and technology more urgent than ever. Overcoming our energy and environmental challenges and keeping America competitive will require more than incremental improvements in current technologies; it will require the transformational breakthroughs that only fundamental research in basic science can provide.

– **Training Future Scientists and Engineers:** There is a growing need for scientists and engineers in the private and public sectors, including researchers, to operate the national laboratories across the nation. Providing technical and scientific training is vital to ensure America's economic and energy future.

– **Foundational Research for Tomorrow's Economy:** Like early research on electrons and computers, today's basic research must lay the foundation for America's future economic prosperity and energy security. Basic research in physics, chemistry, biology and supercomputing must lead to next generation breakthrough technologies.

Environmental Responsibility

Protecting the environment by providing a responsible resolution to the environmental legacy of nuclear weapons production.

Strategic Goals

1) Environmental Cleanup
2) Managing the Legacy

Supporting Offices

1) Environmental Management
2) Legacy Management
3) Civilian Radioactive Waste

Federal Employees (End of year employment): 1,798
Contractor Employees (Actual and estimated head counts): 25,732
Program Costs (gross $ in millions): $5,678

Northwest Scrap Yard, Paducah.

Strategic Goal 1 – Environmental Cleanup: Complete cleanup of the contaminated nuclear weapons manufacturing and testing sites across the United States.

Strategic Goal 2 – Managing the Legacy: Manage the Department's post-closure environmental responsibilities and ensure the future protection of human health and the environment.

The Federal government is charged with the dual responsibilities of addressing the nuclear weapons production legacy of our past and providing the necessary environmental infrastructure for today that will ensure a clean and safe environment for future generations. To meet those objectives, the Department of Energy seeks to complete the cleanup of the contaminated nuclear weapons manufacturing research and testing sites across the United States and manage the Department's post-closure environmental responsibilities while ensuring the future protection of human health and the environment.

The Department of Energy had both accomplishments and challenges throughout FY 2008 in meeting its mission of protecting the environment by providing a responsible resolution to the environmental legacy of nuclear weapons production. These include:

Highlighted Accomplishments

- **Remediation Plan:** Released an Engineering and Technology Roadmap in March 2008, which details initiatives aimed at reducing the technical risks and uncertainties associated with cleaning up nuclear waste from nuclear weapon production in energy research, over the next 10 years.

- **Hanford Site Completes Regulatory Milestone Ahead of Schedule:** Retrieved 9,700 cubic meters of radioactive, solid waste from the Hanford Site in Washington State meeting a Tri-Party Agreement milestone more than three months ahead of schedule and below budgeted cost.


Cleanup at Hanford.

- **License Application Submitted:** Sent application to the NRC in June 2008 seeking authorization to build a national repository for spent nuclear fuel and high-level waste at Yucca Mountain, Nevada; the NRC has since docketed the application and accepted it for full technical review.


Yucca Mountain License Application.

Challenges

- **Weapons Cleanup:** Completing the cleanup of 100 contaminated nuclear weapons manufacturing and testing sites across the United States by 2025.

- **Yucca Mountain Delays:** Delays in beginning acceptance of spent nuclear fuel at commercial utilities have resulted in court judgments against the Department. These judgments are required to be paid out of the U.S. Treasury's judgment fund and are in addition to the funds that will be required to license, construct and operate the repository and supporting infrastructure. Currently, the earliest projected date that the repository could begin operations is 2020 and based on that repository opening date, taxpayer liabilities are currently estimated to be over $12 billion.


Robot Technology, Yucca Mountain.

Management Excellence

Enabling the mission through sound management.

Strategic Goals

1) Integrated Management
2) Human Capital
3) Infrastructure
4) Resources

Supporting Offices

1) Chief Information Officer
2) Chief Financial Officer
3) Intelligence and Counterintelligence
4) General Counsel
5) Congressional and Intergovernmental Affairs
6) Human Capital Management
7) Health, Safety and Security
8) Economic Impact and Diversity
9) Inspector General
10) Hearing and Appeals
11) Management
12) Public Affairs
13) Policy and International Affairs

Federal Employees (End of year employment): 1,690
Contractor Employees (Actual and estimated head counts): not available
Program Costs (gross $ in millions): not available

Strategic Goal 1 – Integrated Management: Institute an integrated business management approach throughout DOE with clear roles and responsibilities and accountability to include effective line management oversight by both Federal and contractor organizations.

Strategic Goal 2 – Human Capital: Ensure that the DOE workforce is capable of meeting the challenges of the 21st Century by attracting, motivating and retaining a highly skilled and diverse workforce to do the best job.

Strategic Goal 3 – Infrastructure: Build, modernize and maintain facilities and infrastructure to achieve mission goals and ensure a safe and secure workplace.

Strategic Goal 4 – Resources: Institutionalize a fully integrated resource management strategy that supports mission needs and postures the Department for continuous business process improvement.

The mission of the Department is enabled through the work of good management processes performed by our major program and staff offices. To manage the Department better, we are working to integrate management processes across the Department and clarify responsibility and accountability in the work that cuts across the organization. We are focused on recruiting, retaining and motivating the next generation of DOE workers before our aging workforce begins to retire. We are cognizant that our facilities are aging and continuing to conduct cutting age mission work in a safe and secure manner will require that we maintain our facilities in good working order. Finally, we are focused on using our financial resources wisely and improving business processes where practical to improve efficiency and reduce costs.

The Department of Energy had both accomplishments and challenges throughout FY 2008 in meeting its responsibilities to enable the Department's mission through sound management. These include:

Highlighted Accomplishments

- **Improving Business Processes:** Linked human capital management efforts and policies to the Department's missions, strategies and goals while providing for continuous improvement in efficiency and effectiveness.

- **Technological Advancement:** Strengthened information technology management through consistent execution of robust information technology (IT) Capital Planning and Investment Control oversight and reporting processes designed to ensure successful investment performance.

- **Asset Accountability:** Improved financial performance in project management by enhanced use of Earned Value Management (EVM) techniques that objectively track physical accomplishment of work and provide early warning of performance problems; currently, 70 percent of the Department's capital asset projects have certified EVM systems.

- **Strengthening Human Capital:** Implemented workforce planning techniques throughout the agency and continue to work with DOE business elements to pilot new planning and simulation tools to further assist in the development of consistent workforce plans across DOE.

- **Succession Planning:** Enhanced outreach and recruitment strategies and implemented a comprehensive talent management system – Leadership and Management Plan to Succeed – designed to ensure the DOE has a continuous supply of internal and external candidates for leadership positions.

- **Procurement Improvements:** Deployed DOE-wide corporate Strategic Integrated Procurement Enterprise System, which will replace and consolidate as many as 30 procurement-related systems across the Department. Issued revised contracting authority that raised delegation levels to $50 million for major DOE contracting offices. Instituted a corporate Acquisition Career Management Training program to ensure that DOE's acquisition workforce receives timely and focused contract training. Completed a comprehensive Root Cause Analysis of contract and project management deficiencies in April 2008 and approved a Corrective Action Plan in July 2008.

Challenges

- **Recruiting Employees:** An increased attrition rate due to retirements and competition with the private sector for the most talented prospects in the scientific, technical, operational and management professions has resulted in the need to enhance recruitment strategies and streamline the hiring process to fill critical vacancies and avoid hiring delays and the inability to attract top recruits. DOE will need to hire approximately 5,000 new employees in the next four years just to maintain current workforce levels.

- **Cyber Security:** Protecting DOE's computer networks from cyber attacks that have increased in complexity, frequency and aggression. DOE is attacked over ten million times each day in a wide variety of ways. Although DOE has a cyber security defense based on industry and government best practices, cyber attacks continue to evolve to avoid detection by these defenses.

DOE, Forrestal Building.

Secretary Bodman Speaking to the Nation's Future Leaders.

