U.S. Department of Energy

Performance and Accountability Report

Fiscal Year 2005

DOE/CF – 0001

Table of Contents

www.cfo.doe.gov/progliaison/par2005.htm

Message From the Secretary — i

Foreword — ii

MANAGEMENT'S DISCUSSION & ANALYSIS — 1

Managing Our Energy Security — 3
- History & Mission — 3
- Organization & Locations — 4
- Resources — 6
- Strategic Goals — 7

Program Performance Highlights — 9
- Performance Overview — 9
- Defense – Meeting National Security Challenges — 13
- Energy – Investing in America's Energy Future — 19
- Science – Advancing Scientific Understanding — 27
- Environment – Resolving the Environmental Legacy — 35

Corporate Management — 41
- President's Management Agenda — 41
- Management Challenges & Significant Issues — 43
- Management Control Systems — 53
  - Federal Managers' Financial Integrity Act — 53
  - Federal Financial Management Improvement Act — 53
  - Federal Information Security Management Act — 53
- Improper Payments Information Act — 54

PERFORMANCE RESULTS — **55**

Performance Introduction — 57

Detailed Performance

General Goal 1: Nuclear Weapons Stewardship — 59
General Goal 2: Nuclear Nonproliferation — 87
General Goal 3: Naval Reactors — 103
General Goal 4: Energy Security — 105
General Goal 5: Science — 153
General Goal 6: Environmental Management — 165
General Goal 7: Nuclear Waste — 169
Status of Unmet FY 2004 Performance Targets — 171

FINANCIAL RESULTS — **181**

Message From the Chief Financial Officer — 183

Consolidated and Combined Financial Statements — 185
Principal Statements — 186
Notes to the Consolidated and Combined Financial Statements — 192
Consolidating Schedules — 220
Required Supplementary Stewardship Information (RSSI) — 232
Research and Development Costs — 232
Required Supplementary Information (RSI) — 238
Deferred Maintenance — 238
Budgetary Resources — 239

Auditors' Report — 241
Memorandum from the Inspector General — 241
Independent Auditors' Report — 243
Management's Response to Auditors' Recommendations — 259

Other Accompanying Information — 262

Inspector General's Management and Performance Challenges — 262
Improper Payments Information Act Reporting Details — 264
Other Statutory Reporting — 265
Management's Response to Audit Reports — 265

APPENDICES — **267**

Glossary of Acronyms — 269

AGA

CERTIFICATE OF EXCELLENCE IN ACCOUNTABILITY REPORTING®

Presented to the

Department of Energy

In recognition of your outstanding efforts preparing DOE's Performance and Accountability Report for the fiscal year ended September 30, 2004.

A *Certificate of Excellence in Accountability Reporting* is presented by AGA to federal government agencies whose annual Performance and Accountability Reports achieve the highest standards demonstrating accountability and communicating results.

John H. Hummel, CGFM
Chair, Certificate of Excellence
in Accountability Reporting Board

Relmond P. Van Daniker, DBA, CPA
Executive Director, AGA

Department of Energy Team accepting Certificate of Excellence in Accountability Reporting at the awards reception held by the Association of Government Accountants.

MESSAGE FROM THE SECRETARY

I am pleased to present our Performance and Accountability Report for fiscal year 2005. This report details our goals and progress towards securing the Nation's energy future, pursuing cutting-edge scientific research, and finishing the environmental clean-up of our Cold War nuclear weapons legacy.

In August, President Bush signed into law the landmark Energy Policy Act of 2005, which will encourage energy efficiency and conservation, increase domestic energy production, help modernize the electricity grid and improve electric reliability, and promote the expansion of nuclear energy.

In addition to enhancing our Nation's energy security, the Department also sponsors world-class scientific research through our network of national laboratories and other facilities by investing heavily in scientific programs and infrastructure. And we have moved forward on efforts to establish a repository at Yucca Mountain to safely isolate highly radioactive nuclear waste.

The past year also has witnessed difficult times for many American families, and for our energy sector. Events such as Hurricanes Katrina and Rita have deeply affected the Nation and the Federal Government. In response to these disasters, the Department took several steps to help alleviate energy supply disruptions and restore normal energy services, including the release of oil from the Strategic Petroleum Reserve. In addition, we have launched a comprehensive, national campaign to improve energy efficiency for consumers, businesses and the government.

To meet these various challenges, the Department has been guided by the President's Management Agenda. This report highlights how we are making lasting management improvements and optimizing the use of taxpayer dollars. I am pleased to report that the Department received the Certificate of Excellence in Accountability Reporting from the Association of Government Accountants for our fiscal year 2004 Performance and Accountability Report. This award recognizes agencies whose annual reports achieve the highest standards in presenting financial and performance information, and validates the Department's commitment to exceptional reporting.

The Department has completed evaluations of its management controls and financial management systems and, based on these evaluations, I am providing a statement of assurance that the Department meets the objectives required by the Federal Managers' Financial Integrity Act. However, while the Department finds that its financial management systems generally conform to governmental financial system requirements, we have identified 11 significant issues that represent key areas of focus for the Department where corrective actions are being taken.

In the area of financial reporting, the independent public accounting firm KPMG LLP, working for the Department's Inspector General, was engaged to audit the fiscal year 2005 financial statements contained in this report. Based on this review, the independent auditors issued a disclaimer of opinion and reported a material weakness in internal control relating to financial control and reporting. The Department faced significant challenges resulting from the combined effect of the consolidation of our finance and accounting operations and implementation of a new, commercial off-the-shelf accounting system.

As a result, the Department has identified financial control and reporting as a significant issue under the Federal Managers' Financial Integrity Act. We have already resolved many initial challenges and will continue taking actions to complete key reconciliations and resolve system conversion issues as further described in this report. I can provide reasonable assurance that the performance information contained in our report is complete and reliable and describes the results achieved towards our goals and the challenges that remain.

As our country faces many new and evolving challenges, be assured that the Department is prepared to protect the energy security of the Nation, and will strive to provide effective stewardship over the public funds entrusted to us by the American people.

Samuel W. Bodman
November 15, 2005

FOREWORD

The Reports Consolidation Act of 2000 authorizes Federal agencies to consolidate various reports in order to provide performance, financial and related information in a more meaningful and useful format. In accordance with the Act, the Department of Energy's (Department or DOE) Performance and Accountability Report (PAR) is a consolidation of reporting requirements that will serve multiple audiences and users with varied levels of detail. This report is organized by the following three sections and provides a thorough documentation of the stewardship of our mission-critical resources and services provided to the American people.

- **Management's Discussion and Analysis** section provides information on the Department's mission, its organizational structure, and its financial resources. It provides executive-level information on the Department's management controls, systems and compliance with laws and regulations and identifies the most significant management issues and challenges facing the Department. This section also highlights the Department's performance within our critical mission objectives and describes the methods employed to monitor, assess, verify and validate our performance information.
- **Performance Results** section provides detailed information and an assessment of our progress on all of the Department's performance goals and targets for the past four years.
- **Financial Results** section provides a Message from the Chief Financial Officer, the Department's consolidated and combined financial statements, Auditors' Report, the Inspector General's and Performance Management Challenges and other statutory reporting.

THIS REPORT MEETS THE FOLLOWING LEGISLATED REPORTING REQUIREMENTS:

Department of Energy Organization Act of 1977 – requires an annual report on agency activities.

Federal Managers' Financial Integrity Act (FMFIA) of 1982 – requires a report on the status of management controls and the most serious problems.

Federal Financial Management Improvement Act (FFMIA) of 1996 – requires an assessment of the agency's financial systems for adherence to government-wide requirements.

Inspector General (IG) Act of 1978 (Amended) – requires information on management actions in response to Inspector General audits.

Government Performance and Results Act (GPRA) of 1993 – requires performance results achieved against all agency goals established.

Government Management Reform Act (GMRA) of 1994 – requires agency audited financial statements.

Reports Consolidation Act of 2000 – requires the consolidated reporting of performance, financial and related information in a Performance and Accountability Report.

Improper Payment Information Act (IPIA) of 2002 – requires reporting on agency effort to identify and reduce erroneous payment.

Federal Information Security Management Act (FISMA) of 2002 – requires annual evaluations of information security programs and practices.

Management's Discussion & Analysis

MANAGING OUR ENERGY SECURITY

History & Mission

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 an atomic bomb during World War II. Following that war, Congress created the Atomic Energy Commission (1946) to take control over the scientific and industrial complex supporting the Manhattan Project and to maintain civilian government control over atomic research and development.

In October 1977, Congress passed the Department of Energy Organization Act, 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. Over its history, the Department has shifted its emphasis and focus as the energy and security needs of the Nation have changed. Since the end of the Cold War, the Department has intensified its efforts in environmental cleanup of the nuclear weapons complex, nuclear nonproliferation and nuclear weapons stewardship, reliable energy supplies and delivery, energy efficiency and conservation, and the transfer of new technologies between governmental and commercial entities. Today, the Department contributes to the future of the Nation by ensuring 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. The map and charts that follow identify our key facilities and resources supporting our mission.

President Carter signing the Department of Energy Organization Act in August 1977.

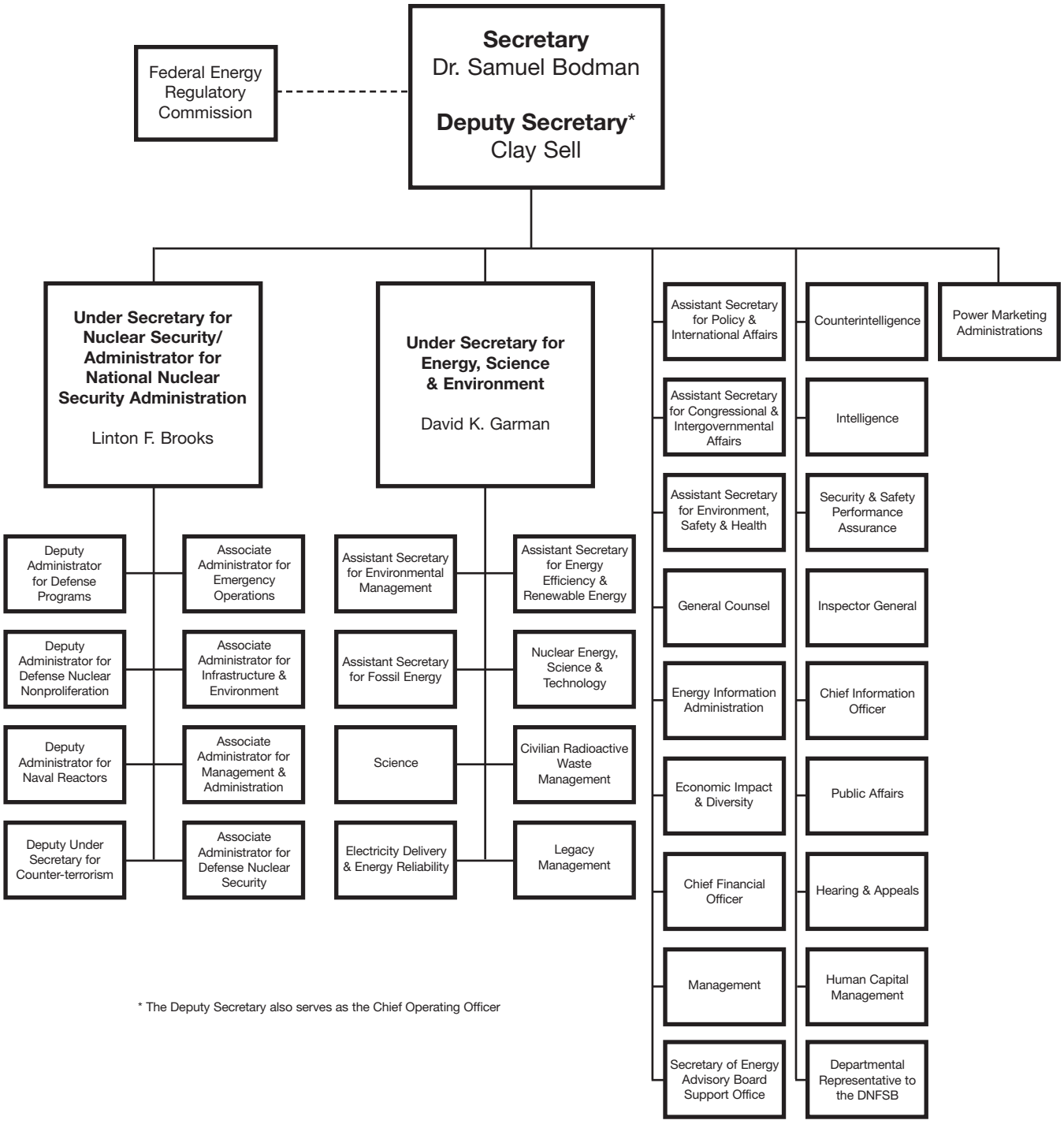
Our Mission

To advance the national economic and energy security of the United States;

To promote scientific and technological innovation in support of that mission;

To ensure the environmental cleanup of the national nuclear weapons complex.

Department of Energy



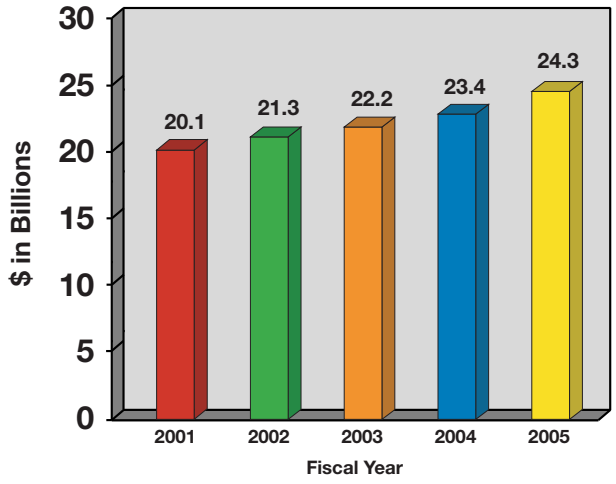
* The Deputy Secretary also serves as the Chief Operating Officer

Major DOE Laboratories and Field Facilities

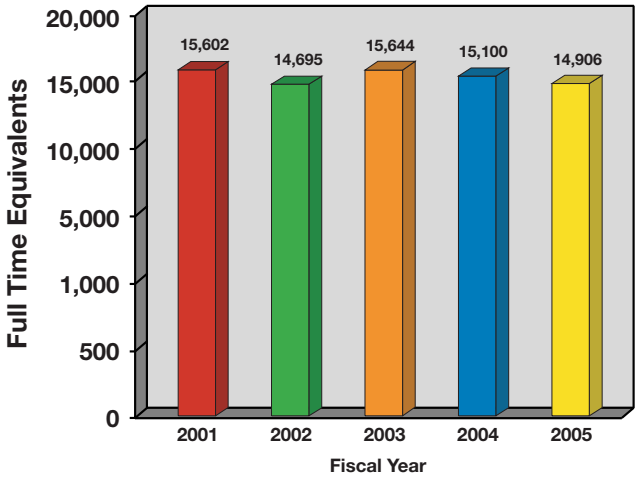
NOTE - Location within each state is not to scale.

Resources

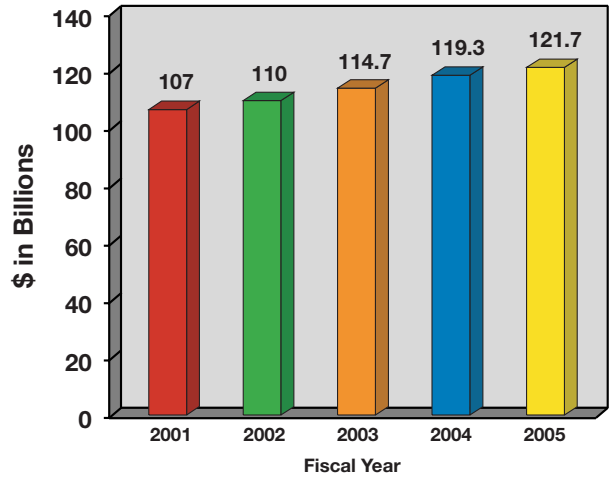
FUNDING



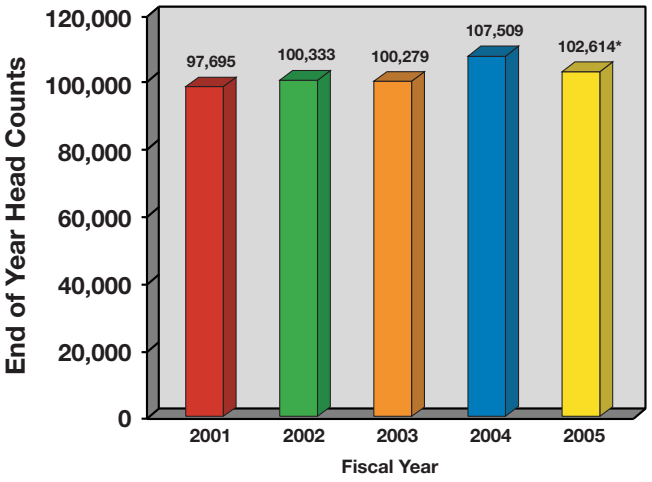
FEDERAL EMPLOYEES



ASSETS



CONTRACTOR EMPLOYEES



* Based on actual and estimated head costs

Strategic Goals

The Department pursues the following four strategic goals and seven supporting general goals to achieve our mission. The performance, financial and other related information presented in this report is structured around these goals.