Analysis of Financial Statements

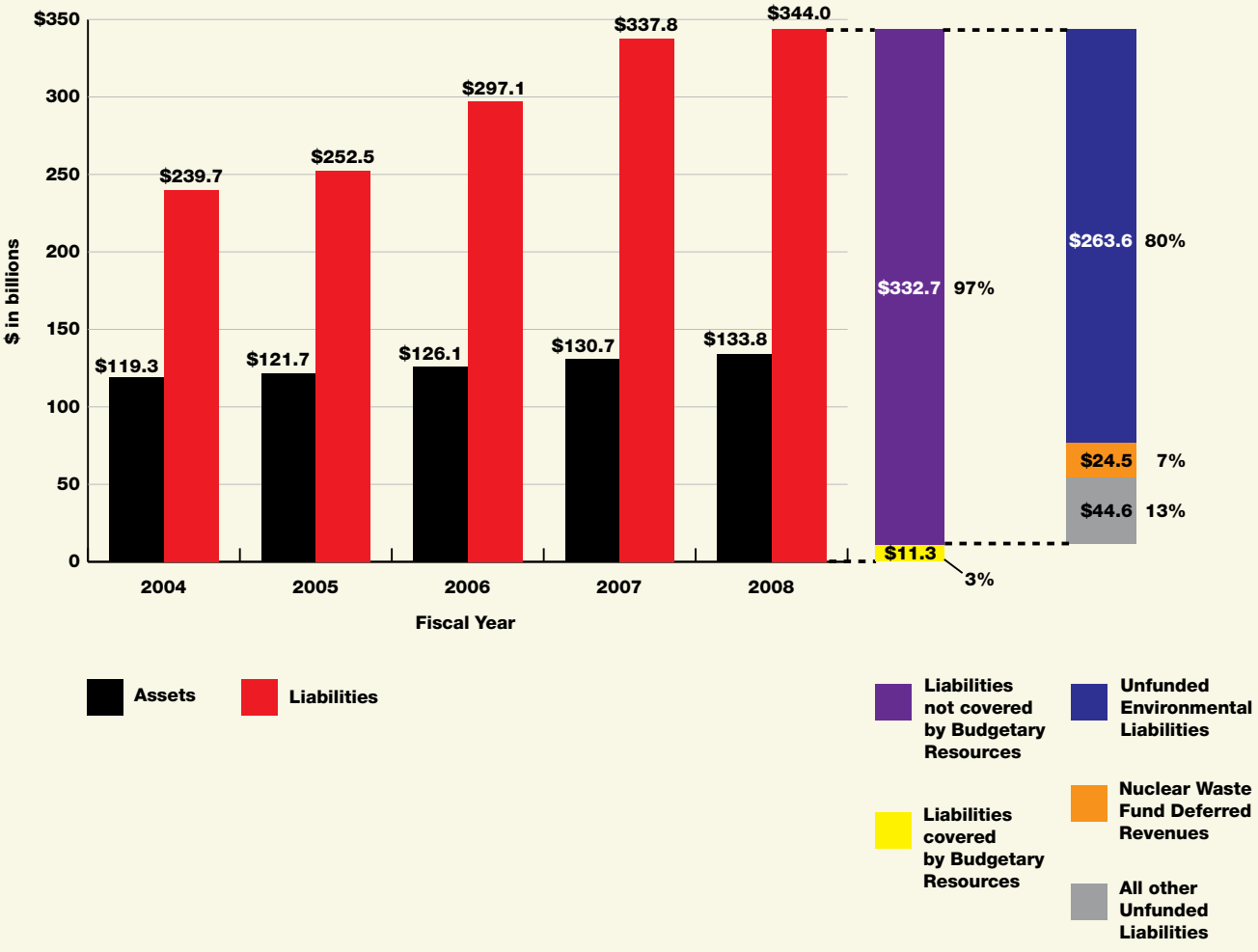
The Department's financial statements are included in the Financial Results section of this report. Preparing these statements is part of the Department's goal to improve financial management and provide accurate and reliable information that is useful for assessing performance and allocating resources. The Department's management is responsible for the integrity and objectivity of the financial information presented in these financial statements.

The financial statements have been prepared to report the financial position and results of operations of the entity, pursuant to the requirements of 31 U.S.C. 3515(b). The statements have been prepared from the Department's books and records in accordance with generally accepted accounting principles prescribed by the Federal Accounting Standards Advisory Board and the formats prescribed by the OMB. The financial statements are prepared in addition to the financial reports used to monitor and control budgetary resources which are prepared from the same books and records. The statements should be read with the realization that they are for a component of the U.S. Government, a sovereign entity.

Balance Sheet

The Department has significant unfunded liabilities that will require future appropriations to fund. The most significant of these represent ongoing efforts to clean up environmental contamination resulting from past operations of the nuclear weapons complex. The FY 2008 environmental liability estimate totaled $266 billion and represents one of the most technically challenging and complex cleanup efforts in the world. Estimating this liability requires making assumptions about future activities and is inherently uncertain. The future course of the Department's environmental cleanup activities will depend

Total Assets and Liabilities with Breakdown of FY 2008 Liabilities



on a number of fundamental technical and policy choices, many of which have not been made. The cost and environmental implications of alternative choices can be profound.

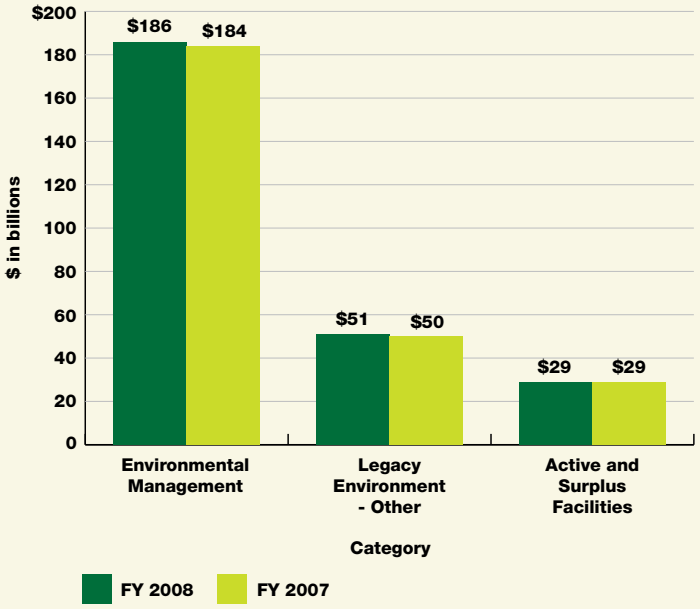
Net Cost of Operations

The major elements of net cost (see chart) include program costs, unfunded liability estimate changes and earned revenues. Unfunded liability estimate changes result from inflation adjustments; improved and updated estimates; revisions in acquisition strategies, technical approach, or scope; and regulatory changes. The Department's overall net costs are dramatically impacted by these changes in environmental and other unfunded liability estimates. Since these estimates primarily relate to past years of operations, they are not included as current year program costs, but rather reported as "Costs Not Assigned" on the Consolidated Statements of Net Cost. A relatively smaller increase in the Department's environmental liability estimates recorded in FY 2008 than in the prior two years resulted in the majority of the significant decrease in FY 2008 Costs Not Assigned.

Budgetary Resources

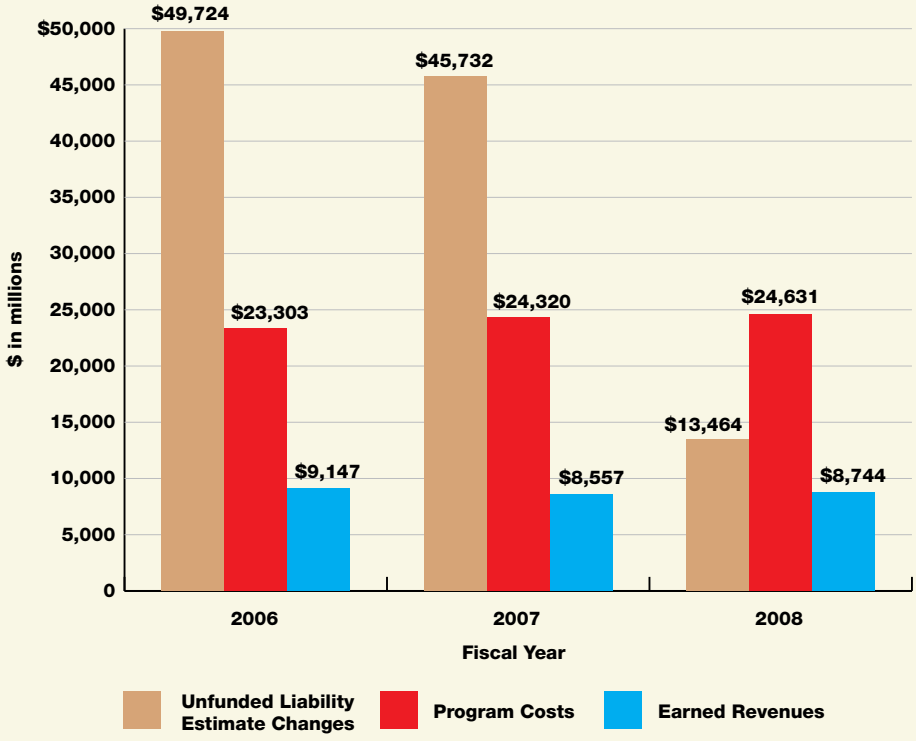
The Combined Statements of Budgetary Resources provide information on the budgetary resources that were made available to the Department for the year and the status of those resources at the end of the fiscal year.

Composition of Environmental Cleanup and Disposal Liability

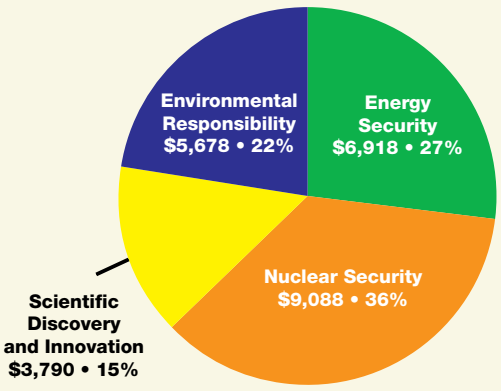


The Department receives most of its funding from general government funds administered by the Department of the Treasury and appropriated for Energy's use by Congress.

Major Elements of Net Cost

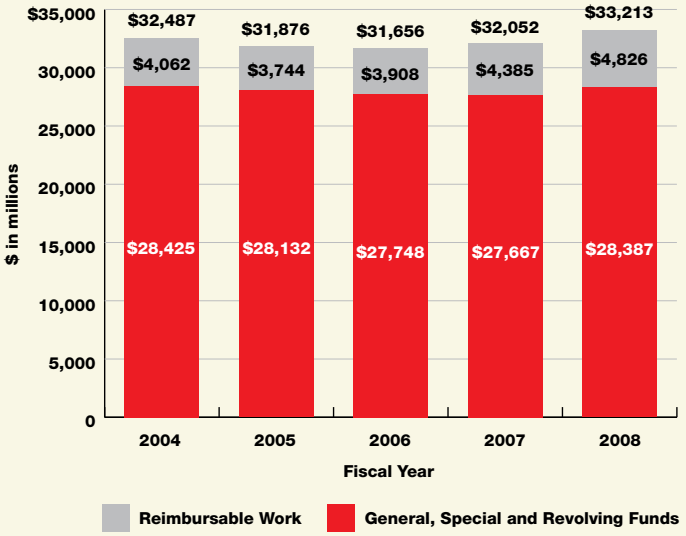


FY 2008 Program Costs (Gross) Breakdown by Strategic Theme



* A portion of the program costs for the Management Excellence strategic theme is distributed among the other four strategic themes.

Obligations Incurred



Since budgetary accounting rules and financial accounting rules may recognize certain transactions at different points in time, Appropriations Used on the Consolidated Statements of Changes in Net Position will not match costs for that period. The primary difference results from recognition of costs related to changes in unfunded liability estimates.

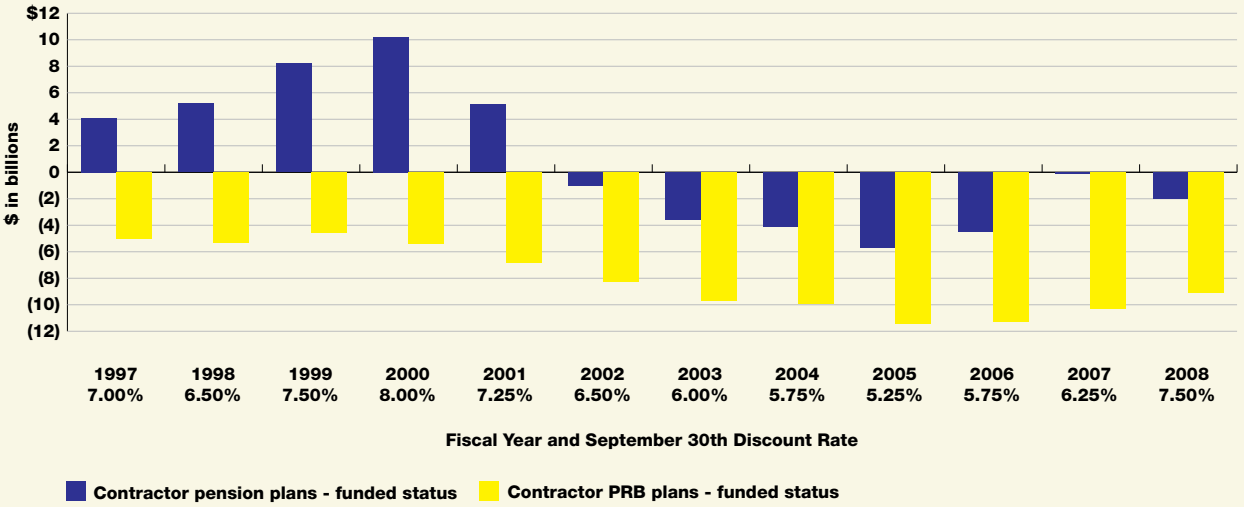
Contractor Pension/Postretirement Benefit Obligations Trend Analysis

A 125 basis point increase in the discount rate (to its highest level in eight years) used to estimate contractor employee pension plan obligations for September 30, 2008 helped to offset a portion of the effect of poor asset performance for FY 2008. Still there was a decline in the funded status from an under funding of less than $0.1 billion in FY 2007 to an under funding of $2.0 billion in FY 2008 for these plans. Of the $1.9 billion decline in the pension funded status from FY 2007 to FY 2008, ($4.5) billion was due to the increase in the discount rate from 6.25 percent on September 30, 2007, to 7.5 percent on September 30, 2008, and $5.8 billion due to much smaller than expected pension plan asset values based on the contractors' long-term rate of return assumption. The $1.3 billion net impact of these two large changes in the funded status plus $0.7 billion for the cost of additional benefits accruing and ($0.1) billion for other gains during the year represent the total change of $1.9 billion.

A similar change in the discount rate used to estimate the obligations of contractor postretirement benefits other than pensions (PRB) improved the funded status by $1.8 billion of the total improvement of $1.2 billion from an under funding of $10.3 billion in FY 2007 to an under funding of $9.1 billion in FY 2008. In addition, the funded status declined by $0.6 billion due to other liability increases during the year ($0.4 billion attributable to experience versus the actuarial assumptions plus $0.2 billion in cost of additional benefits accruing). Assets are not generally set aside to fund PRB plans as they are for pension plans, so PRB plans are not expected to ever become fully funded.

Prior to the adoption of Statements of Financial Accounting Standards (SFAS) No. 158 as of September 30, 2007, changes in the estimated plan benefit obligations were generally amortized over an extended time period, and therefore did not result in an immediate change in obligations recorded by the Department. However, under SFAS No. 158 the funded status of the plans is now fully reflected in the assets and liabilities recorded by the Department. The chart below shows the total net funded status for contractor employee pension and PRB plans and the year-end discount rate from FY 1997 to FY 2008.

Contractor Pension/Postretirement Benefit Obligations Trend Analysis



Analysis of Systems, Controls and Legal Compliance

Management Assurances

The Department's management is responsible for establishing and maintaining an effective system of internal controls to meet the objectives of the Federal Managers' Financial Integrity Act (FMFIA). To support management's responsibilities, the Department is required to perform an evaluation of management and financial system internal controls as required by Sections II and IV, respectively, of FMFIA, OMB Circular A-123, *Management's Responsibility for Internal Control*, and internal controls over financial reporting as required by Appendix A of the Circular. The following assurances are made based on the results of these evaluations, which are reflected in reports and representations completed by senior accountable managers within the Department.