Strategic and General Goals	Resources Applied (in millions)
Defense **Strategic Goal** To protect our national security by applying advanced science and nuclear technology to the Nation's defense. **General Goals** 1 – Maintain nuclear weapons stockpile 2 – Detect and prevent nuclear proliferation 3 – Support nuclear power needs of the U.S. Navy	$ Program Costs $ 8,780 Federal Employees 2,394*
Energy **Strategic Goal** To protect our national and economic security by promoting a diverse supply and delivery of reliable, affordable, and environmentally sound energy. **General Goal** 4 – Enhance energy security	$ Program Costs $ 6,617 Federal Employees 6,712*
Science **Strategic Goal** To protect our national and economic security by providing world-class scientific research capacity and advancing scientific knowledge. **General Goal** 5 – Maintain a world-class scientific research capacity	$ Program Costs $ 3,565 Federal Employees 921*
Environment **Strategic Goal** To protect the environment by providing a responsible resolution to the environmental legacy of the Cold War and by providing for the permanent disposal of high-level radioactive waste. **General Goals** 6 – Clean up contamination of sites 7 – Establish a permanent repository for high-level radioactive waste.	$ Program Costs $7,240 Federal Employees 1,939*

* These Federal Employee numbers do not include the combined 2,940 Federal Energy Regulatory Commission and Corporate Management employees (e.g. CFO, General Counsel, etc.) that support the above four strategic goals.

PROGRAM PERFORMANCE HIGHLIGHTS

Performance Overview

The Department continues to work toward the goals established in our September 2003 *Strategic Plan* (http://strategicplan.doe.gov). The following sections focus on progress made toward the Department's four strategic goals in the areas of Defense, Energy, Science and Environment. The Department's progress toward these strategic goals is described within the context of outcome-based general goals and program goals, and key, output-based annual performance targets. Programmatic benefits to the public are discussed, as are the external factors that may impact achievement of the Department's goals.

Detailed performance results are included in the Performance Results section providing the year-end assessment of each annual performance target for fiscal year (FY) 2005, performance information for the past three fiscal years (FY 2002-2004), and the status of unmet FY 2004 performance targets.

Performance Management Framework

The Performance Management Framework illustrates the hierarchical relationship of performance elements within the Department. During performance planning, Departmental goals determine the scope of supporting elements; consequently, progress against these goals is indicated by actual performance at the lower levels.

Mission – The Department of Energy's mission is to advance the national, economic and energy security of the United States; to promote scientific and technological innovation in support of that mission; and to ensure the environmental cleanup of the national nuclear weapons complex.

Strategic Goals – The Department has four strategic goals that support the achievement of this mission. A strategic goal is a statement of aim or purpose that may not be directly measurable. Strategic goals are used by the Department to guide the creation of general goals and program goals, which are focused on producing outcomes required to accomplish the Department's mission.

General Goals – The Department has seven long-term general goals that support the four strategic goals. A general goal defines more specifically what the Department plans to achieve in carrying out its mission over a period of time. General goals are expressed as outcomes, which allow for the future assessment of progress toward the goal.

Program Goals – Outcome-based program goals bridge the gap between long-term general goals and annual performance targets. The Department has 59 program goals, spread across 11 Departmental administrations and offices. Because the program goals are focused on the core missions of the administrations and offices to which they are assigned, program goals are critical mid-level indicators of Departmental performance.

Annual Performance Targets – The Department tracked 246 annual performance targets in FY 2005. These targets establish a measurable performance baseline against which actual achievement is assessed. Annual performance targets may be either outcomes or outputs.

Performance Scorecard

Each Strategic Goal section includes a Performance Scorecard that reveals both cost (program costs and budgetary expenditures) and performance information in a consolidated presentation.

Program costs are defined as full period costs computed using the accrual basis of accounting that recognizes expenses when incurred regardless of when the related budgetary expenditures are made. Budgetary expenditures represent the goods and services received during the current year for which the Department has paid or will be required to pay in the future. It is important to note that the budgetary expenditures will not equal program costs in any particular year because there are significant timing differences between accrued cost and recognition of

budgetary expenditures. For example, an asset with a useful life of ten years, purchased in the current year, would have its full cost recognized as a budgetary expenditure, while its full cost for accounting purposes would be spread over its ten-year useful life. Conversely, an unfunded liability recorded in the current year would be recognized as a program cost in the current year, yet would not be recognized as a budgetary expenditure until funding is made available to liquidate the liability.

Actual performance against annual performance targets is recorded on a quarterly basis in the Department's performance measurement tracking system. These results indicate progress toward associated program goals, and ultimately general and strategic goals. Performance goals and targets are rated as either Green, Yellow or Red. For FY 2005, the definitions used for rating annual targets and program goals are as follows:

Ratings of Program Goals and Annual Targets

100% Met	Green
≥ 80% Met; but < 100% Met	Yellow
< 80% Met; or Undetermined	Red

A more detailed depiction of the Department's performance elements is shown on the following page with number of annual targets in parenthesis.

Based on actual performance, current resources, and the national energy and economic outlook, the Department adjusts its strategies for achieving its goals. This ensures that the Department is continuously fulfilling its mission.

Departmental performance targets described in this report are aligned with the Department's Strategic Plan. Performance goals and targets included in the Department's FY 2005 Performance Budget, submitted to Congress in February 2004, may differ slightly from those described in this report. Some targets were revised based on the Continuing Resolution, actual FY 2005 Congressional appropriations and executive direction. A more detailed depiction of the Department's performance elements is shown on the following page with the number of annual targets in parenthesis.

Performance Validation and Verification

Validation and verification of the Department's performance is accomplished by certifications, periodic reviews, and audits. The Department's end-of-year reporting process includes certifications by heads of program elements that the reported results are accurate. The results are internally reviewed by the Department for quality and completeness, while key internal controls related to performance reporting are considered by the Department's independent auditors. Source data substantiating performance target results is maintained by the program offices, the National Laboratories, and the Department's contractor work force. Due to the size and diversity of the Department's portfolio, validation and verification is also supported by the following activities:

Budget Preparation Analysis: Validating and verifying program contributions to the Department's strategic and general goals is a routine part of reviewing and analyzing the annual performance budget submission. Performance targets submitted at each phase of budget development are also reviewed to ensure that they contribute effectively to the achievement of the program and Departmental goals. (http://www.mbe.doe.gov/budget/index.htm)

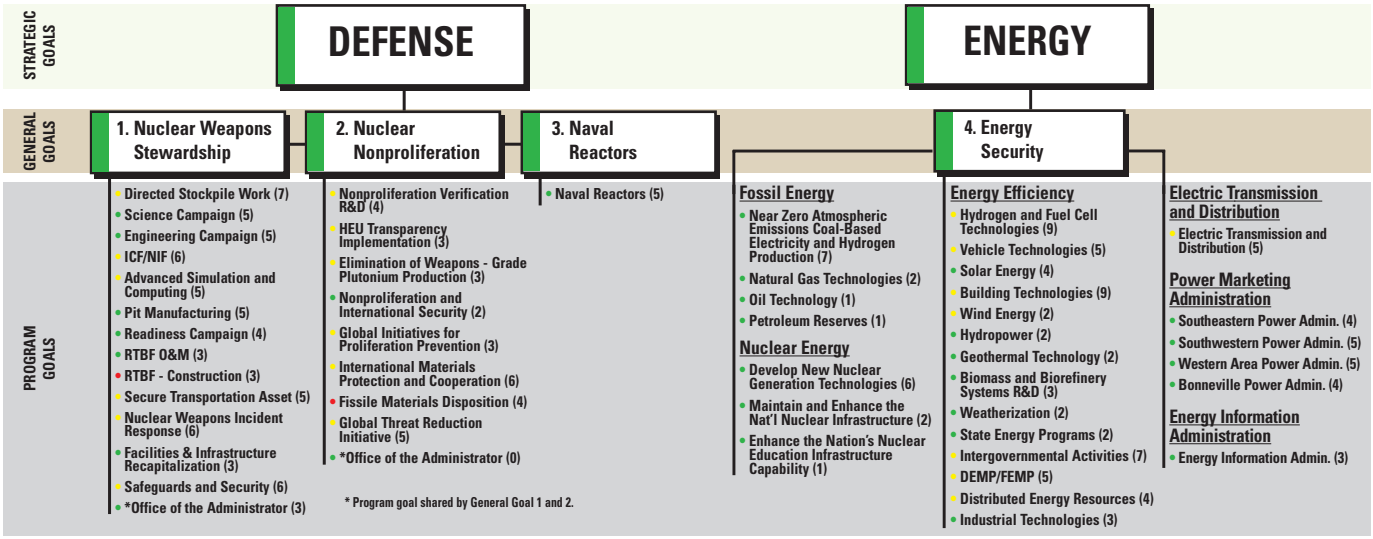
Internal Controls: Training and other forward-looking actions have helped the Department maintain a strong commitment to internal controls that serve to enhance validation and verification of program performance. For example, the Department provides quarterly training that addresses areas such as internal controls over performance measurement, the relevance and meaningfulness of performance targets, and the auditability and accuracy of reported performance results.

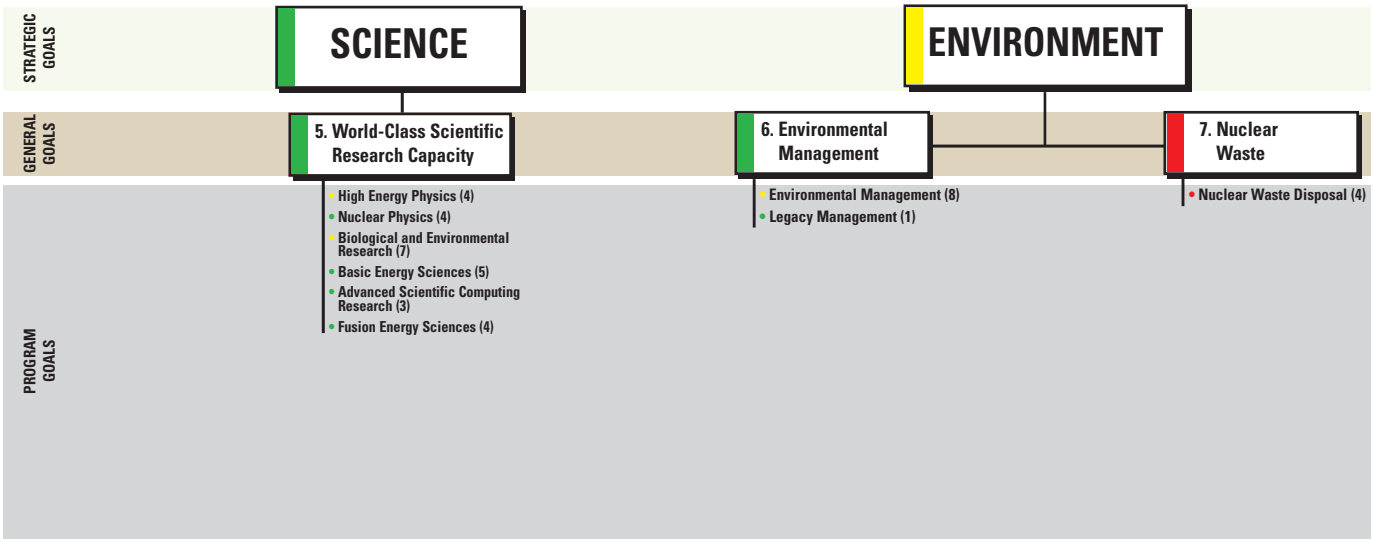
Automated Systems: Tracking and evaluating program performance is accomplished by an automated system known as Joule. The system allows for remote data entry of quarterly performance results by Departmental administrations and offices, as well as remote monitoring and oversight by Headquarters. Joule provides the end-of-year performance information that is included in the PAR.

External Independent Analysis: Program performance assessments are also conducted by the Office of Management and Budget (OMB) through the use of its Program Assessment Rating Tool (PART). PART results reveal that a majority of the Department's assessed programs periodically initiate independent evaluations to gauge program effectiveness and to support program improvements. PART assessments include long-term and annual performance measures. The Department continues to strive for better alignment between its PART measures and the program goals and annual targets included in the Department's performance budget submission to Congress. (http://www.omb.gov/part) Departmental programs and activities are also reviewed and audited on an on-going basis by the Department's Office of Inspector General (http://www.ig.doe.gov/reports.htm) and the Government Accountability Office (http://www.gao.gov/index.html).

Management Reviews: Evaluating the effectiveness of established management controls is a requirement of the FMFIA Act of 1982. Accordingly, the Department performs annual evaluations of its management controls to provide reasonable assurance that they are working effectively; that program and administrative functions (including the accuracy and reliability of the reporting of performance results) are performed in an economical and efficient manner consistent with applicable laws; and that the potential for waste, fraud, abuse or mismanagement of assets is minimized.

DOE Strategic Goals & Annual Performance Targets

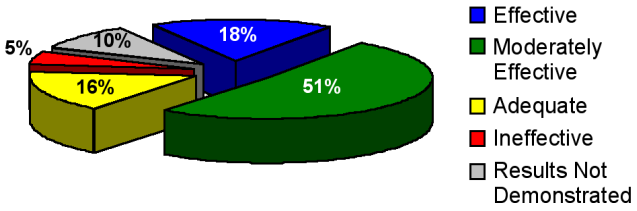




Program Assessment Rating Tool

PART was developed by OMB in 2002 as a key component for implementing the President's Management Agenda (PMA), particularly the Budget and Performance Integration initiative. PART grew out of the Administration's desire to provide federal agencies with a disciplined tool for assessing program planning, management, and performance against quantitative, outcome-oriented goals. As an instrument for periodically evaluating the efficiency and effectiveness of federal programs, PART enables managers to identify and rectify real and potential problems associated with program performance.

DOE PART Performance



Through FY 2005, the Department has completed official assessments for 39 of its 59 programs putting it on track with OMB's implementation schedule for the federal government. Of these 39, over half are rated as "Moderately Effective" or "Effective." More information on the Department's PART scores and OMB's findings are available at http://www.cfo.doe.gov/progliaison/part2005.htm.

PART provides a mechanism for the Department and OMB to develop meaningful long-term and annual measures and targets for each program. Presently, there is little commonality between PART performance measures and the performance measures included in the Department's Congressional budget submission and reported on in the PAR. As programs are assessed using the PART, the Department will strive to make its program goals and annual performance targets consistent with PART long-term goals and annual targets, although structural differences make this difficult. OMB continues to work with the Department to develop performance targets that meet criteria established by PART guidance.

The Department of Energy has vigorously incorporated the PART into its day-to-day program management decision-making processes. During FY 2005, the Department completed PART assessments for all of its programs, including 20 programs not yet scheduled for official OMB assessment. PART assessments are typically included in program reviews, alongside other performance and financial information, helping managers identify issues and make future programming decisions.

Ultimately, the PART is designed to be an iterative process, capable of tracking the evolution of program performance over time through periodic reassessments. Key to this process are the recommendations that OMB develops during the assessment process to foster program improvement. Actions taken toward implementing PART recommendations are tracked by offices and reported to OMB annually. To see the Department's assessment of PART recommendations developed as part of the FY 2005 PART cycle (conducted during calendar year 2003) please refer to the previously identified website .

The on-going implementation and review of PART recommendations, coupled with the utilization of performance information derived from assessments and periodic reassessments, signify the PART as an integral process for planning and budget decision-making, as opposed to a set of one-time program evaluations. The Department will continue to make good use of this tool to ensure mission success.

Defense

— Meeting National Security Challenges —

To protect our national security by applying advanced science and nuclear technology to the Nation's defense.

One of the primary responsibilities of the Department is to enhance national security through the application of nuclear technology. To accomplish this goal the Department oversees:

- Maintenance and certification of the U.S. nuclear weapons stockpile;
- Development of responsive infrastructure that can adapt quickly to stockpile changes while still drawing down the stockpile of weapons excess to defense needs;
- Security of the nuclear complex, and strengthening of international nuclear nonproliferation controls;
- Reduction in global danger from weapons of mass destruction; and
- Provision to the U.S. Navy of safe and effective nuclear propulsion systems.

The National Nuclear Security Administration (NNSA), a semiautonomous agency within the Department, is responsible for these activities critical to our national security.

General Goal 1: Nuclear Weapons Stewardship

Ensure that our nuclear weapons continue to serve their essential deterrence role by maintaining and enhancing the safety, security, and reliability of the U.S. nuclear weapons stockpile.