The Department has completed its evaluation of management and financial system internal controls. Based on that assessment, the Department can provide reasonable assurance that management internal controls over the effectiveness and efficiency of operations and compliance with applicable laws and regulations, as of September 30, 2008, were operating effectively with no material weaknesses found in their design or operation. Evaluation results also indicated that the Department's financial systems generally conform to governmental financial system requirements and substantially comply with requirements of the Federal Financial Management Improvement Act.

In addition, the Department has completed its FY 2008 baseline assessment and evaluation of internal control over financial reporting, which includes safeguarding of assets and compliance with applicable laws and regulations, as required by Appendix A of OMB Circular A-123 and Departmental requirements. The evaluation included an assessment of both entity and process controls, as required. Based on the results of the evaluation, the Department is providing reasonable assurance that internal controls over financial reporting as of June 30, 2008, were working effectively and no material weaknesses were identified in the design or operation of the specific controls over financial reporting evaluated.

While the Department has no material weaknesses to report as a result of the above internal control evaluations, the Department is continuing its work to address nine Leadership Challenges. These Leadership Challenges represent the most important strategic management issues facing the Department in accomplishing its mission now and in the coming years.

Samuel W. Bodman
November 14, 2008

Federal Managers' Financial Integrity Act

The Federal Managers' Financial Integrity Act (FMFIA) of 1982 requires that agencies establish internal controls and financial systems to provide reasonable assurance that the integrity of Federal programs and operations is protected. Furthermore, it requires that the head of the agency provide an annual assurance statement on whether the agency has met this requirement and whether any material weaknesses exist.

In response to the FMFIA, the Department developed an internal control program which holds managers accountable for the performance, productivity, operations and integrity of their programs through the use of internal controls. Annually, senior managers at the Department are responsible for evaluating the adequacy of the internal controls surrounding their activities and determining whether they conform to the principles and standards established by the OMB and the Government Accountability Office (GAO). The results of these evaluations and other senior management information are used to determine whether there are any internal control problems to be reported as material weaknesses. The Departmental Internal Control and Audit Review Council, the organization responsible for oversight of the Internal Control Program, makes the final assessment and decision for the Department.

The Department's evaluation for FY 2008 identified no material weaknesses in the design or operation of its management and financial system internal controls.

Appendix A of OMB Circular A-123

Internal control requirements for publicly traded companies contained in the Sarbanes-Oxley Act of 2002 paved the way for the Federal Government to also strengthen its internal control requirements. The issuance of Appendix A of OMB Circular A-123 provides specific requirements to agencies for conducting management's assessment of internal control over financial reporting. In FY 2006, the Department adopted, with the approval of OMB, a three-year, phased implementation approach for completing a baseline assessment of all key processes and controls under these requirements by the end of FY 2008. In accordance with this plan, the Department has completed the baseline assessment of all high, medium and low-risk activities at contractor locations and Federal sites.

The Department's evaluation for FY 2008 did not identify any material weaknesses as of, or subsequent to, June 30, 2008.

Federal Financial Management Improvement Act

The Federal Financial Management Improvement Act (FFMIA) of 1996 was designed to improve Federal financial management and reporting by requiring that financial management systems comply substantially with three requirements: (1) Federal financial management system requirements; (2) applicable Federal accounting standards; and (3) the United States Government Standard General Ledger at the transaction level. Furthermore, the Act requires independent auditors to report on agency compliance with the three stated requirements as part of financial statement audit reports.

The Department has evaluated its financial management systems and has determined that they substantially comply with Federal financial management systems requirements, applicable Federal accounting standards and the U.S. Government Standard General Ledger at the transaction level.

Leadership Challenges

The Department carries out multiple complex and highly diverse missions. Although the Department is continually striving to improve the efficiency and effectiveness of its programs and operations, there are some specific areas that merit a higher level of focus and attention. These areas oftentimes require long-term strategies for ensuring stable operations and represent the most daunting Leadership Challenges the Department faces in accomplishing its mission. Due to the Department's significant efforts taken to address long-standing problems with its management of projects, the previously reported Project Management Leadership Challenge is no longer considered a stand alone challenge and has been incorporated into the contract administration challenge.

The Reports Consolidation Act of 2000 requires that, annually, the Inspector General (IG) prepare a statement summarizing what he considers to be the most serious management and performance challenges facing the Department. These challenges are included in the Other Accompanying Information section of this report. Similarly, in FY 2003 the GAO identified six major management challenges and program risks to be addressed by the Department.

The Department, after considering all critical activities within the agency and those areas identified by the IG and GAO, has identified nine Leadership Challenges that represent the most important strategic management issues facing the Department now and in the coming years. It is the Department's goal that the strategies to address these areas will also help mitigate related IG and GAO management challenges.

To highlight how the Department's strategies for mitigating its Leadership Challenges align with the IG and GAO challenge areas, the following table provides a crosswalk of the relationship between the three. Please note that the IG and GAO did identify areas that are not currently reported as Leadership Challenges by the Department. While the ongoing importance of those areas is recognized and they continue to receive appropriate management attention, management does not consider them to be Leadership Challenges.

IG Challenge Areas FY 2008	GAO Challenge Areas	DOE Leadership Challenges
Contract Administration **S**	Resolve problems in contract management that place the agency at high risk for fraud, waste and abuse **S**	Contract and Project Administration **S** Acquisition Process Management **S**
Safeguards and Security **D**	Address security threats and problems **D**	Security **D**
Environmental Cleanup **D**	Improve management for cleanup of radioactive and hazardous wastes **D**	Environmental Cleanup **D** Nuclear Waste Disposal **D**
Stockpile Stewardship **D**	Improve management of the Nation's nuclear weapons stockpile **D**	Stockpile Stewardship **D**
Cyber Security **S**		Cyber Security **S**
Energy Supply **D**	Enhance leadership in meeting the Nation's energy needs **D**	
IG Watch List		
Human Capital Management **S**		Human Capital Management **S**
Worker and Community Safety **S**		Safety & Health **S**
Infrastructure Modernization **D**	Revitalize infrastructure **S**	

D Mission Direct S Mission Support

Contract and Project Administration

Description

Congress has directed that the Department take corrective action to be removed from the GAO High Risk List for inadequate contract and project oversight and management. DOE has been on this GAO list since its inception in 1990.

Key Strategies Implemented

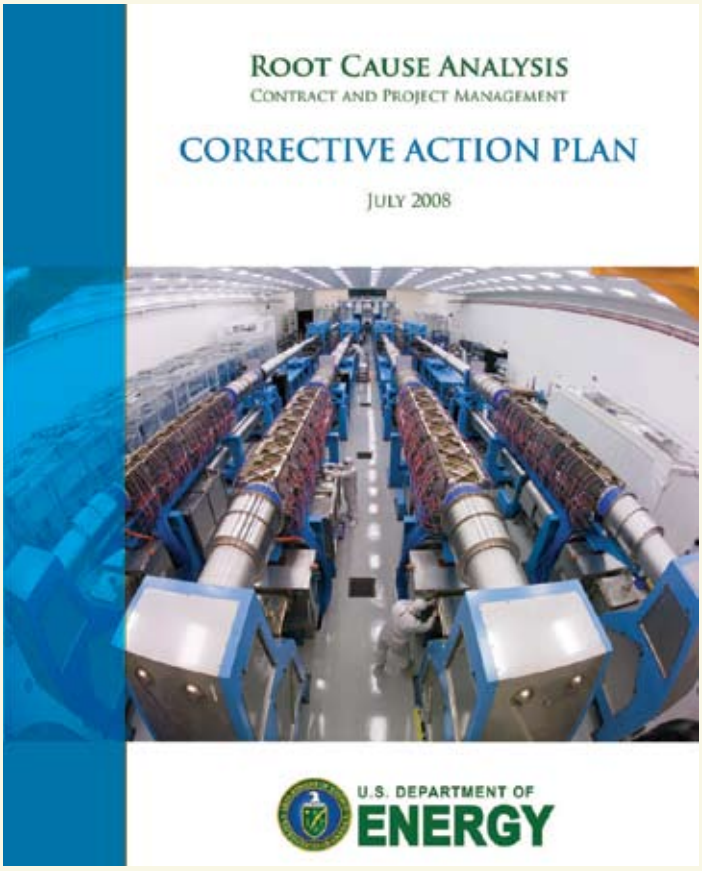
The Department completed a comprehensive Root Cause Analysis of contract and project management deficiencies in April 2008 and approved a Corrective Action Plan (CAP) in July 2008. The CAP provides quantifiable, actionable measures with key milestone dates for progress assessment. A CAP Executive Steering Committee (ESC) was established to oversee implementation and thereby ensure that DOE'S efforts to improve contract and project management are focused on addressing the root causes with meaningful and lasting solutions that provide demonstrable results. ESC membership includes representatives from the Under Secretaries' Offices, the Office of Management and the Office of the Chief Financial Officer. The approval of the CAP initiated action on four of the eight corrective measures. CAP implementation and metric status were briefed to the GAO and the OMB in September 2008.

Overarching Vulnerabilities

Key issues identified in the CAP will require a realignment of resources to acquire the appropriate federal staff, contractor support and technology solutions to capture, evaluate and redirect efforts on major projects under construction and in the planning stages. Policies regarding full funding and incremental funding, acquisition strategies and contractor and federal personnel accountability will require changes to Departmental Orders and directives. Secretarial support, along with support from GAO and OMB, will be necessary to affect these broad ranging policy and cultural changes expeditiously. The Department's project management autonomy is in jeopardy if improvement in its project management abilities is not demonstrated, as this function could be directed to other agencies or be subjected to increased oversight. Failure to make significant, measurable progress on these issues may also adversely impact the Department's budget and ability to meet mission milestones and statutory requirements.

Key Strategies Planned

The FY 2009 goals are to improve project front-end planning, enhance the federal project and contract management workforce, align and integrate budget profiles and project cost baselines and improve independent government cost estimates. Action on the next three corrective measures to improve risk management, strengthen federal ownership through sound acquisition strategies and update project and contract management policy and standards will begin at the start of the new calendar year. Action on the final corrective measure, to improve oversight, clarify roles and responsibilities and better align organizational structures is scheduled to begin in July 2009. All corrective measures are planned to be completed by the 3rd quarter of FY 2011. Corrective measures will be monitored, measured and reported quarterly to senior Departmental leadership, OMB and GAO. In addition, DOE has committed to conducting semi-annual meetings with OMB and GAO to review CAP status and report progress to the House and Senate Appropriations Committees in the annual budget request.



Corrective Action Plan.

Acquisition Process Management

Description

The Department is the largest civilian contracting agency in the Federal Government and spends approximately 90 percent of its annual budget on contracts to operate its scientific laboratories, engineering and production facilities and environmental restoration sites. A June 2006 GAO report cited concerns involving delays in awarding contracts and the need for a systematic method. This concern was reiterated by a recent report of the National Academy of Public Administration. In FY 2007, the Department conducted its own assessment of the Business Clearance process and in November of 2007, the Office of Procurement and Assistance Management issued a report on "Reengineering the Business Clearance Process" which identified a number of findings and recommendations for improving the acquisition process including the functioning of the Department's Federal procurement systems throughout the DOE complex.

Key Strategies Implemented

In response to the recommendations of the reengineering report, the Department initiated actions to implement six major initiatives to improve timeliness in awarding contracts, the quality of procurement transactions, and the effectiveness and efficiency of the Department's procurement systems. Actions have been completed on four of the six initiatives as follows:

- Revise Department-wide Policy and Guidance Pertaining to the HQ Business Clearance Process;
- Establish a Procurement Management Review (PMR) Program;
- Assess the Adequacy of the Department's Acquisition Workforce; and
- Revise Procurement Delegation Thresholds.

Overarching Vulnerabilities

The Department has been challenged, both externally and internally, to improve the efficiency and efficacy of the procurement process. Additionally, DOE has determined that it needs to improve the quality of both its procurement systems across the DOE complex and the procurement transactions which they produce. These vulnerabilities should be eliminated or mitigated by the initiatives which are being implemented during FY 2009. There will always be inherent risks whenever the Government procures goods or services. However, the process changes and oversight systems, such as the PMR, will ensure that future risks and vulnerabilities will be avoided or minimized.

Key Strategies Planned

Significant progress has been made in addressing this DOE Leadership Challenge. The majority of actions implementing the recommended corrective measures have been completed. During FY 2009, the Department will make further progress by completing the remaining actions for the initiatives: (1) Implement improvements to the Business Clearance Process and (2) Develop a Concept of Operations to establish a Source Evaluation Board Secretariat Function. Additionally, under the recently re-implemented Procurement Management Review program, the Department will conduct up to six reviews of DOE procurement systems in order to improve the quality of procurement processes in the field.

Headquarters Business Clearance Process Guiding Principles

- ✔ Timely acquisition planning is critical.
- ✔ Effective oversight control systems are essential to ensuring the high quality/ integrity of procurement transactions.
- ✔ Collaboration and cooperation are required for timely, effective procurement processes.

Security

Description

The need for improved homeland defense, highlighted by the threats of terrorism and weapons of mass destruction, created new and complex security issues that must be surmounted to ensure the protection of our critical energy resources, infrastructure and personnel.

Key Strategies Implemented

The Department implemented the following activities in FY 2008 in order to address the security challenge:

- Program and staff offices have completed a review of all Departmental security requirements to identify and validate the basis of each requirement and to ensure the requirements are performance-based, meaningful, clear and concise without being overly prescriptive or redundant.
- The Department continues to work towards meeting the current Design Basis Threat Policy (recently revised and issued as the Graded Security Protection (GSP) Policy) by restructuring security management systems, deploying security technologies and implementing the elite protective force model; consolidating and improving special nuclear material storage facilities; and modifying contractual incentives and performance metrics for their contractor partners to enhance the Department's overall security program effectiveness.
- The Office of Departmental Personnel Security was established to better coordinate personnel security policies; strengthen drug testing requirements; establish a professional education and certification program for Personnel Security specialists; and formalize Personnel Security adjudications processes.

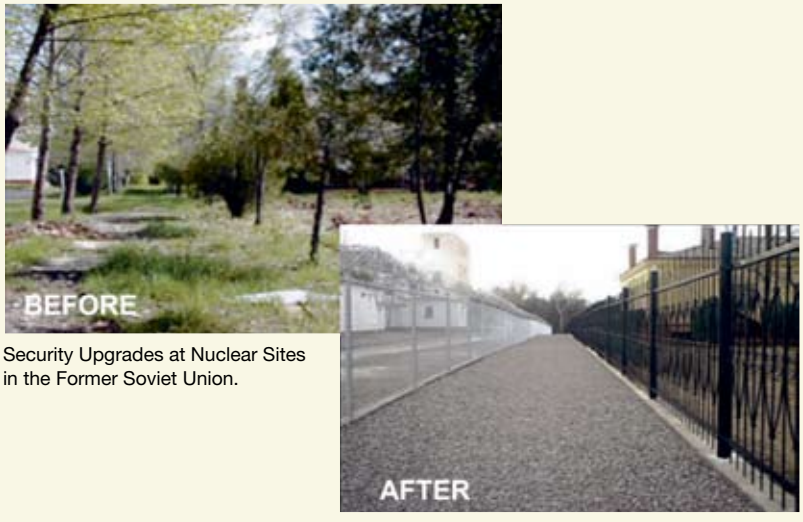
Overarching Vulnerabilities

Continuing security challenges include implementing multifaceted strategies to provide required levels of security while minimizing costs and turnover of key personnel due to an aging workforce.

Key Strategies Planned

DOE will strengthen its security posture by:

- Implementing the requirements of the GSP Policy by updating vulnerability assessments, implementing the elite protective force model and consolidating and improving nuclear material storage facilities;
- Revising, issuing and implementing the DOE Personnel Security Manual;
- Continuing the implementation of Homeland Security Presidential Directive 12 physical and logical access control system requirements to streamline the access authorization process and provide greater security against insider threats;
- Continuing to implement cost-effective security technologies combined with integrated protection tactics to improve protective force survivability and act as force multipliers;
- Maintaining levels of expertise by providing security training and professional development courses through the National Training Center; and
- Continuing to foster improvements to security performance through robust independent oversight and enforcement programs.



Security Upgrades at Nuclear Sites in the Former Soviet Union.


Site Security Training Facility, Y-12.

Environmental Cleanup

Description

Environmental Management's (EM) mission is to cleanup the environmental legacy of nuclear weapons production and nuclear energy research. Fifty years of conducting these activities in a different atmosphere and under less stringent standards than today have resulted in unique hazards and requires complex technical solutions within a large suite of environmental regulations.