Defense Performance Scorecard ($ in millions)

General Goals and Scores	Program Costs FY 2005	Program Costs FY 2004	Program Goals and Scores		FY 2005 Budgetary Expenditures Incurred *	Performance of Annual Targets: Met (100%)	Not Met (≥ 80% but < 100%)	Not Met (< 80%)	Undetermined
1. Nuclear Weapons Stewardship	$6,779	$6,220	Directed Stockpile Work	Y	$1,717	5	1	1	0
			Science Campaign	G	$269	5	0	0	0
			Engineering Campaign	G	$273	5	0	0	0
			ICF/NIF	Y	$502	3	3	0	0
			Advanced Simulation and Computing	Y	$686	3	2	0	0
			Pit Manufacturing	G	$262	5	0	0	0
			Readiness Campaign	G	$275	4	0	0	0
			RTBF O&M	G	$203	3	0	0	0
			RTBF Construction	R	$185	0	0	3	0
			Secure Transportation Asset	Y	$206	3	2	0	0
			Nuclear Weapons Incident Response	Y	$119	5	1	0	0
			Facilities & Infrastructure Recapitaliztion	G	$331	3	0	0	0
			Safeguards and Security	Y	$702	4	1	1	0
			Office of the Administrator **	G	$372	3	0	0	0
2. Nuclear Non-Proliferation	$1,191	$1,101	Nonproliferation Verification R&D	Y	$241	3	1	0	0
			HEU Transparency Implementation	Y	$18	2	1	0	0
			Elimination of Weapons-Grade Plutonium Production	Y	$153	2	1	0	0
			Nonproliferation and International Security	G	$137	2	0	0	0
			Global Initiatives for Proliferation Prevention	Y	$50	2	1	0	0
			International Materials Protection and Cooperation	Y	$369	3	2	1	0
			Fissile Materials Disposition	R	$479	1	1	2	0
			Global Threat Reduction Initiative	Y	$6	3	1	1	0
			Office of the Administrator **	G	–	–	–	–	–
3. Naval Reactors	$810	$740	Naval Reactors	G	$933	5	0	0	0
Total Cost	$8,780	$8,061			$10,316	74	18	9	0

* Includes capital expenditures but excludes such items as depreciation, changes in unfunded liability estimates and certain other non-fund costs, and allocations of Departmental administration activities.

** Program goal and associated annual targets are shared by General Goal 1 and 2.

One of the most important responsibilities of the Secretary of Energy, in cooperation with the Secretary of Defense, is certifying to the President that the Nation's nuclear weapons stockpile is safe, secure, and reliable. To do so, the NNSA:

- Maintains a nuclear weapons stockpile surveillance and engineering capability;
- Refurbishes and extends the lives of selected nuclear systems; and
- Maintains a science and technology base, including the ability to restore the manufacturing infrastructure for the production of replacement weapons, should the need arise.

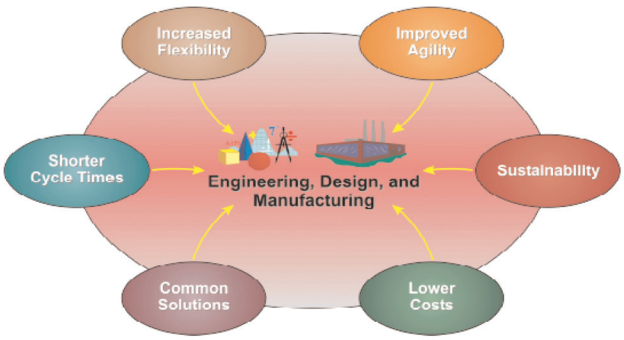
These capabilities ensure the vitality of our nuclear weapons without the need for underground nuclear testing.

How We Serve the Public

Each year the NNSA certifies the readiness of 100 percent of the strategically deployed nuclear weapons, an activity necessitated when the United States stopped development and production of new nuclear warheads following the end of the Cold War and established a moratorium on nuclear testing. To this end, the Department adopted a science-based Stockpile Stewardship Program (SSP) that emphasizes development and application of greatly improved technical capabilities to assess the safety, security, and reliability of existing nuclear warheads without the use of nuclear testing.

Securing and Refurbishing the Weapons Complex.

- Following the events of the September 11, 2001 terrorist attacks, the Department issued a revised Design Basis Threat (DBT) in May 2003 that identified a postulated threat in terms of the number of possible adversaries and weapons capabilities at DOE sites. The NNSA continued to implement the stringent Site Implementation Plans in the Department's DBT during FY 2005.
- To address the underfunding of infrastructure following the end of the Cold War, the Facilities and Infrastructure Recapitalization Program (FIRP) was created to reduce the backlog of deferred maintenance at stockpile-related facilities to an acceptable level consistent with industry standards. The Readiness in Technical Base and Facilities (RTBF) program provides the funding needed for the ongoing operations and maintenance needs of the nuclear weapons complex.
- Several major construction projects address the refurbishment of the complex, including the Chemistry and Metallurgy Research Facility Replacement (CMRR) at Los Alamos National Laboratory. This project will relocate and consolidate mission critical research and development capabilities, while providing storage for special nuclear material. The Modern Pit Facility Project (MPF), the disposition of which is still being determined, will have the capability to produce meaningful quantities of stockpile-certified plutonium pits that serve as the "triggers" of modern nuclear weapons. Both projects support the long-term requirements of the nuclear weapons deterrent.



Responsive Infrastructure

Reduction in the Number of Existing Weapons.

- On May 24, 2002, the President signed the Strategic Offensive Reduction Treaty (commonly referred to as the Moscow Treaty) with Russian President Vladimir Putin. The Moscow Treaty called for a two-thirds reduction over the next decade in the number of operationally deployed strategic nuclear warheads. To implement the treaty, the NNSA, in conjunction with the Department of Defense, will reduce the number of warheads from 6,000 to between 1,700 and 2,000 by 2012. Russia has agreed to similar reductions.
- In a report to Congress dated June 3, 2004, the NNSA Administrator described the plan for the overall reduction of the U.S. nuclear weapons stockpile. The plan will lead to a significant decline – by nearly half – in the size of the total U.S. nuclear weapons stockpile (deployed weapons, spares, etc.) by 2012. Such a level has not been realized in several decades.

Signing of the Strategic Offensive Reduction Treaty by Russian President Vladimir Putin and President George W. Bush

- The reduction in the number of warheads allows for certain programmatic realignments. Since fewer warheads will need to be refurbished and maintained, more resources can be directed at developing a smaller, more responsive infrastructure in the U.S. to maintain deterrence and respond to evolving future threats. In addition, increased resources for U.S. assistance to help Russia with its significant warhead dismantlement requirements of the Moscow Treaty can also be anticipated.
- Two Savannah River Site facilities, the Pit Disassembly and Conversion Facility (PDCF) and the Tritium Extraction Facility (TEF) will aid in the reduction of the existing stockpile. Disassembly of obsolete pits and extraction of tritium from existing warheads are fundamental steps in dismantling a nuclear weapon. As the stockpile shrinks so does the need for tritium renewal, another function of the TEF. The capacity to decommission additional retired warheads is thereby enhanced.

Reliable Replacement Warhead.

- The Reliable Replacement Warhead (RRW) was a concept initiated by Congress in FY 2005 to provide greater performance margins and state-of-the-art surety features in a new weapons design. RRWs would trade off prior features such as high yield and low weight for a variety of attributes, including elimination of some hazardous materials, greater ease of certification without nuclear testing, increased long-term confidence in the stockpile, and lower costs. Also, the RRW facilitates the goal of a more responsive infrastructure.
- Congress' Sustainable Stockpile Initiative (SSI) is an integrated plan to produce a RRW certifiable design while implementing an infrastructure reconfiguration proposal that maximizes special nuclear materials consolidation. The Secretary of Energy's Advisory Board (SEAB) Draft Final Report, *Recommendations for the Nuclear Weapons Complex for the Future*, July 13, 2005, provided initial suggestions for a reconfigured weapons complex ranging from a reduction to only three of the existing sites, to a single Consolidated Nuclear Production Center.

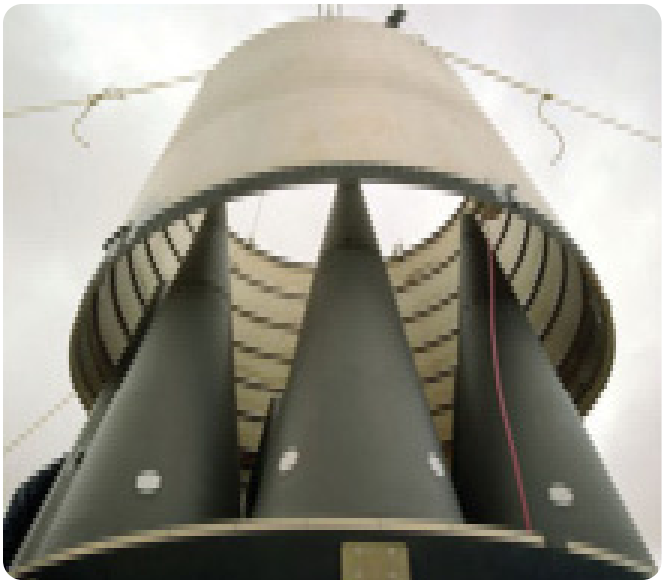
➔ Performance Against Key Targets

The NNSA ensures that the nuclear warheads and bombs in the U.S. nuclear stockpile are safe, secure, and reliable by:

- Developing solutions to extend weapon life and correcting potential technical issues;
- Conducting scheduled warhead/bomb maintenance;
- Dismantling warheads/bombs retired from the stockpile;
- Conducting evaluations to certify warhead/bomb reliability and to detect/predict potential weapon fixes, mainly from aging;
- Producing and refurbishing warheads/ bombs to install the life extension solutions and other fixes; and
- Researching advanced concepts to serve their essential deterrence role by maintaining and enhancing the safety, security, and reliability of the U.S. nuclear weapons stockpile.

During FY 2005, the NNSA:

- Completed the surety and assessment reports to support certification on the nuclear stockpile. (NA GG 1.27.01) This assessment/certification activity, conducted jointly with the Department of Defense (DoD), is critically important to U.S. national security in the absence of underground nuclear weapon testing, which has been banned by U.S. adherence to the 1992 moratorium.
- Completed 27 percent of the life extension programs for the B61-7/11, W76-1, and W80-3 weapons for the U.S. Navy and Air Force, though technical difficulties have resulted in some minor delays. (NA GG 1.27.03-05) Extending the life of existing weapons has been a cost-effective way to provide nuclear security.
- Successfully addressed technical delays associated with the first 2-axis hydrodynamics test at the Dual-Axis Radiographic Hydrotest (DARHT) facility, scheduled for 2008. (NA GG 1.28.02) DARHT is designed to provide x-ray images of weapons implosion processes, supporting weapons certification and assessment.
- Completed 81 percent of the construction of the National Ignition Facility (NIF), as targeted. (NA GG 1.30.3). NIF is designed to create and measure extreme temperature and pressure conditions of a simulated nuclear explosion. Although still under construction, four of the NIF's 192 laser beams are already operating and being used to conduct experiments in thermonuclear fusion ignition and high-energy-density physics.
- Nearly achieved a computing production platform of 100 trillion operations per second (NA GG 1.31.03). This capability, part of the Advanced Simulation Computing Campaign will ultimately help conduct nuclear stockpile certification for all weapons systems by using highly complex, three dimensional simulations.
- Completed 87 percent of the Tritium Extraction Facility (TEF) within the cost estimate, as targeted. (NA GG 1.33.04) The TEF is designed to extract and refresh tritium in a nuclear weapon. The program also worked to recover from safety and security stand-downs delaying construction of the Modern Pit Facility (MPF). (NA GG 1.32.02) The MPF will restore the capability to produce plutonium pits. When completed, these two construction projects will restore nuclear weapon production capabilities.



W87 PEACEKEEPER warheads.

- Reduced deferred maintenance within the nuclear weapons complex by more than $154.8 million as part of the Facilities and Infrastructure Recapitalization program, meeting the annual target. (NA GG 1.38.01). The 2009 date for elimination of $1.2 billion of the deferred maintenance backlog has slipped due to constrained outyear funding.
- Implemented maritime radiation search programs at all eight Radiological Assistance Program (RAP) Regions, as part of the Nuclear Weapons Incident Response (NWIR) program. (NA GG 1.35.01) NWIR responds to and mitigates nuclear and radiological incidents worldwide with capabilities that include technical personnel, equipment for monitoring and predicting environmental impacts of radiation, and medical and health support.
- Completed 106 secure convoys of special nuclear material to meet DOE, DoD, and other customer requirements, using advanced equipment and highly trained personnel. (NA GG 1.36.01) This was up from 91 a year earlier, showing steady year-to-year growth.

➔ External Factors Related to General Goal 1

The following external factors could affect the Department's ability to achieve this goal:

- **Technology:** Technological development is inherently unpredictable. The discovery of an insurmountable scientific or engineering obstacle in a credible science-based stockpile stewardship program could force the resumption of underground nuclear testing.
- **Nuclear Threats:** Changes in the nuclear threats posed to the United States could require changes to our nuclear weapons stewardship programs.

General Goal 2: Nuclear Nonproliferation

Provide technical leadership to limit or prevent the spread of materials, technology, and expertise relating to weapons of mass destruction; advance the technologies to detect the proliferation of weapons of mass destruction worldwide; and eliminate or secure inventories of surplus materials and infrastructure usable for nuclear weapons.

The NNSA reduces the threat posed by the proliferation of fissile material by helping to secure foreign stockpiles of weapons-grade material, especially in Russia. In addition, the NNSA oversees the dismantlement, destruction, and ultimate disposition of weapons including the down-blending of highly-enriched uranium (HEU) or the burning of plutonium as mixed oxide fuel (MOX) in nuclear energy plants. The NNSA further reduces risk by controlling exports of nuclear-related technologies, monitoring borders for the movement of fissile materials, and facilitating the employment of foreign scientists and engineers employed in nuclear weapons facilities located in Russia and elsewhere in other more peaceful pursuits.

Highly enriched Uranium (HEU) is down-blended with other forms of uranium to produce Low Enriched Uranium (LEU), suitable for commercial, civilian purposes.

➔ How We Serve the Public

- In 2004, the Secretary of Energy announced the Global Threat Reduction Initiative, a comprehensive plan to secure and remove from vulnerable sites around the world high-risk nuclear and radiological materials that pose a threat to the United States and the international community, significantly contributing to the NNSA's ongoing work in nuclear nonproliferation. As part of this initiative, the Department developed a threat-based, prioritized approach to systematically address facilities that possess high-risk fissile and other nuclear materials.

- A bilateral agreement was signed in 2004 regarding the repatriation of Russian-origin HEU research reactor fuel to Russia. More than 20 research reactors in 17 countries have been identified as having Russian/Soviet-supplied fuel. NNSA is reducing the world's stocks of dangerous materials, such as HEU, through a variety of programs to convert this material to low enriched uranium (LEU), and plutonium, through fissile materials disposition programs in the United States and Russia. The NNSA is also working with its Russian counterparts to eliminate Russian plutonium production. For U.S-origin spent fuel, NNSA is accepting fuel from foreign repositories for final disposition.
- At the February 2005 Bratislava Summit, the Presidents of the United States and Russia committed to expanding and deepening cooperation on nuclear security. The United States and Russia pledged to continue cooperation on security upgrades of Russian nuclear facilities and develop a plan of work through and beyond 2008. They also agreed to focus increased attention on "security culture," to include fostering disciplined, well-trained and responsible nuclear material custodians.
- Other non-proliferation activities include NNSA's successful "Megaports" initiative which installs sophisticated radiation detection equipment at many of the world's international ports. This initiative, in conjunction with the Second Line of Defense (SLD) program, provides detection systems at vulnerable seaports, airports and other land border crossings worldwide in order to minimize the risk of nuclear proliferation and terrorism through detection and deterrence of illicit trafficking in plutonium, HEU and other radioactive materials at international borders.

➔ Performance Against Key Targets

The Department draws from its world-class scientific and technical expertise, and leverages existing nonproliferation programs to identify and prioritize vulnerable materials, remove or secure such materials, convert research and test reactors from HEU to LEU, and take any other steps necessary to meet changing threats. Much of NNSA's nonproliferation work is conducted abroad. Uncertainties in this operating environment impact the completion of NNSA's annual goals, most notably the construction of fossil fuel plants to eliminate weapons grade plutonium production in Russia, the construction of a MOX fuel facility in Russia, and installation of Second Line of Defense sites in Russia and other regions of concern.

During FY 2005, the NNSA:

- Shipped for launch preparation crucial technology developed by NNSA for the Defense Support Program (DSP) satellite. The purpose of the equipment is to monitor the Limited Test Ban Treaty of 1963 and to deter nations with nuclear weapons from conducting nuclear tests. NNSA delivered seven of eight planned advanced technologies and operational systems (e.g. satellite payloads and seismic station calibration data sets) to improve the accuracy and sensitivity of nuclear weapons test monitoring. (NA GG 2.40.02)
- Completed about 26 percent of the refurbishment of a fossil fuel plant in Seversk, Russia. (NN GG 2.42.01) When complete, this plant – along with the construction of another plant in Zheleznogorsk, Russia – will provide an alternative fossil fuel power source permitting the shutdown of three nuclear reactors, which currently produce up to 1.2 metric tons of weapons-grade plutonium annually.
- Failed to meet the target to complete 100 percent of the detailed design, and to start site preparation, construction, and long-lead procurements for the Russian MOX facility. MOX facilities support nuclear nonproliferation by reducing the supply of fissile material. After the liability protocol is signed and the Russian Government completes its technical review, the United States, France and Russia will begin discussions on an agreement to transfer liability to Russia. (NA GG 2.47.05)
- Installed 87 SLD sites (including 4 Megaports). (NA GG 2.46.06) The NNSA provides assistance to foreign governments to identify and intercept illegal shipments of weapons materials by working in Russia and other regions of concern. Recent agreements with Slovenia and Ukraine will now provide the legal basis for allowing work to proceed in those countries.
- Completed approximately 87 percent of the detailed design of the PDCF; the target was 100 percent. (NA GG 2.47.01) Contractor estimates regarding the time required for detailed design were too optimistic. This facility will provide the U.S. with the capability to disassemble surplus nuclear weapons pits and convert the resulting plutonium metal to plutonium oxide, reducing the supply of fissile material.
- Engaged 7,775 Russian scientists and engineers formerly employed in nuclear weapons facilities located in Russia, and created or expanded 42 commercial enterprises. (NA GG 2.45.01-02) Employing skilled nuclear-trained professionals in endeavors such as medical technology helps prevent the spread of sensitive knowledge to rogue states.

➔ External Factors Related to General Goal 2

The following external factors could affect the Department's ability to achieve this goal:

- **Close Cooperation with Russia:** Unprecedented levels of cooperation between the United States and Russia have made possible great strides in securing and eliminating inventories of surplus materials. A close relationship is necessary for future progress.

- **International Atomic Energy Agency (IAEA):** The IAEA is essential to the success of our efforts to control nuclear proliferation. It is uncertain whether the IAEA will receive the necessary funding and show the necessary leadership to member countries. The NNSA is monitoring this situation closely.
- **Technology:** Technological development is uncertain and unpredictable. Our efforts to develop nuclear weapons/material detection technology may be more or less successful than predicted, which would have a corresponding positive or negative impact on our efforts.

General Goal 3: Naval Reactors

Provide the Navy with safe, militarily effective nuclear propulsion plants and ensure their continued safe and reliable operation.

Naval nuclear propulsion plants currently power about 40 percent of the Navy's principal combatants. The NNSA will continue to provide the Navy and the Department of Defense reliable and militarily effective nuclear power through the Naval Reactors program. New technologies, methods, and materials to support reactor plant design for future generations of reactors for submarines, aircraft carriers, and other combat ships are also developed under this program.

The nuclear-powered aircraft carrier, USS RONALD REAGAN (CVN 76), being welcomed for the first time in her new homeport, San Diego, California.

How We Serve the Public

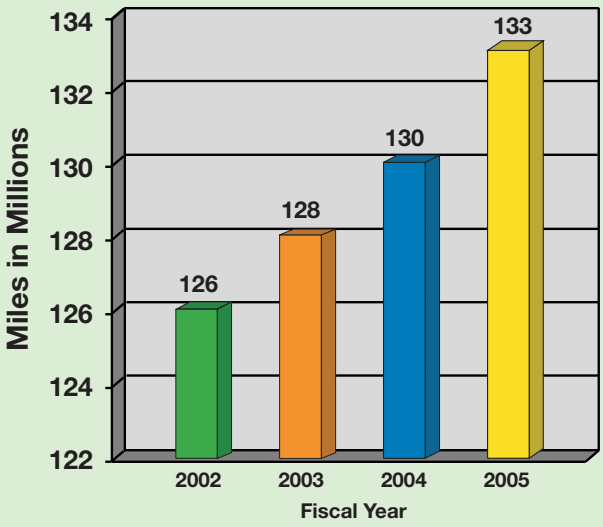
NNSA's Naval Reactors program serves the public by providing the Navy with safe, militarily effective nuclear propulsion plants and ensuring their continued safe and reliable operation. This program, which supports U.S. nuclear powered submarines and carriers around the world, remains a vital part of the national security mission and the Global War on Terrorism.

Performance Against Key Targets

During FY 2005, the NNSA:

- Achieved more than 2 million miles of safe steaming in nuclear-powered ships and the design of new reactors. (NR GG 3.49.1) Since its inception, the Naval Reactors program has achieved over 133 million miles of safe nuclear propulsion, as shown in the chart below.

Safe Steaming Miles



Cumulative Safe Steaming Miles for Nuclear Powered Ships

- Completed 70 percent of the next generation aircraft carrier reactor design (referred to as the CVN 21). (NA GG 3.49.04) The CVN 21 nuclear propulsion plant will have increased core energy, nearly three times the electrical plant generating capacity, and will require half of the Reactor Department sailors, compared to today's operational aircraft carriers.

External Factors Related to General Goal 3

Currently, no external factors appear to impact the ability to achieve this General Goal. However, given the unique nature of the Naval Reactor's responsibilities, commitments to both DOE and the Navy must be considered at all times. Therefore, any external factor seriously affecting either organization's policies may have an impact on the Program's ability to achieve this goal.

Energy

— Investing in America's Energy Future —

To protect our national and economic security by promoting a diverse supply and delivery of reliable, affordable, and environmentally sound energy.

The demand for energy in the U.S. is rising much faster than the projected increase in domestic energy production. The shortfall between domestic energy demand and domestic supply is projected to increase nearly 50 percent by 2020. That projected shortfall can be made up in only three ways – import more energy, improve energy conservation and efficiency, and/or increase domestic supply.

The Administration considered these options in its development of the National Energy Policy (NEP). It concluded that increased dependence on oil imports from volatile regions of the world would jeopardize our national and economic security. As imports rise, so does our vulnerability to price shocks, shortages, and disruptions. For that reason, the Administration resolved to take steps to improve energy conservation and efficiency, increase domestic energy production, and increase the reliability and security of imports in order to avoid increased dependence on imports from volatile regions of the world.

Largely consistent with the priorities set forth in the NEP, the President signed the Energy Policy Act into law in August 2005. This law is the first comprehensive energy plan in more than a decade. It encourages energy efficiency and conservation, promotes alternative and renewable energy sources, reduces our dependence on foreign sources of energy, increases domestic production, modernizes the electricity grid, and encourages the expansion of nuclear energy.

Energy Performance Scorecard ($ in millions)

General Goal and Score	Program Costs FY 2005	Program Costs FY 2004	Program Goals and Scores		FY 2005 Budgetary Expenditures Incurred *	Performance of Annual Targets: Met (100%)	Not Met (≥ 80% but < 100%)	Not Met (< 80%)	Undetermined
4. Energy Security	$6,617	$6,378	Hydrogen & Fuel Cell Technologies	Y	$107	7	2	0	0
			Vehicle Technologies	Y	$179	4	1	0	0
			Solar Energy	G	$238	4	0	0	0
			Building Technologies	Y	$72	7	1	1	0
			Wind Energy	Y	$43	1	1	0	0
			Hydropower	G	$6	2	0	0	0
			Geothermal Technology	G	$34	2	0	0	0
			Biomass & Biorefinery Systems R&D	G	$107	3	0	0	0
			Weatherization	G	$283	2	0	0	0
			State Energy Programs	G	$112	2	0	0	0
			Intergovernmental Activities	Y	$27	5	2	0	0
			DEMP/FEMP	Y	$21	4	0	1	0
			Distributed Energy Resources	Y	$64	3	0	1	0
			Industrial Technologies	G	$102	3	0	0	0
			Near Zero Atmospheric Emissions Coal-Based Electricity & Hydrogen Production	G	$374	7	0	0	0
			Natural Gas Technologies	G	$57	2	0	0	0
			Oil Technology	G	$58	1	0	0	0
			Petroleum Reserves	G	$251	1	0	0	0
			Develop New Nuclear Generation Technologies	G	$156	6	0	0	0
			Maintain and Enhance National Nuclear Infrastructure	G	$208	2	0	0	0
			Enhance the Nation's Nuclear Education Infrastructure Capability	G	$25	1	0	0	0
			Electric Transmission & Distribution	Y	$114	3	0	2	0
			Southeastern Power Administration	G	$31	4	0	0	0
			Southwestern Power Administration	G	$37	5	0	0	0
			Western Area Power Administration	G	$623	5	0	0	0
			Bonneville Power Administration	G	$4,974	4	0	0	0
			Energy Information Administration	G	$87	3	0	0	0
Total Cost	$6,617	$6,378			$8,390	93	7	5	0

* Includes capital expenditures but excludes such items as depreciation, changes in unfunded liability estimates and certain other non-fund costs, and allocations of Departmental administration activities.

Science and technology are the Department's principal tools for achieving the goals of the NEP and the Energy Policy Act. The Department invests in high-risk, high-value energy research and development (R&D) that the private sector alone would not or could not develop in a market-driven economy.

General Goal 4: Energy Security

Improve energy security by developing technologies that foster a diverse supply of reliable, affordable, and environmentally sound energy by providing for reliable delivery of energy, guarding against energy emergencies, exploring advanced technologies that make a fundamental improvement in our mix of energy options, and improving energy efficiency.

The programs supporting this General Goal follow through with the President's promise for a strong, secure economy, and an energy-independent future. Investments are being made that will benefit the Nation today and in the future, including expanding energy supplies, assessing and addressing energy infrastructure vulnerabilities, and developing energy assurance activities consistent with the NEP and Energy Policy Act.

The Department's technologies draw on all of the Nation's available resources: renewable energy sources (including hydropower, wind, solar, bioenergy, and geothermal), nuclear energy, oil, natural gas, coal, and reductions in demand through conservation and energy efficiency technologies and processes. The Administration believes it is not the role of the Federal Government to choose the energy sources for the country. Instead, its role is to help the private sector develop technologies capable of providing a diverse supply of energy, and to allow the market to decide how much of each energy source is actually used. Diversity of energy sources can help provide stability and guard against price spikes, helping to ensure the Nation's energy security.

Energy Efficiency and Renewable Energy

The Office of Energy Efficiency and Renewable Energy's (EE) mission is to strengthen America's energy security, environmental quality, and economic vitality through public-private partnerships with the private sector, state and local governments, DOE national laboratories, and universities. These partnerships seek to promote energy efficiency and productivity, bring clean, reliable and affordable energy technologies to the marketplace, and make a difference in the everyday lives of Americans by enhancing their energy choices and quality of life.

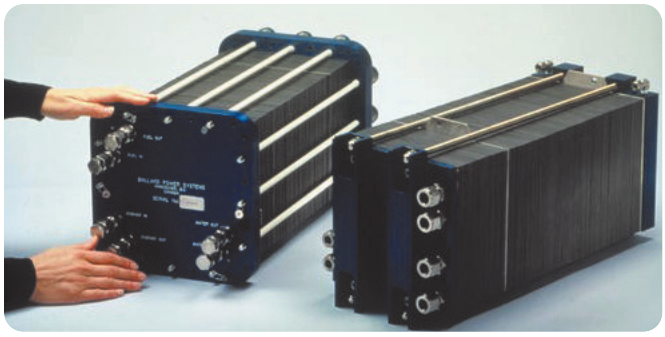
How We Serve the Public

Renewable energy technologies hold tremendous promise in moving the Nation toward sustained, low emission electricity and hydrogen supply. Government-sponsored R&D efforts over recent decades have been very successful in

President George W. Bush at a Washington D.C. Shell Station, the first integrated gasoline/hydrogen station in North America. The Department's Hydrogen "Learning Demonstration," brings together automobile makers and energy companies to test fuel cell vehicles and hydrogen fueling systems in real-world conditions.

helped to lower costs and improve the reliability of renewable energy technologies, and more can be achieved with robust R&D in the future. EE's programs address both the supply and demand sides of the energy security equation by ensuring energy security in three general areas:

- **Replacement of Conventional Fuels –** The Vehicle Technology and Hydrogen programs work together through the FreedomCAR Partnership and Hydrogen Fuel Initiative to develop technologies that, over the next several decades, have the potential to virtually eliminate the use of petroleum for transportation. During FY 2005, two hydrogen refueling stations were opened: one in Washington, DC and the other in Chino, California. These demonstration projects address major technical and economic hurdles in renewable and distributed hydrogen production that must be overcome to make these technologies a reality.
- **Clean, Affordable Renewable Energy Sources –** The Solar Energy Technology R&D program works to provide clean, reliable, affordable solar electricity for the Nation through its research programs in photovoltaic (PV) energy systems. PV technology makes use of the abundant energy in the sun to convert sunlight directly into electricity for residential and commercial buildings, including power for lights and air conditioning. EE has continued to demonstrate greater increases in conversion efficiency, and is working to drive down production costs for PV modules.
- **Energy Efficiency and Conservation –** The Weatherization Assistance Program delivers weatherization services to low-income households in every county in the nation and on Native American Tribal lands. In addition, the Department is a proud champion of the Energy Star© program which is helping businesses and individuals protect the environment through superior energy efficiency. Last year alone we calculate that Americans, by purchasing Energy Star



A fuel cell uses the chemical energy of hydrogen to produce electricity and water, cleanly and efficiently.

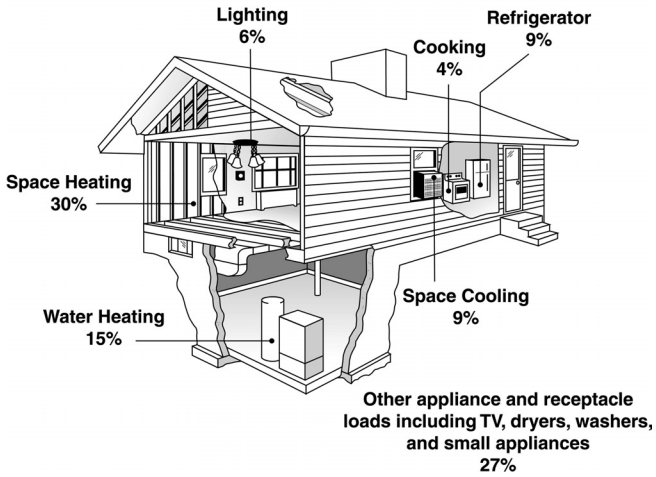
products as opposed to less efficient alternatives, saved enough energy to power 20 million cars – all while saving $10 billion. The Energy Star label raises awareness and encourages manufacturers to produce, and consumers to buy, energy efficient products.

Performance Against Key Targets

During FY 2005, EE:

- Achieved a cost-competitive energy level of $125 per kilowatt for a hydrogen-fueled, 50 kilowatt fuel cell power system, meeting the annual target. (EE GG 4.01.11) The Hydrogen and Fuel Cell Technology program is conducting R&D to develop hydrogen production, storage, and delivery technologies to the point that they are cost and performance competitive and are being used by the Nation's transportation, energy, and power industries.
- Reduced to $862.50 the cost of a high power, light vehicle lithium ion battery, exceeding the annual target of $900. (EE GG 4.02.14) The Vehicle Technologies program goal is to develop cost and performance competitive technologies that enable cars and trucks to become highly efficient through improved hybrid power technologies, cleaner domestic fuels, and lightweight materials. Manufacturers and consumers will use these technologies to help the Nation reduce both energy use and greenhouse gas emissions, thus improving energy security by dramatically reducing dependence on oil.
- Verified, through laboratory testing, the conversion efficiencies of 13.7% for commercial production of crystalline silicon modules, meeting the annual target. (EE GG 4.03.02) Improving conversion efficiencies, which represents the percentage of light energy from the sun that is actually converted into electricity, while reducing development, production and installation costs to competitive levels, is critical for improving the performance of solar energy systems. This will accelerate large-scale usage across the Nation and make a significant contribution to a clean, reliable and flexible U.S. energy supply.
- Completed testing of the first full scale Low Wind Speed Technology prototype turbine and completed prototype testing of a 1.8 kilowatt small wind turbine. Related targets for technology acceptance were not met; however, 21 states have attained 20 MW and 15 States have reached 100 MW of wind generation with 1 additional state expected in each category by the end of CY 2005. Broader deployment was delayed as a result of business decision uncertainty around continued federal tax policy and implementation of target state policies that create incentives for wind development. States with mature markets experienced near record annual construction of wind facilities. (EE GG 04.05.01) The Wind Energy Technologies program leads the Nation's R&D efforts to improve wind energy technologies that enhance domestic economic benefits. By 2012, the program goal is to complete technology R&D and collaborative efforts, and to provide technical support and outreach needed to overcome barriers – energy cost, energy market rules and infrastructure, and energy sector acceptance – to enable wind energy to compete with conventional fuels.

Energy Use in a Low-Income Household



Since 1999, DOE has been encouraging the network of weatherization providers to adopt the whole-house approach whereby they attack residential energy efficiency as a system rather than as a collection of unrelated pieces of equipment.

- Weatherized over 92,500 homes with DOE funds, and weatherized an additional 100,000 homes using leveraged funds (combination of DOE, state, and local funds), meeting the annual target. (EE GG 4.09.10) The Weatherization Assistance program improves the energy efficiency of the homes of low-income families through a network of more than 970 local Weatherization agencies throughout the country. During the last 28 years, the Department's Weatherization Assistance Program has provided services to more than 5.4 million low-income families. Weatherization of a home saves the homeowner an average of $224 per year in utility costs.

Nuclear Energy, Science and Technology

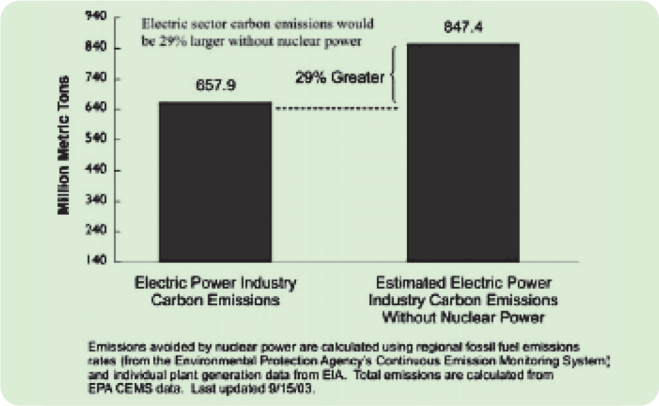
The Office of Nuclear Energy, Science and Technology (NE) leads the development of new nuclear energy generation technologies to meet energy and climate goals and advanced, proliferation-resistant nuclear fuel technologies that maximize energy from nuclear fuel, while maintaining and enhancing the national nuclear infrastructure.