Key Strategies Implemented

The Department's environmental cleanup mission is being accomplished through the execution of discrete projects in accordance with applicable rules and regulations while ensuring that worker safety is the Department's number one priority as it carries out the cleanup mission. These projects, some of which will take decades to complete, are being carried out in accordance with industry standard project and contract management principles.

The National Academy of Public Administration (NAPA) conducted a management review of the Department's cleanup program. During the course of the review, recommendations and proposals for improvements in contract and project management performance provided by NAPA were consistent with the strategies and initiatives that were underway. One of the ongoing strategies is the Department's partnering with the U.S. Army Corps of Engineers to identify enhancements required to meet "Best-in-Class" standards for contract and project management. Capabilities at each site and Headquarters were assessed to identify the systems and human capital (both numbers and skill mix) needed to achieve a Best-in-Class contract and project management organization. The assessment included contract execution and management functions and systems, roles and responsibilities of contract administration and project management staff. Gaps in critical areas such as project controls, baseline management, cost estimation, change control and schedule management were highlighted.

Overarching Vulnerabilities

The Department's nuclear legacy cleanup scope is the third largest liability of the United States. To address this liability, several issues continue to challenge DOE's ability to establish and execute its cleanup program.

- Changing conditions modify the life-cycle cost and schedule estimates of the program. Technical and programmatic risks and associated uncertainties are an inherent part of such complex cleanup projects, which can last for decades and often require first of a kind solutions. DOE is defining the risks to the extent possible. The associated cost and schedule estimates assigned to them are being reflected in the life-cycle cost and schedule ranges.
- Compliance agreement milestones establish the scope of work to be performed at a given site and the dates by which the cleanup milestones must be achieved. In some cases, agreements were developed with detailed milestones that prejudged characterization results and focused on near-term milestones without necessarily addressing the highest risks. As EM cleanup progressed and further characterization was completed, it was clear that a cleanup prioritization solely focusing on achieving compliance milestones would not support the greatest reductions of risk and cleanup progress in the most cost-effective manner. Specific cleanup actions can be re-sequenced to reduce risk more quickly; therefore, EM has been reviewing its cleanup agreements with regulators to identify actions that can accelerate risk reduction.
- As well as being responsible for the cleanup of the legacy of the Manhattan Project and the Cold War, the Department must also accommodate new cleanup scope. DOE has a backlog of excess facilities and materials requiring cleanup and will need to integrate the disposition of these liabilities into its existing programs.

Key Strategies Planned

The Department strongly supported the proposals and recommendations that resulted from the NAPA review and has proactively moved to implement. For instance, to specifically address project and contract management performance, the Department developed a Corporate Implementation Plan (CIP) as a roadmap to address the contract and project management challenges in pursuit of its Best-in-Class goal. The successful implementation of the CIP will: result in increased Federal ownership of cleanup projects; standardization of processes; clear communication of requirements and policy; timely and effective change control for both project management and contract management; and the identification and institutionalization of best practices across the complex.

To address human capital issues, the Department is using contractor resources to bridge the gap identified by the skills analysis while Federal staff are being hired. Currently, 30 percent of the gaps identified have been filled by Federal employees. Plans are underway to acquire the necessary Federal personnel resources to address the remaining needs identified in the analysis.

In addition, DOE has developed a planning process that analyzes life-cycle cost profiles for discrete scope elements to inform more optimum allocation of resources across the complex and to identify and accommodate additional cleanup scope. As part of this process, alternative approaches that maximize risk reduction and cost savings are being identified and evaluated.

Nuclear Waste Disposal

Description

The mission of the Office of Civilian Radioactive Waste Management (OCRWM) as authorized by the Nuclear Waste Policy Act of 1982, as amended, (NWPA) is to manage and dispose of the Nation's military and civilian high-level radioactive waste and spent nuclear fuel (SNF). This will be accomplished through the development and operation of a deep geologic repository in a manner that protects the health and safety of the public without harming the environment.

U.S. commercial nuclear reactors supply approximately 20 percent of the Nation's electricity and discharge approximately 2,000 metric tons of SNF each year. Currently, there is an inventory of approximately 58,000 metric tons of commercial SNF and high-level radioactive waste from defense and research activities, stored at 121 temporary locations in 39 States across the Nation. Building a repository to permanently dispose of this material has been a vital part of America's energy, environmental, and security policies for over 25 years.

Pursuant to the NWPA, DOE entered into standard contracts with commercial utilities that produce nuclear power agreeing to begin accepting SNF and high-level radioactive waste by January 1, 1998. In return, the utilities agreed to pay the costs of disposal through payments into the Nuclear Waste Fund based on the amounts of electricity generated and sold. The fees collected from the utilities average approximately $750 million annually. The Nuclear Waste Fund is invested in Treasury instruments which earn approximately $1 billion annually and the balance is approximately $21.1 billion.

Key Strategies Implemented

In 2002, the President recommended and Congress approved a site at Yucca Mountain, Nevada, located on Federal land approximately 90 miles northwest of Las Vegas, for the development of a nuclear waste repository.

In June 2008, DOE submitted a license application for the repository, a major program milestone culminating more than two decades of intense scientific, design and engineering effort by the Nation's top scientists and engineers. The NRC docketed the application on September 8, 2008. According to the NWPA, the docketing of the license application initiates a three-year timeline, with a possible one-year extension, for the NRC to decide whether to grant a construction authorization. As Congress directed in the NWPA, NRC will serve as the regulator for the design, construction, operation and eventual decommissioning of the repository. NRC will conduct extensive technical reviews of the application and also conduct evidentiary hearings to adjudicate contentions raised by interested parties, including the State of Nevada.

The NRC licensing process is designed to be independent, objective, open, expert and comprehensive; thereby, providing assurance that public health and safety will be protected as the repository efforts proceed.

The OCRWM program is funded on a full-cost recovery basis, with the waste generators paying for their respective disposal costs through a fee established in the NWPA. In July 2008, DOE issued its updated total system life cycle cost estimate for the development, construction, operation and final decommissioning of the Yucca Mountain repository system. An assessment of the adequacy of the one mill per kilowatt/hour fee currently paid by nuclear utilities into the Nuclear Waste Fund based on this estimate accompanied the update and concluded that the fee is adequate and found no reason to adjust the fee at this time.

OCRWM has designed a special transportation, aging and disposal (TAD) canister to be the primary means of receiving SNF at Yucca Mountain. The TAD canister system minimizes the need for repetitive handling of SNF by using the same canister from the time it is sealed and leaves a nuclear power plant until it is emplaced in the repository. The system also eliminates the need for the construction of several multimillion square feet, multi-billion dollar facilities for handling spent fuel at the Yucca Mountain repository. In May 2008, DOE awarded two contracts for the design, licensing and demonstration of the TAD canister system.

Overarching Vulnerabilities

Delays in beginning acceptance of spent fuel at the Yucca Mountain repository have already resulted in litigation and judgments for breach of contract against DOE, creating taxpayer liabilities estimated at over $12 billion, if the repository is able to begin operations at the earliest projected date of 2020. Further delays will only increase taxpayer liabilities. The judgments are paid from the Department of Treasury's Judgment Fund which consists of taxpayer funds and not funds from the Nuclear Waste Fund.

If the NRC issues a construction authorization (required by the NWPA to be no later than 2012), DOE will need significant annual funding increases of $1.0 billion to $1.5 billion to construct the repository and essential transportation infrastructure and systems in order to begin operations at the earliest projected date of 2020. The current budgetary process for appropriating funds from the Nuclear Waste Fund to DOE for Yucca Mountain-related activities does not allow the Fund to be used as originally intended by Congress. Without funding reform, Congress is unlikely to provide the resource levels required and the program will be unable to set a credible opening date for the repository. DOE estimates that taxpayer liabilities will further increase by an average of up to $500 million for each year the program is delayed beyond 2020.

Nuclear waste from power plants is currently stored at utility sites. However, millions of Americans live near the 121 temporary storage sites and a long-standing scientific and international consensus recognizes the importance to public safety and national security of consolidating the waste at a single, isolated, secure location. The Federal government continues to have a statutory obligation and financial liability to accept the SNF.