How We Serve the Public

NE focuses on both the present and future energy needs of the country through three general activities: (1) development of new nuclear technologies; (2) maintenance of NE's nuclear infrastructure; and (3) enhancing the nation's nuclear education infrastructure.

- Benefits realized from NE's R&D activities include the promotion of nuclear power generation in the United States, advances in waste treatment processes that yield reductions in the volume and long-term toxicity of high level waste from spent nuclear fuel, technologies developed to reduce the long-term proliferation threat posed by civilian inventories of plutonium in spent fuel, and provision of proliferation-resistant technologies to recover the energy content in spent nuclear fuel.
- Additional benefits include supporting university research and training reactors, assisting outstanding nuclear science and engineering students, bringing nuclear technology education to small, minority-serving institutions, and supporting university nuclear engineering research.

Nuclear Energy Environmental Benefit

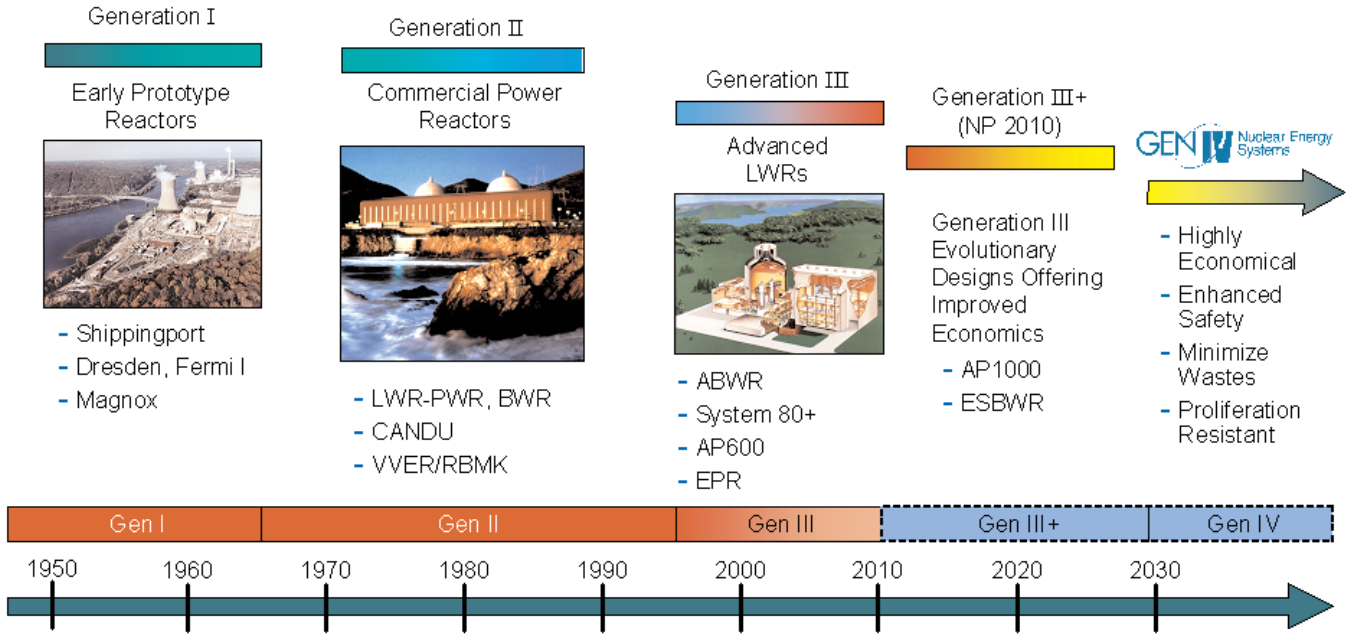


Performance Against Key Targets

During FY 2005, NE:

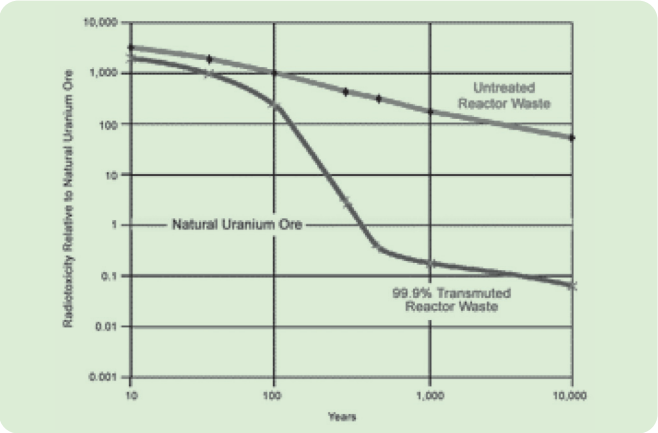
- Issued implementation plans for two Construction and Operating Licensing demonstration projects. (NE GG 4.14.02) These projects will focus on resolving by 2010 the technical, institutional, and regulatory barriers to the deployment of new nuclear power plants. This accomplishment will provide the nuclear power industry the information it needs in calculating the financial risks related to building the next nuclear power plant in the U.S. Additional nuclear power plants in the U.S. means no new additional greenhouse gases will be introduced into the atmosphere.

Nuclear Energy Technology Roadmap



Generations of nuclear energy systems - The first generation was advanced in the 1950s and 60s in the early prototype reactors. The second generation began in the 1970s in the large commercial power plants that are still operating today.

Advanced Fuel Cycle Initiative



With transmutation, used fuel reaches the toxicity of the source uranium ore within a few centuries.

- Completed, through laboratory-scale testing, separation of actinide elements (plutonium, neptunium, americium, and curium) from light water reactor spent fuel. (NE GG 4.14.6) By developing these extraction methods, both radioactive waste can be made less toxic and spent nuclear fuel can be recycled for energy. Currently, the spent nuclear fuel at nuclear plant sites contains the energy potential energy equivalent of 6 billion barrels of oil or about two full years of U.S. oil imports.

- Issued final design documents for the fuel capsule, and other critical components of the Advanced Gas Reactor fuel tests. (NE GG 4.14.3) This next generation reactor, also known as the Very High Temperature Reactor (VHTR), is designed to operate more efficiently than existing reactors and will have the potential to support production of large quantities of hydrogen. NE is leading multi-national research and development projects to develop advanced nuclear reactors through its Generation IV Nuclear Energy Systems Initiative. NE will continue to develop advanced reactor technologies to optimize the industry's future design options.

- Issued funding to the six existing Innovations in Nuclear Infrastructure and Education consortia; provided fuel to the University Research Reactors; issued 25 DOE/Industry matching grants; funded 21 equipment and instrumentation upgrades; funded 50 Nuclear Engineering Education Research grants; and provided 29 fellowships and 81 scholarships. (NE GG 04.63.01) These accomplishments work to reverse declining enrollments in nuclear science and engineering by helping to maintain domestic capabilities to conduct research and the critical infrastructure necessary to attract, educate, and train the next generation of scientists and engineers with expertise in nuclear energy technologies. The trend in declining enrollment has been reversed and is approaching the program goal of 1,500 students (considered the current optimal enrollment level to meet the need for nuclear scientists and engineers). Additional nuclear scientists and engineers will be needed as retirements at national laboratories, government agencies, universities and industry increase in coming years.

Fossil Energy

The Office of Fossil Energy's (FE) activities are designed to ensure that the economic benefits from moderately priced fossil fuels are compatible with the public's expectation for exceptional environmental quality and reduced energy security risks.

How We Serve the Public

- Fossil fuels are an important part of the U.S. and global energy mix. The Nation relies on fossil fuels for about 80 percent of the energy it consumes and EIA forecasts that this percentage will only decrease slightly in the future. The current U.S. fossil research portfolio is structured to provide a fully integrated program with mid- and long-term market entry offerings. The principal goal is to develop technologies for near zero atmospheric emissions, coal-based electricity generation plants that have the ability to co-produce low-cost hydrogen by 2015. The mid-term manifestation of that goal is expected to be the FutureGen project, a $1 billion cost-shared venture with industry that will combine electricity and hydrogen production. This project will use a combination of efficiency improvements and carbon capture and storage to eliminate virtually all emissions of air pollutants, including sulfur dioxide, nitrogen oxides, mercury and CO2. This prototype power plant will serve as the test bed for proving the most advanced technologies, such as hydrogen fuel cells.

- FE also advances a technology research and development program to resolve the environmental, supply, and reliability constraints of producing oil and natural gas resources. FE also maintains the Strategic Petroleum Reserve (SPR), which guards against the adverse economic impact of a major petroleum supply interruption to the United States, helping to ensure the Nation's energy security.

GE prototype for radial stacked planar solid oxide fuel cells.

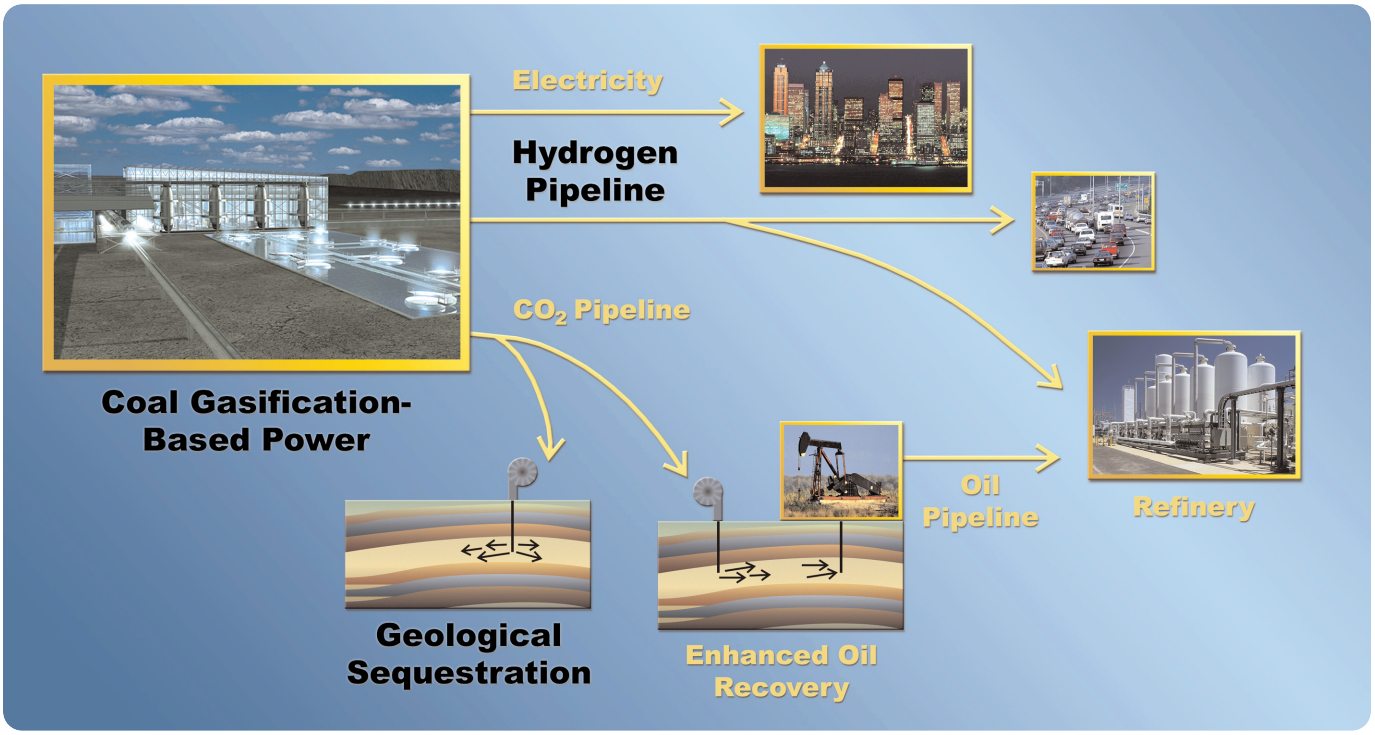
Performance Against Key Targets

During FY 2005, FE:

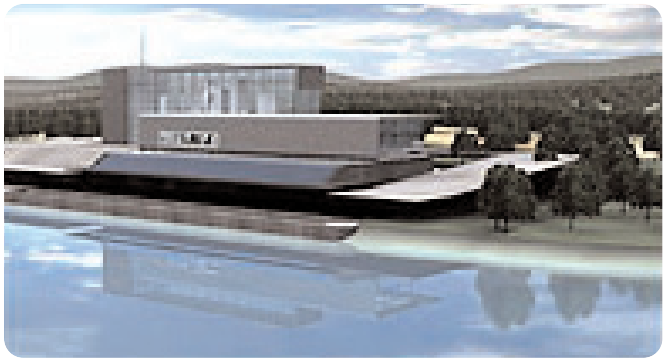
- Developed performance and cost data for emission control technologies and established, in support of proposed mercury and air quality regulations, a baseline for transport of emissions from coal-fired boilers. (FE GG 4.55.1) This is a critical step toward the goal of eliminating emissions of air pollutants through coal-based electricity production.
- Developed and validated improvements in sealing concepts, interconnects, and sulfur tolerance for solid oxide fuel cells under the SECA Core Technology Program. All three aspects provide R&D to meet SECA cost reduction and performance goals. GE Power Systems, one of six industrial teams working under the DOE SECA program, has developed a ten-cell radial stack of planar solid oxide fuel cells. The company incorporated the technology into its Phase I 5.4 kW prototype system – the first prototype SECA system to emerge from the program – and completed planned testing on September 30, 2005. (4.55.4.2)
- Developed, and tested in the Gulf of Mexico, new tools to retrieve and sample methane hydrates. (FE GG 4.56.2) Methane hydrates represent a large potential domestic resource that, if economic over the long-term, may provide an important supply of natural gas. With the information from these efforts, progress will be made toward understanding hydrate stability and the effects they may have on the global carbon cycle.
- Continued to develop novel, advanced technologies for coal gasification, focusing on ultra-clean, highly efficient processes, and reduced cost. (FE GG 4.55.2) Tests of a new, less expensive cleanup process showed sulfur and halide removal to be less than 60 ppbv and less than 10 ppbv, respectively. Less expensive oxygen production was also further developed through construction of a 5 ton per day ceramic membrane air separation unit. This oxygen production technology has the potential to reduce the cost of an IGCC plant by $75/kWe and improve its thermal efficiency by greater than one efficiency point.

RTI's High Temperature Desulfurization System installed at the Eastman Chemical Company.

Coal-Based Energy Complex



- Achieved an SPR inventory of 700 million barrels in September, exceeding the annual target by 10 million barrels. By year-end the inventory was reduced to 693.2 million barrels as the first deliveries were made in response to energy emergencies caused by Hurricane Katrina. (FE GG 4.58.1) For SPR, energy security assurance is measured by (1) how quickly the program can respond to a Presidential direction to draw down; (2) how much of the oil inventory is available; and (3) the cost efficiency of operations. The key program goal, which was achieved for FY 2005, is to maintain operational readiness to draw down at a sustained rate of 4.4 million barrels per day for 90 days, within 15 days notice by the President.



Artist's Rendering of world's first coal-based, near zero atmospheric emissions electricity and hydrogen power plant.

Electricity Delivery and Energy Reliability

The Office of Electricity Delivery and Energy Reliability (OE) leads national efforts to modernize the electric grid, enhance security and reliability of the energy infrastructure, and facilitate recovery from disruptions to the energy supply. OE performs critical functions, which directly support the Department's Energy Security General Goal 4, by working with industry, state and local governments, national laboratories and other entities, to: (1) develop advanced technologies and approaches that improve the reliability of energy delivery; (2) guard against energy emergencies; and (3) improve energy efficiency.

How We Serve the Public

- OE's programmatic activities directly benefit the public in several areas. In the field of R&D, OE works with national labs, private industry, and university and research institutions to develop technologies that will facilitate the modernization of the Nation's electricity delivery system. OE also analyzes the condition and operation of the energy infrastructure to identify critical transmission bottlenecks, chokepoints, market failures and other issues that are barriers to modernizing and upgrading the national grid. Finally, the office coordinates the Department's response to energy emergencies, helps protect against terrorist attacks on the energy infrastructure, and assists all levels of government and the private sector recover from energy supply disruptions. Most recently, OE served as the Department's lead office with its deployment of staff for emergency response and energy restoration work in the aftermath of hurricanes Katrina and Rita.

Performance Against Key Targets

During FY 2005, OE:

- Completed preparations to manufacture a 200m superconducting cable for American Electric Power (AEP) during FY 2005; however, due to a manufacturing delay, the superconducting cable was not completed until the first quarter of FY 2006. (OE GG 4.12.01) The successful development of high temperature superconducting cable will improve the efficiency and reliability of electricity transmission, such as reducing costs of increasing power delivery and relieving bottlenecks in transmission and distribution networks.
- Installed four additional data concentrators at four different data archiving and analysis locations, achieving a prototype wide area measurement system in the Nation's Eastern Interconnect. (OETD GG 4.12.02). As this wide area system is further developed, it will provide the ability to assess critical real-time grid activity and, in turn, more adequately address disturbances before they result in brown-out or black-out situations.