The Global Nuclear Energy Project initiative is pursuing reprocessing or "recycling" of the SNF as a potential component of the disposition path; however, even if the program manages to successfully develop and deploy such technologies, recycling would not remove the need for a repository. All countries that currently reprocess SNF are seeking to locate a permanent repository for certain products of reprocessing. The permanent repository is and will continue to be necessary for a number of reasons. For instance, certain commercial SNF, the large existing inventory of Navy SNF and DOE high-level radioactive waste are inappropriate or ill-suited for recycling. Any recycling also would produce some high-level radioactive waste that must be disposed of in a permanent repository.

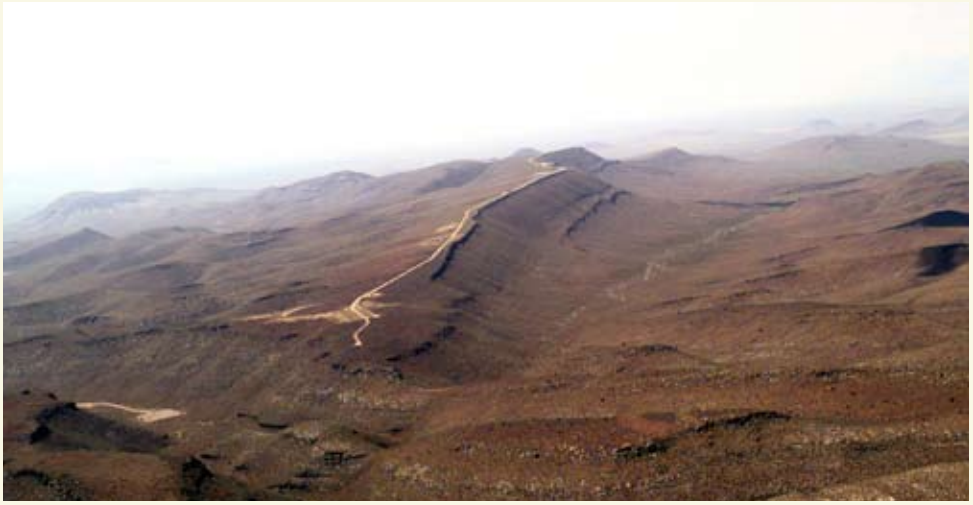
Key Strategies Planned

Moving into the licensing process, OCRWM's key objective will be to provide adequate and timely responses to requests for additional information from the NRC staff and to provide other necessary support for the licensing effort. To achieve this objective, OCRWM has in place, and will strive to maintain throughout the process, both an expert, experienced legal and regulatory team and the scientific and technical team whose work underlies the license application and who possess a comprehensive and thorough expert understanding of the analyses and data evaluating the Yucca Mountain site.

Funding reform will be needed for the project to move forward, such as that proposed in the 110th Congress, S. 37 and H.R. 3358, which would reclassify utility fees paid into the Nuclear Waste Fund as discretionary and offset budget requests. This would result in program appropriations from the Nuclear Waste Fund not competing for appropriations with other Federal programs and not impacting the Federal budget deficit. To contain the taxpayer liability for the Department's delay (currently over $12 billion) by starting operations at a repository in 2020, DOE will need funding reform to assure adequate funding is available for increased construction costs starting in 2012.

In June 2008, OCRWM informed utilities interested in constructing new reactors that DOE is prepared to discuss a revision to the standard disposal contracts for the new reactors that are anticipated to be constructed to replace the existing commercial fleet. The NWPA requires that utilities have such a disposal contract with DOE or be engaged in good faith negotiations with DOE for such a contract, before the NRC may issue a license for a new reactor. Numerous utilities have indicated their desire to enter into contracts with DOE for new nuclear power plants they intend to construct and the Federal government is pursuing those negotiations.

The program is transitioning from a science focus to a project execution focus to function successfully as an NRC licensee to construct and operate the repository, as well as manage the transport and receipt of SNF and high-level radioactive waste. An important step in implementing this transition will be the reorganization of OCRWM, effective January 4, 2009, that is necessary to execute three major Federal projects: build and operate the repository; build and operate the Nevada rail line; and develop and operate the national transportation system for materials going to Yucca Mountain. Some of the key concepts of the new organization include: increasing the organization size and capabilities in Nevada; establishing a Chief Operating Officer in the Director's Office; having fewer direct reports to the Director; establishing a new Office of Technical Management; and establishing an Office of Project Management.



Yucca Mountain.

Stockpile Stewardship

Description

Stewardship of the Nation's nuclear weapons stockpile is one of the most complex, scientifically technical programs undertaken and the Department needs to ensure that all aspects of this mission-critical responsibility are fulfilled. Based on stockpile stewardship activities the Secretary, jointly with the Secretary of Defense, annually certifies to the President that the nuclear weapons stockpile is safe and reliable and whether underground nuclear testing needs to resume. Success is dependent upon unprecedented scientific tools to: better understand the changes that occur as nuclear weapons age; enhance the surveillance capabilities for determining weapon reliability; and extend weapon lives. The Department must ensure that problems in these areas are aggressively addressed.

Key Strategies Implemented

The Stockpile Stewardship program is composed of discrete elements, several of which are management challenges in their own right. These discrete elements include, but are not limited to, project management, oversight of contractors/contract administration, safety and security, human capital management, and complex transformation. The planning, programming, budgeting and evaluation process ensures that the Department will meet the Nation's nuclear weapons mission. Key strategies include:

- Reducing the Nuclear Weapons Stockpile – Under the Moscow Treaty of 2002 between the United States and Russia, the United States agreed to reduce the size of operationally deployed strategic nuclear weapons to a level that is between 1,700 to 2,200 by 2012. Additionally, President Bush directed in 2004 that in eight years the size of the overall U.S. nuclear weapons stockpile be reduced nearly 50 percent from the time he entered office. That goal was met five years early, so he directed that the stockpile be reduced further by almost 15 percent more by 2012.

- Consolidating Nuclear Material – The Department plans to consolidate nuclear materials at five sites by 2012, with significantly reduced square footage at those sites by 2017. This will further improve security and reduce security costs and is part of the overall effort to transform the Cold War era nuclear weapons complex into a 21st century nuclear security enterprise.

- Consolidating the Nuclear Weapons Complex – Reflecting a reduced stockpile and the need to dismantle Cold War-era facilities, the Department has a plan, known as Complex Transformation, to move from the current aging nuclear weapons complex to a 21st century national security enterprise that is smaller, safer, more secure and more cost effective.

- Maintaining the Nuclear Weapons Stockpile – The United States has not deployed a new nuclear weapon in over 20 years, nor conducted an underground nuclear test since 1992. Instead, scientists maintain current warheads well beyond their original life using sophisticated supercomputers and facilities that test the safety, security and reliability of U.S. weapons in our laboratories versus through an underground nuclear test.

Overarching Vulnerabilities

There is an aggressive approach to correct or mitigate problems as they are identified. For example, processes have been put in place to eliminate a backlog of surveillance tests and resolve deficiencies in the investigations conducted when weapons problems are identified. Plans and financial controls over weapons refurbishment have been strengthened. Self-assessments of project management processes of the Enhanced Surveillance Campaign have been completed, all sites have developed an Enhanced Surveillance Campaign Project Management Improvement Plan and the Enhanced Surveillance Campaign Risk Management Plan was issued. The Life Extension Programs and sub-elements are now subject to the planning, programming, budgeting and evaluation processes and the Department's project management processes. In addition, resource loaded plans that contain cost, scope and milestones were implemented for the Enhanced Test Readiness Program.

Key Strategies Planned

The Department will continue to work through options to transform the Weapons Complex (smaller footprint, consolidated like functions). This comprehensive plan will enhance the capability to respond to national and global security challenges while facilitating the President's vision of a smaller stockpile consistent with our national security needs. To meet the challenges of managing the Stockpile Stewardship Program, there is special focus to:

- Improve the effectiveness of Federal oversight and the contractor assurance systems for nuclear safety, physical and cyber security;
- Ensure the effectiveness of nuclear weapons stockpile planning Complex Transformation;
- Reenergize the nuclear material consolidation for disposition efforts;
- Develop and articulate the organization's Vision for the Future for the integrated roles and missions of the National Security Laboratories;
- Integrate project management best practices; and
- Reenergize the Employer of Choice Initiative.