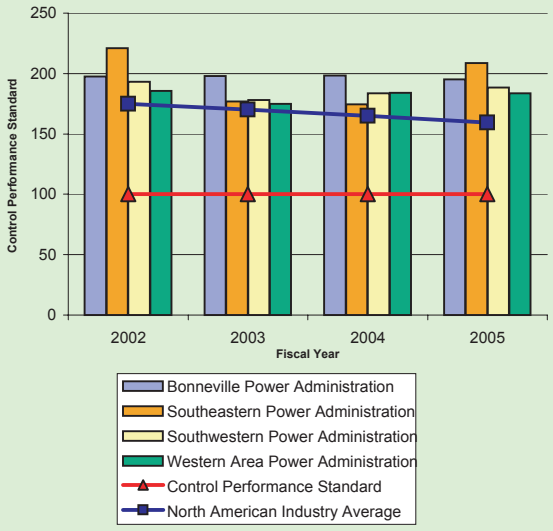
Power Marketing Administrations

The Reclamation Project Act of 1939, the Flood Control Act of 1944, and other acts direct the Department's Southeastern, Southwestern, and Western Area Power Administrations to market and deliver the power produced at Federal dams to not-for-profit utilities at the lowest possible rates to consumers, consistent with sound business practices. The self-financed Bonneville Power Administration, operating under the Bonneville Project Act of 1937, the Transmission System Act of 1974, the Northwest Power Act of 1980 and other statutes, markets and delivers federal and non-federal power to meet its statutory and contractual obligations to its customers, including providing the net firm power requirements of its requesting customer utilities.

How We Serve the Public

- The Power Marketing Administrations (PMA) market and deliver reliable, cost-based Federal hydroelectric power and related services to customers over much of the southeastern, central and western United States. Transmission systems owned by the PMAs are part of the Nation's interconnected generation and transmission system and make a significant contribution to the country's past and future energy supply. While they assure that customers receive the benefits of Federal power, the PMAs also collect sufficient revenue to repay, within timeframes established by law and regulations, the American taxpayer's investments in such power generation and transmission systems. Each PMA implements

Control Performance Standard



individual power marketing programs based on regional hydropower sources and other factors inherent to their specific region of the country. By marketing and delivering Federal hydropower, the PMAs foster a diverse supply of reliable, affordable, and environmentally-sound energy while increasing the Nation's mix of energy options.

Performance Against Key Targets

In FY 2005, the PMAs:

- Met each of their targets for system reliability, respectively, in accordance with key Control Performance Standards developed by the North American Electric Reliability Council (NERC). (PMA GG 4.51.1, 4.52.1, 4.53.1, 4.54.1) For many years the PMAs have measured their system reliability in accordance with NERC Control Performance Standards 1 and 2. As can be seen from the figure above, not only have they achieved acceptable ratings, they have exceeded the electrical utility industry average in each of the years shown.
- Met each of their respective targets for repayment of Federal power investment to the U.S. Treasury. (PMA GG 4.51.3, 4.52.3, 4.53.5, and 4.54.2) Meeting these targets demonstrates the PMAs commitment to meeting their obligations to U.S. taxpayers.

Energy Information Administration

The Energy Information Administration (EIA) provides reliable, timely and policy-neutral energy information, analysis and forecasts to its wide customer base. This customer base includes the Administration, Congress, Federal and State policymakers and agencies, the private sector, and International agencies.

How We Serve the Public

- EIA's contributions are critical for promoting sound energy decision-making and efficient energy market operations, as well as fostering general public understanding. These contributions subsequently drive the supply and delivery of reliable, affordable and environmentally sound energy, both now and in the future. There has been an increasing reliance on EIA's data and analyses to help understand and respond to current and emerging changes in various energy sectors. These changes result from actions such as energy industry restructurings, demographic changes, new fuel standards, and legislative initiatives. For example, EIA provided Congress numerous analyses to assist in its development of the Energy Policy Act of 2005.

Performance Against Key Targets

During FY 2005, EIA:

- Achieved at least a "satisfied" rating from 90 percent of customers surveyed about the quality of EIA information, meeting the annual customer satisfaction target. (EIA GG 4.61.02) EIA maintains this effectiveness through regular monitoring of customer satisfaction, something it has been doing for the past ten years.

External Factors Related to General Goal 4

The following external factors could affect our ability to achieve this goal:

- **Technology:** Technological development is inherently unpredictable. Our efforts to develop near zero atmospheric emission fossil generation technology, hydrogen, renewable energy, advanced nuclear power and fusion may be more or less successful than predicted, with a correspondingly positive or negative impact on our efforts.
- **Market Forces:** Whether new technology is deployed depends to a large extent on whether that technology is competitive, considering relevant policies (e.g., tax incentives for the purchase of fuel-cell vehicles).
- **Consumer Choice:** Improved energy efficiency is largely the result of millions of decisions by individual consumers. The Department can help develop improved technology, but whether this technology is deployed depends on consumer decisions and relevant policies that may affect those decisions. In addition, the deployment of hydrogen and alternative fueled vehicles depends to a large extent on the decisions by individual consumers to purchase these vehicles.
- **Nonproliferation Policy:** Deployment of advanced fuel technologies will depend upon policy changes permitting fuel reprocessing.

Science

— Advancing Scientific Understanding —

To protect our national and economic security by providing world-class scientific research capacity and advancing scientific knowledge.

Progress in fields such as biomedical engineering, telecommunications, supercomputing, and many others rely upon progress in the physical sciences. The Nation's investments in forefront basic research in the physical sciences are made primarily through the Department's Office of Science (SC). SC supports 43 percent of funding for basic research in the physical sciences in the U.S., underpinning our Nation's energy security.

The mission of SC is to deliver the discoveries and scientific tools that transform our understanding of energy and matter and advance the national, economic, and energy security of the United States.

In support of its mission, SC supports 10 national laboratories and 27 major scientific facilities, including neuron and x-ray light sources, supercomputing centers, fusion experiments, and particle accelerators. In FY 2005, over 19,000 scientists from universities, industry, and government will use these facilities to make tremendous advances in U.S. science and technology.

> "…making plans and checking performance against them requires a lot of time and energy – not to mention thought – and changing your ideas about how things should be done encounters huge psychological resistance. Good management and good science are neither intuitive nor easy. Science requires background knowledge to make useful plans or hypotheses; it requires discipline to execute work or experiments that conform to the plan; it requires patience and attention to detail to observe and document the results; and it requires a combination of humility and creativity to abandon preconceptions and forge a new path forward."
>
> *- John Marburger III*
> *Director, Office of Science and Technology Policy*
> *Executive Office of the President*
> *March 23, 2005*

General Goal 5: World-Class Scientific Research Capacity

Provide world-class scientific research capacity needed to ensure the success of Department missions in national and energy security; to advance the frontiers of knowledge in physical sciences and areas of biological, medical, environmental, and computational sciences; or to provide world-class research facilities for the Nation's science enterprise.

The common thread woven through all of the Department's activities is science – basic research underpins the Department's applied technology programs through strategic investments that fuel discoveries in materials sciences, chemistry, plasma science, plant sciences, biology, computation and environmental studies. SC plays five key roles in the U.S. research enterprise:

- Supports the missions of the Department, delivering the scientific knowledge for solutions to our Nation's most critical energy and environmental challenges

Science Performance Scorecard ($ in millions)

General Goal and Score	Program Costs FY 2005	Program Costs FY 2004	Program Goals and Scores		FY 2005 Budgetary Expenditures Incurred *	Performance of Annual Targets: Met (100%)	Not Met (≥ 80% but < 100%)	Not Met (< 80%)	Undetermined
5. World-Class Scientific Research Capacity	$3,565	$3,196	High Energy Physics	Y	$783	3	0	1	0
			Nuclear Physics	G	$463	4	0	0	0
			Biological and Environmental Research	Y	$758	6	0	1	0
			Basic Energy Sciences	G	$1,333	5	0	0	0
			Advanced Scientific Computing Research	G	$287	3	0	0	0
			Fusion Energy Sciences	G	$288	4	0	0	0
Total Cost	$3,565	$3,196			$3,912	25	0	2	0

* Includes capital expenditures but excludes such items as depreciation, changes in unfunded liability estimates and certain other non-fund costs, and allocations of Departmental administration activities.

- Serves as the Nation's leading supporter of the physical sciences, which includes physics, chemistry and materials science
- Serves as the stewards of world-class scientific tools – building and operating major research facilities for use by the world's scientific community
- Serves as a leading Federal agency for the creation of leadership class computational facilities for open science, enabling solutions to problems in science and industry not attainable by simple extrapolation of existing architectures
- Supports a diverse set of researchers, including those at more than 280 universities in nearly every state in the Nation, scientists and technicians at the DOE national laboratories and in industry.

"The purposes of science are the advancement of knowledge and the freedom and happiness of man."

- Thomas Jefferson

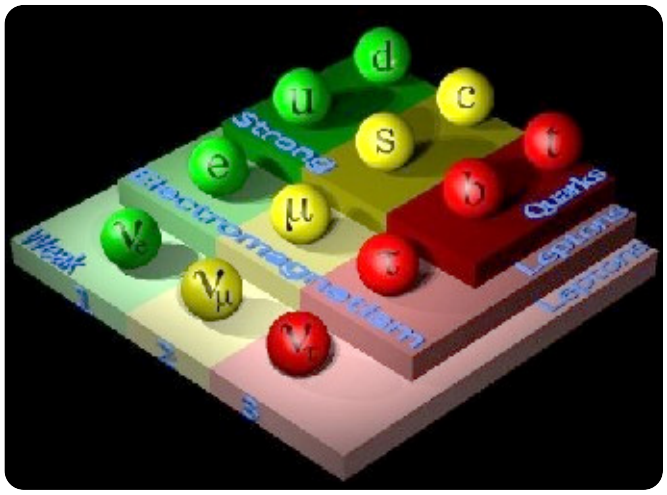
The Department's investment in the most basic areas of research spark the imagination and advance human curiosity about the universe in which we live. Historically, these investments have also paid handsome dividends in terms of new technologies that have raised the standard of living and even extended life expectancies. Examples include cell phones, satellite TV, magnetic resonance imaging (MRI), lasers (for levels, CD players, or eye surgery), the World Wide Web, and the ubiquitous computers that seem to dominate the world today. While it is unknown what technologies will ultimately result from today's investments in basic research at DOE, we welcome the opportunity to share the excitement and wonder of our continuing journey of discovery.

High Energy Physics

How We Serve the Public

Since the beginning, man has yearned to discover our world's building blocks and to know how our universe began: from the "earth, air, fire, and water" of our ancestors to the fundamental subatomic particles of today, each generation has advanced our understanding of the makeup of the universe. With revolutionary new technical tools, the last half-century has seen amazing new discoveries at an ever-increasing rate. In the World Year of Physics, the 100th anniversary of Einstein's Theory of Relativity, we find ourselves ready to discover a new universe beyond Einstein's dreams.

In the early 20th Century, we learned that the universe is expanding, found that space-time is curved, and discovered the quantum nature of matter. Over the last 30 years we also learned that just 12 types of particles, interacting by four basic forces, make up all matter– a description of nature that has been verified by so many precision measurements that it is known as the Standard Model.



Physicists call the theoretical framework that describes the interactions between elementary building blocks (quarks and leptons) and the force carriers (bosons) the Standard Model. These interactions determine the physical nature of the entire universe.

One of the great mysteries of science is how the universe originated and evolved. Experiments at the High Energy Physics' (HEP) accelerators seek evidence for "unification": the melding of today's diverse patterns of particles and interactions into a much simpler picture at high particle energies, like those that prevailed in the very early universe.

In FY 2005, HEP:

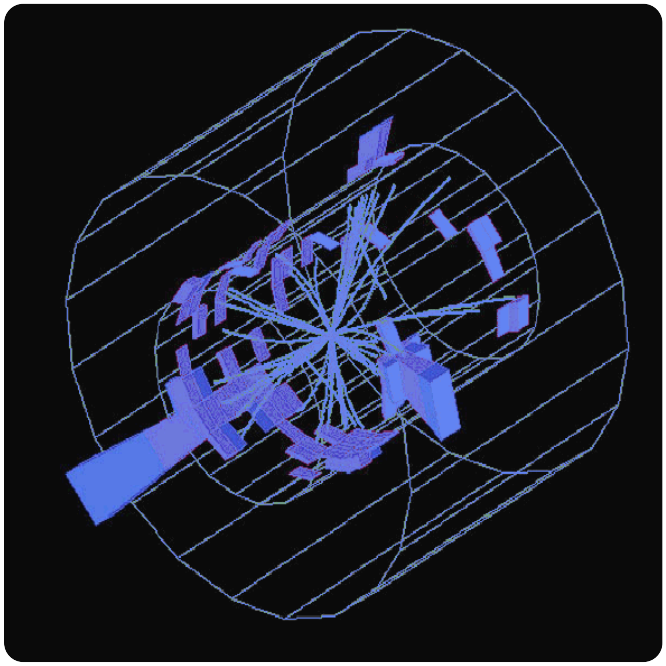
- Supported about 2,400 researchers studying elementary constituents of matter and their interactions, and their connections to birth and development of the cosmos.
- Operated accelerator facilities at the Fermi National Accelerator Laboratory (FNAL) and the Stanford Linear Accelerator Center (SLAC), and is helping to construct a new accelerator at the CERN laboratory in Europe.
- Planned future efforts, such as an International Linear Collider that will extend the energy frontier and a joint experiment with NASA for a space-based telescope that will extend our knowledge of dark energy ten billion years into the past. New experiments will begin to unravel the mysterious properties of the neutrinos.

Performance Against Key Targets

Using facilities located at FNAL, in FY 2005 HEP:

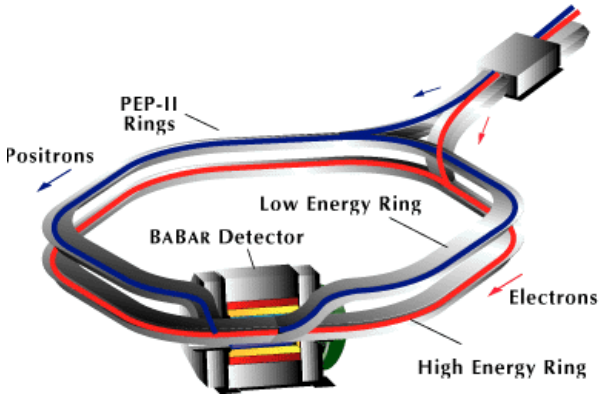
- Delivered integrated data to the CDF and D-Zero detectors at the Tevatron within 20 percent of its FY 2005 baseline (312 inverse picobarnes). (SC GG 5.19.1) HEP researchers are using this facility to search for the elusive "Higgs" field

which is believed to be the source of mass in the universe (see insert). This search has been a significant HEP activity at FNAL for the past several years. This and related activities may reveal undiscovered principles of nature that will reshape our view of the universe.



Simulation of a Higgs boson event as it might appear in a detector at Fermilab. Discovering the Higgs boson would demonstrate the existence of the Higgs field and would profoundly affect our understanding of the universe. Likewise if the Higgs boson were found not to exist, it would be a major blow to the Standard Model.

- Delivered integrated data to the BABAR detector at the SLAC B-Factory (SC GG 5.19.2) Determining how the imbalance between matter and anti-matter occurred, and why matter and antimatter did not cancel one another at the start of the universe, resulting in nothingness, is another objective of HEP research, called charge parity (CP) violation. Efforts at the SLAC focus on CP violation. Unfortunately this work was interrupted by a safety accident which shut down SLAC for almost half the fiscal year. The facility restarted in mid-April 2005. Despite this setback, performance was within 20% of the FY 2005 baseline (40 fb-1) (SC GG 5.19.02)
- Operated its user facilities to meet the needs of the research community. These national user facilities are generally operated on a near-optimal schedule, where the accelerators are down only for scheduled maintenance, upgrades and necessary machine performance studies. In FY 2005, due to the SLAC safety shutdown, the average operating time at HEP scientific user facilities was 73 percent of scheduled operating time, falling short of the FY 2005 target of 80 percent. (SC GG 5.19.04)

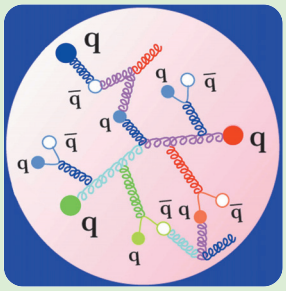


Nuclear Physics

How We Serve the Public

Nuclear matter makes up most of the mass of our planet and its inhabitants. Nuclear Physics (NP) research involves understanding nuclear matter, from the smallest building blocks, quarks and gluons, to the stable elements in the Universe created by stars; to unique isotopes created in the laboratory that exist at the limits of stability and possess radically different properties from known matter; to the mysterious and important neutrino.

- In the first half of the 20th Century, great progress was made in the understanding of nuclei and nuclear reactions, leading to the discovery of fission and fusion and the development of the large field of nuclear medicine.
- Research in the last few decades resulted in the development of the strong nuclear interaction theory called Quantum Chromodynamics Theory (QCD – see insert) which allows scientists to explain matter in terms of the interactions between quark and gluon particles.



The strong nuclear force is responsible for binding quarks together to form protons and neutrons, and the residual effects also bind these neutrons and protons together in the nucleus of the atom.

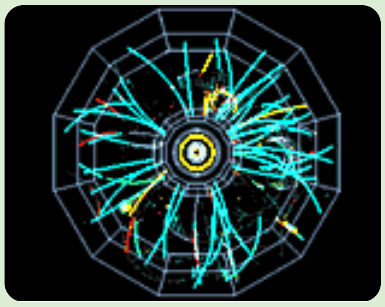
The strong interaction acts between two quarks by exchanging particles called gluons. The strong interaction has a very limited range – not much farther than the radius of a proton. It also has a strange effect – as the distance between two quarks increases, the amount of energy in the force between them increases. If the force becomes strong enough, there is enough energy to create new quarks.

- During FY 2005, the NP Program focused much of its research in several locations—Argonne National Laboratory (Argonne Tandem Linac Accelerator System-ATLAS), Oak Ridge National Laboratory (Holifield Radioactive Ion Beam Facilities-HRIBF), Thomas Jefferson National Accelerator Facility (Continuous Electron Beam Accelerator Facility-CEBAF), and Brookhaven National Laboratory (Relativistic Heavy Ion Collider-RHIC).

➔ Performance Against Key Targets

In FY 2005, NP:

- Achieved targeted number of events (within 30 percent of the baseline estimate) through experiments at RHIC facilities (SC GG 5.20.3) These experiments allow scientists to study heavy-ion collision events that create new forms of hot, dense nuclear matter and to probe their properties. The quark and gluon constituents of protons and neutrons are confined inside nucleons except in one circumstance – if the nuclear matter is heated sufficiently, quarks will be released and protons and neutrons will melt into a superheated, dense plasma of quarks and gluons. The same kind of plasma is believed to have filled the universe about a fraction of a second after the "Big Bang."



An end view of collision between deuterons and gold ions captured by the STAR detector at Brookhaven's Relativistic Heavy Ion Collider (RHIC).

- Achieved an average operating time at NP scientific user facilities of greater than 80 percent of scheduled operating time, meeting the FY 2005 target. (SC GG 5.20.4) To meet the needs of the research community, these national user facilities are optimally operated.

Biological and Environmental Research

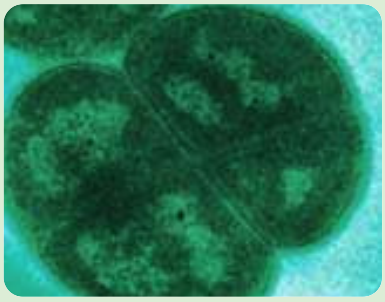
➔ How We Serve the Public

Advances in biology, spurred by achievements in genomic research and the sequencing of the human genome, bring new and ground-breaking solutions to some of the most elusive biological and environmental challenges. A key challenge is to learn how to turn microbes into engines of scientific progress. Some microbes thrive in extreme environments such as high-level radioactive waste tanks and could be used to help clean up those wastes, while others act as "mini-factories" producing energy such as ethanol or hydrogen that could be harvested. The Biological and Environmental Research (BER) program supports research to understand how microbes can be used to help clean up chemical and radioactive pollutants and to produce energy. BER also supports research to understand and predict changes in global climate; non-biological research into the nature, extent and remediation of toxic and high-level radioactive wastes; and medical sciences research to develop new radioisotope-based diagnostic and treatment tools and bioengineering solutions to critical medical problems. As scientists begin to understand and develop the capabilities to manipulate matter at the micro-, nano-, and molecular-scales, such understanding will allow us to model and predict biological and environmental interactions on a regional and global basis, leading to new approaches to energy production, environmental management, and medical diagnosis and treatment. Such research is in support of the National Energy Policy.

➔ Performance Against Key Targets

In FY 2005, BER:

- Conducted two sets of field experiments to evaluate the microbe-based immobilization of chromium and uranium through biological reduction to understand and control the long term fate and transport of these contaminants in the field. (SC GG 5.21.1) DOE's past weapons activities have left environmental cleanup challenges across the country. With current technology it is simply not physically or economically practical to completely stabilize or remove all contaminants from these sites. Native microbes have a remarkable capacity to thrive in highly contaminated waste sites and to use toxic wastes as sources of energy. New, science-based strategies, including microbial strategies, for contaminant stabilization could provide a cost effective tool for waste site cleanup and stewardship. At present, we are just beginning to understand the structure and function of native microbial communities, including their biochemical capabilities and mechanisms that regulate those processes. Microbial research in BER looks at the most basic



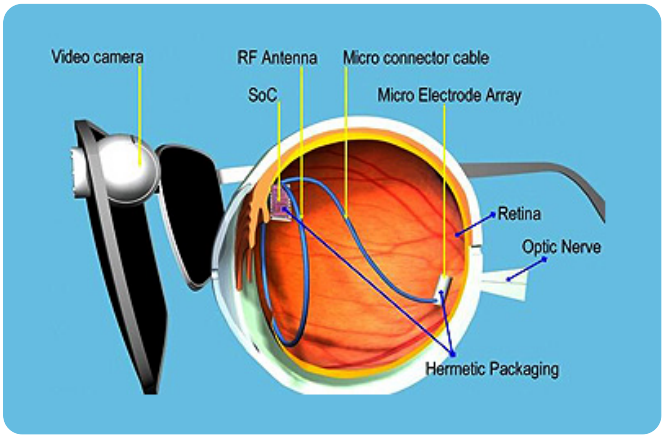
Electron photomicrograph of a typical four cell cluster of D. radiodurans (sequenced in the DOE Genomics Program).

The radiation resistant bacterium Deinococcus radiodurans may be useful in the cleanup of highly radioactive wastes.

molecular-level processes of nature, offering tremendous promise for a safer, stronger, healthier and more secure world.

- Implemented three separate component submodels (interactive carbon cycle, secondary sulfur aerosol, and interactive terrestrial biosphere) within a climate model to conduct 3-to 4-year duration climate simulations. (SC GG 5.21.3) Advanced climate models are needed to describe and predict the roles of oceans, the atmosphere; sea, ice, and land masses in climate change; and the role of clouds in controlling solar and terrestrial radiation to and away from the earth. BER funded scientists study the impacts of excess carbon dioxide in the atmosphere from human sources (including energy use) on Earth's climate and ecosystems, and develop possible mitigation strategies for stabilizing atmospheric carbon dioxide levels. BER research addresses the challenge of helping to formulate domestic and international energy policy in response to environmental change, and defines DOE's role in the U.S. Global Change Research Program, the Climate Change Research Initiative, and the Climate Change Science Program.

- Completed fabrication of a 60 microelectrode array for use as an artificial retina; however, Food and Drug Administration (FDA) approval to implant the prototype into blind patients is pending. Approval is expected in the second quarter of FY 2006. (SC GG 5.21.07) This project is an example of research at the juncture of the physical and biological sciences that promises remarkable technology for tomorrow's medicine. Already, developments in imaging technology by BER supported scientists have resulted in dramatic improvements in nuclear medicine. BER research and technology development is improving medical diagnostic and therapeutic tools for disease diagnosis and treatment, noninvasive medical imaging, and biomedical engineering, such as the development of biomimetic devices like the artificial retina that will help the blind to see.



An artificial retinal implant consists of a chip implanted in the eye that receives image data transmitted over a wireless connection from the high-tech glasses. Patients wear glasses with a tiny camera on the frame. The camera captures images and sends the data to a microprocessor (concealed in the side of the glasses), which converts the data to an electronic signal. The signal is sent to a receiver in the eye and then travels along a tiny wire to the retinal implant. The signal causes the implant to stimulate the eye's remaining retinal cells which send the image along the optic nerve to the brain.

Basic Energy Sciences

How We Serve the Public

Advances in the materials and chemical sciences, such as new magnetic materials; high strength, lightweight alloys and composites; novel electronic materials; and new catalysts, improved a number of energy technology applications to produce energy more efficiently and with less environmental impact. These advances are possible because of basic research in the physical sciences.

In nanoscale science research, it has been found that the properties of materials are dramatically different from their macro scale properties. Tiny structures of just a few atoms and molecules may be assembled into useful devices such as computers that can store trillions of bits of information. Complex structures may be designed, one atom at a time, to enhance certain traits such as super-lightweight and ultra-strong materials. Basic Energy Sciences (BES) is a leader in this revolution with nanoscale research in materials sciences, physics, chemistry, biology, and engineering, and BES can develop tools to probe and manipulate matter at the nano scale.

BES researchers have also observed and manipulated matter from the molecular scale to large assemblies of interacting components. Scientific discoveries in basic energy sciences will accelerate progress toward more efficient, affordable, and cleaner energy technologies.

The ability to observe, characterize, manipulate, and computationally model matter at the atomic or molecular scale determines the answers to such questions. BES capabilities that enable this research include state-of-the-art light sources, nanoscale science research centers, electron beam microcharacterization centers, high flux neutron sources, and a combustion research facility. These scientific facilities are located at the Stanford Linear Accelerator Center, Lawrence Berkeley National Laboratory, Oak Ridge National Laboratory, Argonne National Laboratory, Brookhaven National Laboratory, Sandia National Laboratories, Los Alamos National Laboratory, and the University of Illinois.

Performance Against Key Targets

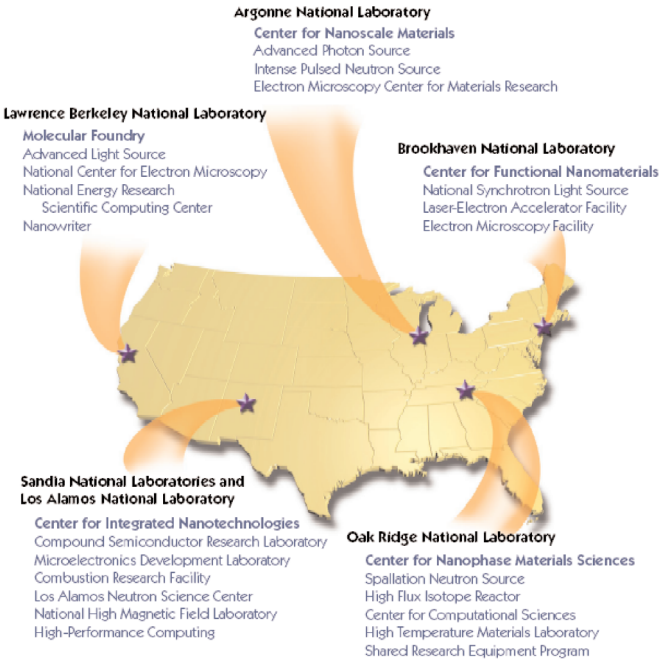
In FY 2005, BES:

- Demonstrated improvements in temporal and spatial resolution capabilities. (SC 5.22.1 and 5.22.2) Nanomaterials offer the possibility of revolutionary advances in materials properties and behaviors. For this

reason, research at the nanoscale is critical to these challenges. Four thrust areas are: (1) attain a fundamental scientific understanding of nanoscale phenomena, particularly collective phenomena; (2) achieve the ability to design and synthesize materials at the atomic level to produce materials with desired properties and functions; (3) take full advantage of major user facilities, and (4) develop experimental characterization techniques and theory/modeling /simulation tools necessary to drive the nanoscale revolution. Improving temporal and spatial resolution is critical to achieving these goals.

- Achieved an average operating time at BES's seven scientific user facilities of greater than 90 percent of scheduled operating time (SC GG 5.22.5), and met cost and schedule baseline targets for major construction, upgrade, or equipment procurement projects (SC GG 5.22.4). Along with supporting the near maximum operating levels of user facilities, BES is focused on the design, fabrication, and construction of new facilities to characterize and ultimately control materials. One of these, the Spallation Neutron Source (SNS), will be the world's most powerful neutron scattering facility when completed in FY 2006.

BES Nanoscale Science Research Centers



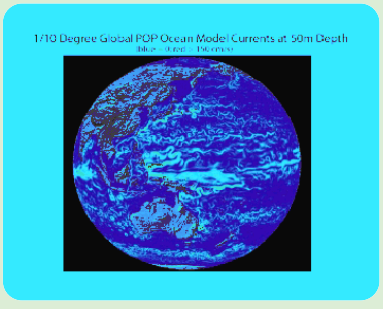
The Nanoscale Science Research Centers (NSRCs) supported by Basic Energy Sciences will be research facilities for the synthesis, processing, and fabrication of nanoscale materials. They will be co-located with existing user facilities to provide sophisticated characterization and analysis capabilities. In addition, NSRCs will provide specialized equipment and support staff not readily available to the research community. NSRCs will be operated as user facilities and be available to all researchers.

Aerial photograph of the nearly completed SNS in Oak Ridge, Tennessee. The typical size of an atom is tenths of a nanometer, and the laws of physics limit the resolution (i.e., the smallest features that can be seen) of visible light microscopes to features roughly a few hundred nanometers in size. Thus, instruments with resolutions one thousand times better than the best visible light microscopes are required to see atoms. To see atoms, we must use probes that are themselves as small as the atoms under investigation. Three such probes are: x-rays, electrons, and neutrons. Each has become the basis for major scientific user facilities in materials research and related disciplines. The BES synchrotron radiation light sources, electron-beam microcharacterization centers, and neutron scattering facilities are revealing the atomic world.

Advanced Scientific Computing Research

How We Serve the Public

The understanding of basic processes, such as fluid flow and molecular structure, increases with computational modeling capability. Predicting the behavior of complex systems through computer-based simulation is the goal of Advanced Scientific Computing Research (ASCR). Through modeling and simulation, one can explore the interior of stars, learn how protein machines work within living cells, and make unique catalysts and high-efficiency engines.



Computational science capabilities already underpin the research and development that the Department conducts to meet its energy and national security missions, and is critical to scientific discovery in general.

- ASCR creates world-class, high performance computational networking tools that support the science, energy, environmental remediation, and national security missions of the Department. ASCR also supports basic research in many fields, including applied mathematics, computer science, advanced networks and software and partners with other programs in SC to support research in fields such as

structural biology; superconductor technology; applied mathematics, medical research and technology development; materials, chemical and plasma sciences; high energy and nuclear physics; and environmental and atmospheric research.

- ASCR plays a major role in the SC-wide Scientific Discovery through Advanced Computing (SciDAC) program, which aims to use computer simulations to develop scientific advances that were impossible using theoretical or laboratory studies alone and which will support SC programs. SciDAC has already produced advances in climate modeling and prediction, plasma physics, particle physics, accelerator design, astrophysics, chemically reacting flows and computational nanoscience.
- Scientists ponder numerous questions that can only be addressed through advances in scientific computing, such as predicting climate change or understanding complex biological systems. To meet its R&D needs, ASCR activities occur at 65 academic institutions and 10 DOE laboratories. More than 2,400 university scientists, government agencies, and U.S. companies use ASCR-funded high-performance computers each year.

➔ Performance Against Key Targets

In FY 2005, ASCR:

- Achieved an average 50 percent increase in the computational effectiveness of a subset of application codes within the SciDAC effort. (SC GG 5.23.3) This measure evaluates the contribution of research in applied mathematics and computer science to scientific discovery in the other programs within the SC, and is a key indicator of ASCR's success in enhancing scientific discovery. In many cases, improvement due to this type of advance is equal to advances in hardware speed.

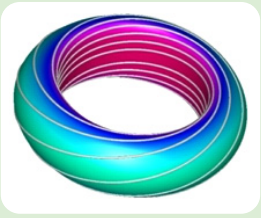
Fusion Energy Sciences

➔ How We Serve the Public

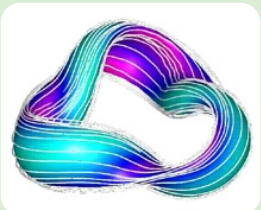
Fusion is the power source of the sun and the stars. The challenge is to understand and produce this energy process on Earth for the benefit of all. Fusion is the process in which the two hydrogen isotopes (deuterium and tritium) overcome their nuclear repelling force to combine and transform to helium and a neutron in a super-heated plasma. The advantage is that a small amount of hydrogen isotopes converted to helium creates a large amount of released energy. Fusion will provide a virtually never-ending, safe and environmentally friendly energy source available to the whole world.

- The Fusion Energy Sciences (FES) program supports advances in plasma science, fusion science, and fusion technology required for an attractive fusion energy source – economically and environmentally. The main scientific challenge in fusion sciences is to make fusion energy practical.
- In addition to the significant funding in the U.S. (approximately $250 million), more than $1 billion in magnetic fusion research is expended by other nations annually. This creates the opportunity for a joint scientific effort in which experimental results are openly shared promoting international collaboration. In 2003, multilateral negotiations began to site, construct and operate an international fusion facility called ITER. ITER will be the first fusion science facility capable of producing a sustained burning plasma, and is the next major step in demonstrating the scientific and technological feasibility of fusion energy. In FY 2005, negotiations among the Russian Federation, the European Union, Japan, China, Republic of Korea, and the United States yielded a site selection for ITER at Cadarache, France.

The National Energy Research Scientific Computing (NERSC) Center, managed and operated by Lawrence Berkeley National Laboratory, is a world leader in accelerating scientific discovery through computation.