Cyber Security

Description

Cyber attacks are increasing in complexity and frequency, and are becoming more aggressive. DOE is attacked over 10 million times each day in a wide variety of ways. Although DOE has defense-in-depth mechanisms based on industry and government best practices, some of the very sophisticated attacks have been able to penetrate DOE networks and computers. Cyber attacks continue to evolve to avoid detection by these defenses. The DOE comprehensive cyber security program must continually employ the best available management practices and technical defenses to provide adequate protection of its systems and data in the face of the increasing threat.

Key Strategies Implemented

DOE has implemented a comprehensive cyber security program, with complete and current DOE-wide cyber security guidance in place. Application of this guidance, including timely implementation throughout the DOE complex, depends on actions by the Under Secretaries and other leaders to develop, maintain and oversee implementation of cyber security in each of their organizations, including the DOE National Laboratories. FY 2008 milestones for the cyber security program include:

- Issuance of eight additional cyber security requirements documents and a cyber security Directive on cyber security process requirements;
- Complete re-design of the Department's network backbone to provide better cyber security protection through implementation of a Trusted Internet Connection architecture, including the use of additional protective monitoring capability, consistent with the government-wide Comprehensive National Cybersecurity Initiative, and procurement of equipment to implement this architecture;
- Conducting the second DOE Cyber Summit, which enabled senior leaders to better understand the continually evolving threat, and to plan, at a strategic level, the protection for the Department's most sensitive information;
- Focusing on cyber security awareness training, including outreach activities through workshops for each Departmental program; and
- Implementation of an enterprise-wide, consolidated cyber incident reporting capability.

Overarching Vulnerabilities

The increased number of cyber attacks on DOE and other Federal systems and the increased sophistication of many of these attacks have made continually enhanced cyber security defense a critical part of IT planning and operations for Federal agencies. Protection of the integrity and availability of IT systems and data is essential for DOE to carry out its missions.

Key Strategies Planned

Long-term and continuous corrective action is required due to the evolving nature of cyber security threats. The Department will continue to work towards sustaining and improving its cyber security program by:

- Updating its threat and risk assessment and issuing security architecture guidance;
- Enhancing DOE's enterprise-wide incident reporting capabilities;
- Issuing new directives on common controls and incident management;
- Reviewing security compliance across DOE and improving correction action tracking; and
- Updating training and awareness programs for new threats and defensive measures.

BlueGene/P Supercomputer.

Human Capital Management

Description

The Department requires a highly technical and specialized workforce to accomplish its scientific and technological missions. There is an ongoing challenge to maintain a capable workforce. The challenges in creating and implementing innovative human capital management strategies to maintain a workforce with the right people and skills is compounded by increased competition for individuals with the knowledge, skills and competencies that the Department needs; and the significant retirement challenge that threatens to rob the organization of critical skills. The average employee age is over 49 years and a significant number (30 percent) will be eligible to retire in the next three years. In 2007, retirements exceeded historical trends and attrition reached 7.6 percent. The attrition rate for the first half of 2008 climbed higher, to 8.3 percent. A continuation of this trend can deprive the organization of the skills needed to perform its mission. To maintain its workforce, DOE will need to hire over 5,000 new employees in the next four years.

Key Strategies Implemented

In FY 2008, the Department continued to strategically manage its federal workforce with newly implemented workforce planning techniques throughout the Agency. DOE business elements piloted new automated planning and simulation tools to develop consistent workforce plans across the organization. It also enhanced strategic recruitment and outreach activities; implemented a new Corporate Intern Program; continued to improve the efficiency of the hiring processes; and implemented a new performance management system designed to improve individual and organizational performance accountability.

The National Nuclear Security Administration (NNSA) continues to build a vibrant human capital management program tailored to NNSA's unique mission needs. The Future Leaders Intern Program continues to be successful in bringing new talent into the organization. NNSA has implemented, in partnership with the Office of Personnel Management, an unprecedented pilot personnel demonstration project designed to rebuild DOE's basic Civil Service employment system. The effect of the sophisticated changes will alleviate many traditional regulation-based encumbrances on managerial discretion and flexibility when hiring, promoting, and rewarding employees, even while assuring adherence to the Government's fundamental personnel laws and merit-based Civil Service regulations.

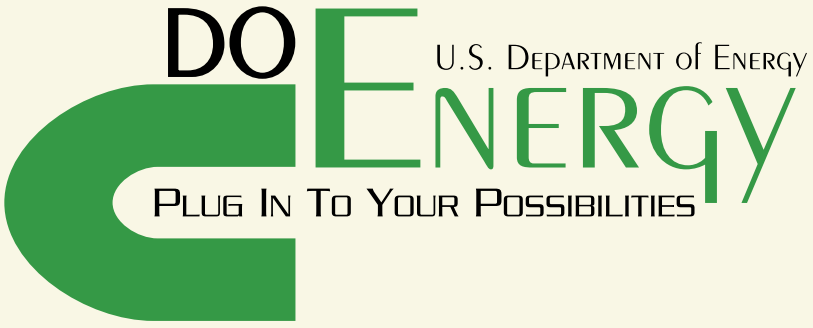
In addition, the Department has developed policies focused on efficient, effective and innovative plans for merit promotion; recruitment, relocation, and retention incentives; student loan repayment; and strategic management of human capital. Programmatic innovations include a performance management and recognition system; the development and use of Managed Staffing Plans in assigning staffing targets, and in identifying critical hiring needs, skills mix imbalances, and buyout eligible occupations; and an automated workforce analysis and planning process.

Overarching Vulnerabilities

The Department has been successful in adding talent to its workforce during FY 2008. The workforce expanded from just fewer than 14,000 federal employees to nearly 15,500 during this period. The Department will continue to focus on competency –centric hiring and development to ensure that the workforce, albeit growing to meet attrition challenges, has the capability to do the work of the organization.

Key Strategies Planned

DOE also continues to work in partnership with other Federal agencies to increase recruitment and hiring flexibilities and with hiring managers on innovative ways to fill mission critical and other hard-to-fill jobs. In addition, the Department is implementing a comprehensive enterprise talent management system to ensure a competent workforce through a more integrated approach to employee development.



Safety and Health

Description

Ensuring the safety and health of the public and the Department's workers is one of our top priorities in accomplishing our challenging scientific and national security missions. Due to the inherently critical nature of these issues, there is the need for continuous vigilance and improvement.

Key Strategies Implemented

The Department implemented the following activities in FY 2008 in order to address the safety and health challenge:

- Departmental elements continued implementation of Integrated Safety Management concepts by performing additional and more robust oversight of worker safety, nuclear safety and quality assurance requirements, independent oversight reviews of site-specific and crosscutting safety programs, as well as enforcement of worker health and safety regulations.

- The Department issued DOE Standard 1189, Integration of Safety into the Design Process and amended DOE Order 413.1, *Program and Project Management for the Acquisition of Capital Assets*, to ensure the identification of hazards early in the design process for new or major modifications to DOE Hazard Category 1, 2 and 3 nuclear facilities and the use of an integrated team approach to design safety into the facility in a way that provides adequate protection for the public, workers and the environment.

- DOE implemented an aggressive outreach program that includes conducting focus group meetings with the Office of Health, Safety and Security, DOE program offices, worker trade unions, professional associations, and other stakeholders to establish and strengthen lines of communication, seek feedback and identify areas of interest and concern.

Overarching Vulnerabilities

Continuing safety and health challenges include the need to maintain a culture of continuous safety and health improvement through re-enforcement and implementation of Integrated Safety Management and related programs.

Key Strategies Planned

DOE will strengthen its safety culture of continuous improvement, worker involvement and management responsibility by:

- Developing safety goals and mechanisms for measuring progress against those goals for each of the major program elements;

- Completing a review of all Departmental safety requirements to identify and validate the basis of each requirement and to ensure the requirements are performance-based, meaningful, clear, and concise without being overly prescriptive or redundant;

- Strengthening the implementation of DOE safety-related programs, e.g., increasing the number of inspections to increase the number of sites eligible for DOE Voluntary Protection Program status and having all DOE sites independently certify their environmental management systems are in conformance with ISO 14000 standards;

- Maintaining levels of expertise by providing safety training and professional development courses through the National Training Center; and

- Continuing to foster improvements to safety performance through robust independent oversight and enforcement programs.

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