Tokamak model



Stellerator model

Magnetic fusion relies on magnetic forces to confine the charged particles of the hot plasma fuel for sustained periods of fusion energy production. Two methods for achieving this are shown. The tokamak utilizes a combination of toroidal and poloidal magnetic fields to generate an overall nested helical structure, which is necessary to keep the plasma stable. The tokamak is presently the leading candidate design for a future "working" magnetic fusion device, which has the ultimate goal of confirming high temperature plasmas at sufficiently high densities and long enough confinement times so as to be applicable to fusion power production. Stellerators are another type of "magnetic bottle" which rely on only externally driven 3-dimensional magnetic shaping allowing for steady state operation.

Performance Against Key Targets

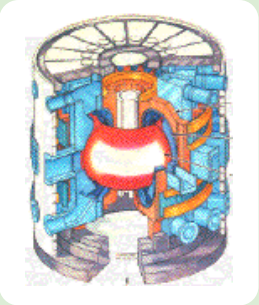
In FY 2005, FES:

- Conducted collaborative experiments between the United States, Japan and Europe on the DIII-D tokamak (at General Atomics) obtaining a result on energy confinement that indicates that ITER, once constructed, may perform better than its baseline design. (SC GG 5.24.1 and 5.24.2) Studying the behavior of high temperature plasmas under a wide variety of conditions indifferent tokamaks obtained through joint experiments under the International Tokamak Physics Activity (ITPA) provides the database needed to develop a predictive capability for optimizing magnetic confinement and understanding burning plasmas. By using a variety of plasma control tools, appropriate materials, and having the diagnostics needed to measure critical physics parameters, scientists will be able to develop optimum scenarios for achieved high performance plasmas in ITER and, ultimately, in reactors.
- Achieved an average operating time at the major national fusion facilities (the DIII-D, the Alcator C-Mod, and the National Spherical Tokamak Experiment) of greater than 90 percent of scheduled operating time, meeting the FY 2005 target. (SC GG 5.24.3) To meet the needs of the research community, these national user facilities are optimally operated.

External Factors Related to General Goal 5

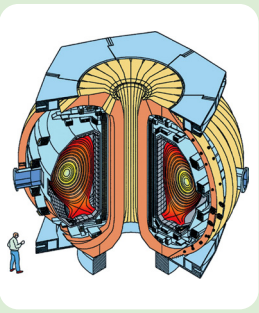
- The prospect of insufficient scientific and technical talent, now and in the foreseeable future, threatens our ability to maintain world-class scientific capacity.
- Also of concern is the imbalance in the overall research portfolio favoring biological research. Investments in the physical sciences underpin progress in other fields, especially rapidly growing linkages between the biological and physical sciences.

Major Collaborative Fusion Facilities



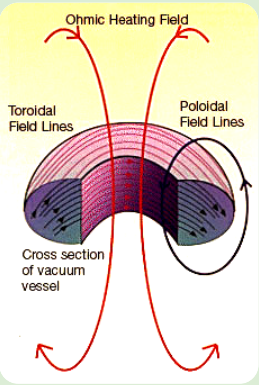
ITER

ITER. The US is engaging in negotiations with international partners aimed at constructing the world's first sustained burning plasma experiment, capable of producing 500 million watts of fusion power for periods of 5 minutes or more.



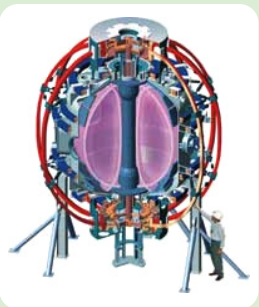
DIII-D

DIII-D (General Atomics) is the largest magnetic fusion research facility in the United States, with plasmas at close to fusion reactor temperatures it has been a major contributor to ITPA joint experiments and to ITER design.



Alcator-C-Mod

Alcator-C-Mod (Massachusetts Institute of Technology) is a unique, compact-tokamak facility that uses intense reactor-level magnetic fields to confine high-temperature, high-density plasmas in a small volume.



NSTX

NSTX (Princeton Plasma Physics Laboratory) is an innovative magnetic fusion device that was constructed by the Princeton Plasma Physics Laboratory in collaboration with the Oak Ridge National Laboratory, Columbia University, and the University of Washington, Seattle.

Environment

— Resolving the Environmental Legacy —

To protect the environment by providing a responsible resolution to the environmental legacy of the Cold War and by providing for the permanent disposal of the Nation's high-level radioactive waste.

Brookhaven National Laboratory – The Brookhaven Graphite Research Reactor was the world's first research reactor constructed solely for the peaceful use of atomic energy and operated from 1950 to 1968. This picture shows the demolition of Building 708 due to contamination from normal reactor operations.

The Department has had an environmental mission since its establishment in 1977. This mission has become more important since the end of the Cold War. Fifty years of nuclear defense work and energy research resulted in large volumes of solid and liquid radioactive waste along with significant areas of contaminated soil and water.

The mission of the Department's Environmental Management (EM) program is to safely clean up the contamination from these operations and dispose of the waste in a manner protective of the environment, the workers, and the public. Over the past few years, the program has delivered significant risk reduction and cleanup results while ensuring that the cleanup is safe for workers, protective of the environment and respectful to the taxpayer. These outcomes are providing important and valuable benefits for the generations to come. EM has made significant advances in FY 2005 in accelerating and completing the packaging of plutonium and other high risk nuclear materials for secure storage until disposition in a geologic repository.

Following site closure, the Office of Legacy Management (LM) has as its mission the responsibility to ensure protection of human health and the environment through effective long-term stewardship of land, structures, facilities, and records, as well as the oversight of the Department's post-closure responsibilities for former contractor employees.

Environment Performance Scorecard ($ in millions)

General Goal and Scores	Program Costs FY 2005	Program Costs FY 2004	Program Goals and Scores		FY 2005 Budgetary Expenditures Incurred*	Performance of Annual Targets: Met (100%)	Not Met (≥ 80% but < 100%)	Not Met (< 80%)	Undetermined
6. Environmental Management	$6,719	$6,283	Environmental Management	Y	$9,402	4	2	2	0
			Legacy Management	G	$74	1	0	0	0
7. Nuclear Waste	$521	$530	Nuclear Waste Disposal	R	$614	3	0	1	0
Total Cost	$7,240	$6,813			$10,090	8	2	3	0

* Includes capital expenditures but excludes such items as depreciation, changes in unfunded liability estimates and certain other non-fund costs, and allocations of Departmental administration activities.

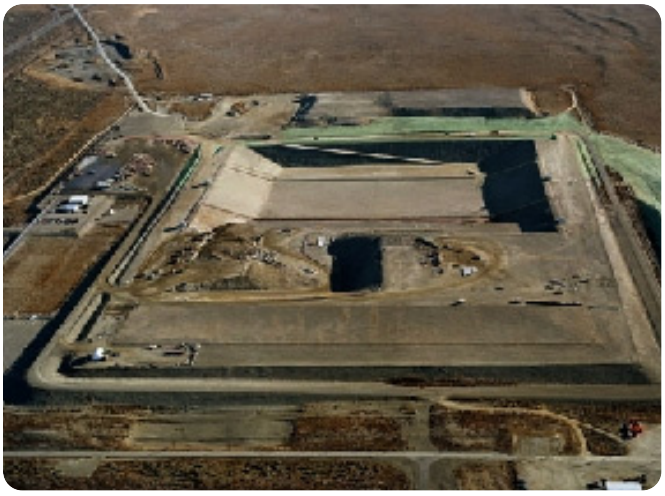
The Office of Civilian Radioactive Waste Management (RW) is responsible for managing and disposing of high-level radioactive waste and spent nuclear fuel in a manner that protects health, safety and the environment; enhances national and energy security; and merits public confidence.

General Goal 6: Environmental Management

Accelerate cleanup of nuclear weapons manufacturing and testing sites, completing cleanup of 108 contaminated sites by 2025.

Safety is top priority. EM continues to maintain and demand the highest safety performance in all that it does. EM has focused the cleanup program on risk reduction, cleaning up more efficiently and cost effectively, and working collaboratively with regulators and stakeholders in developing strategies for site closure.

Where EM has completed its mission, the transfer of responsibility for long term surveillance and maintenance,



Hanford Site: Cells 5 and 6 at the Environmental Restoration Disposal Facility (ERDF) were completed as part of the site's accelerated cleanup progress, bringing its total capacity to 8 million tons.

records, pension plans, and post-retirement benefits to LM allows both offices to focus on their primary missions. Concentrating all legacy functions in one office heightens the visibility and, consequently, the accountability to the affected communities for legacy activities.

How We Serve the Public

The Department is addressing the legacy of more than 50 years of nuclear weapons production and nuclear power research and development. The scope of the environmental program includes stabilization and disposition of some of the most hazardous materials known to man. The cleanup program, which resulted from over 5 decades of nuclear weapons production and energy research, is the largest active cleanup program in the world encompassing over 2 million acres at 114 sites. As of September 2005, the cleanup of 76 sites has been completed.

Performance Against Key Targets

The Department is targeting 89 and 100 geographic sites to be completed by the end of FY 2006 and FY 2012, respectively. To ensure the success of these future interim targets, EM maintains a set of corporate performance measures that enables the program to track the accomplishment of risk-reducing actions at each of its sites. These corporate performance measures are quantitative and provide a comprehensive programmatic perspective to completing the EM mission. The performance measures, each of which has an established annual target, are tracked in the context of the total measure (life-cycle) necessary to complete each site as well as the EM program as a whole. The key performance measures below portray the broad scope of challenges the EM program faces in completing its cleanup mission.

During FY 2005, EM:

- Disposed of a cumulative total of 27,875 cubic meters of transuranic (TRU) waste in the Waste Isolation Pilot Plant (WIPP). As Chart 1 indicates, EM is behind its life-cycle schedule for disposing of a cumulative total of 40,711 cubic meters of TRU waste at the end of FY 2005. (EM GG 6.18.1) EM has taken action to revise and improve procedures and implement corrective actions at Idaho National Laboratory (INL) and Los Alamos National Laboratory in order to achieve sustained shipments. However, the final shipment of TRU waste left the Rocky Flats site in April 2005. This milestone is another step toward the final conversion of the Rocky Flats site to a National Wildlife Refuge managed by the U.S. Fish and Wildlife Service. The shipment of TRU waste to WIPP demonstrates a site's progress in reducing risk and completing cleanup.

This final shipment of transuranic waste from Rocky Flats to the Waste Isolation Pilot Plant in New Mexico completed a 10-year effort to characterize and safely package Rocky Flats' 15,000-cubic-meter inventory.

Chart 1 – TRU Waste Disposed at WIPP

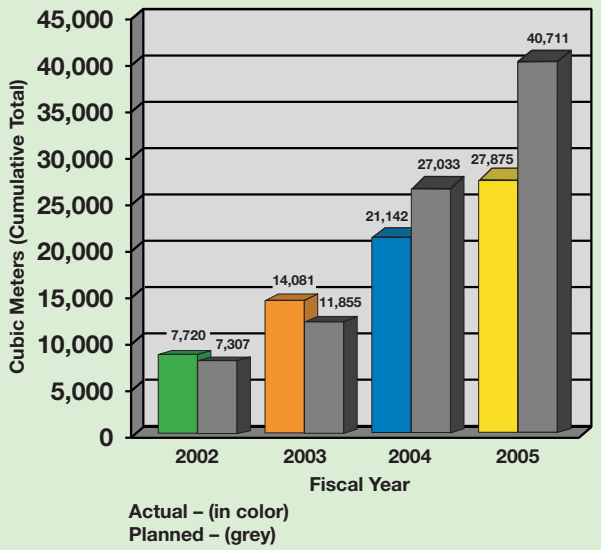
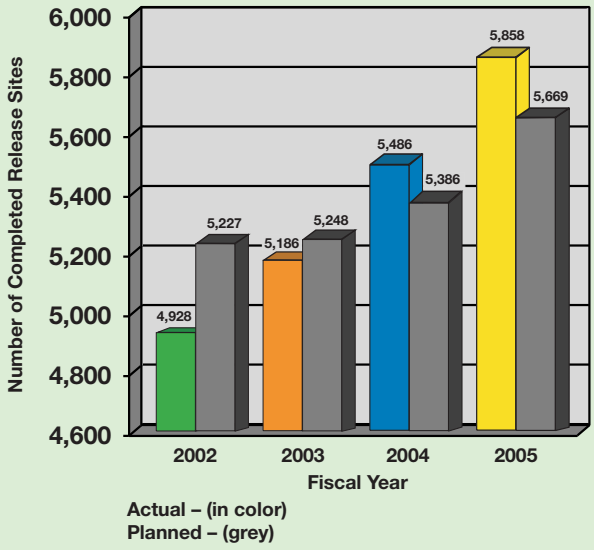
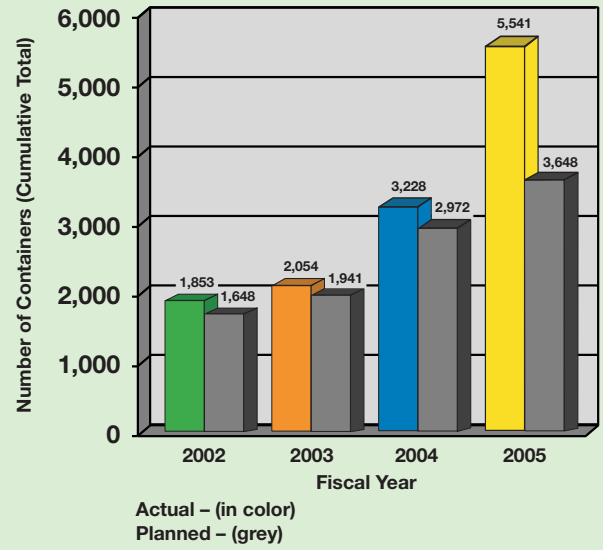


Chart 3 - Completed Release Sites



- Packaged a cumulative total of 5,541 containers of enriched uranium at INL, Hanford, and Savannah River, which is well ahead of its cumulative life-cycle target of 3,648 containers for FY 2005 (see Chart 2). (EM GG 6.18.4) In addition, EM completed the packaging for disposition of plutonium metal or oxide materials at Hanford, Rocky Flats, and Savannah River. These accelerations were due in part to using new technologies for characterizing the containers and handling plutonium. Completing these targets ahead of schedule results in significant risk reduction.
- Completed remediation work at a cumulative total of 5,858 release sites, which exceeds its cumulative life-cycle target of 5,669 release sites for FY 2005 (see Chart 3). (EM GG

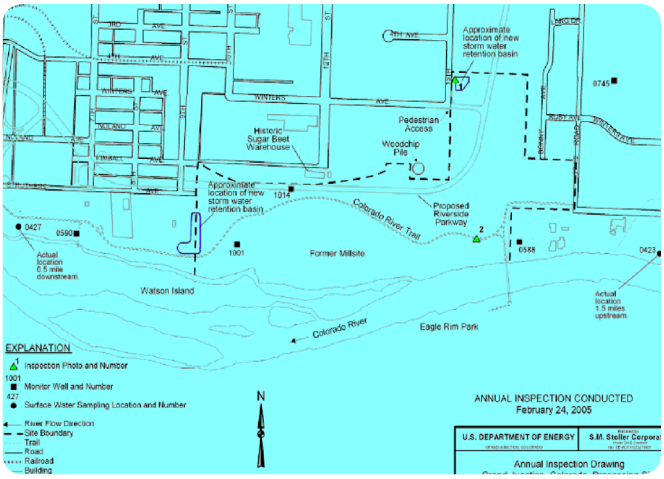
Chart 2 - Enriched Uranium Packaged for Disposition



This aerial survey of Rocky Flats using a helicopter-mounted gamma detection system is part of the site's final survey program and provides an added degree of assurance that the cleanup objectives of the Rocky Flats Cleanup Agreement have been achieved and that all areas of surface soil contamination have been identified.

6.18.8) Acceleration in the completion of release sites at Rocky Flats, Lawrence Livermore National Laboratory, Pantex, and Nevada is a good indicator of a geographic site's progress toward completion. When active remediation at all release sites has been completed in accordance with the terms and conditions of cleanup agreements, a geographic site will be considered complete in its entirety.

LM supports the General Goal by ensuring that the Department's long-term agreements and legal commitments to environmental stewardship and to former contractor employees are satisfied. By managing the long-term surveillance and maintenance at sites where remediation has been essentially completed, EM is allowed to concentrate its efforts on continuing to accelerate cleanup and site closure resulting in reduced risks to human health and the environment and reduced landlord costs. In FY 2005, LM successfully met its



The Grand Junction, Colorado, Processing Site was inspected on February 24, 2005 and is in excellent condition. Ground water quality has not deviated from previous trends and concentrations of site-related constituents are not significantly higher downstream of the site.

performance target of ensuring continued effectiveness of cleanup remedies at a total of 65 sites. (LM GG 6.26.1)

Detailed performance information for the Environmental Management General Goal is available in the Performance Results section.

External Factors Related to General Goal 6

The following external factors could affect our ability to achieve this goal:

- **Regulatory Requirements:** The Department's approach to cleanup is affected by various regulatory requirements, including compliance with environmental laws and regulations, agreements with state and federal regulators, and legal decisions. Laws and regulations are subject to change, agreements with states require renegotiation, and legal decisions can alter strategic frameworks.
- **Cleanup Standards:** The end state for cleanup at certain sites has not been fully determined. The extent of cleanup workscope greatly impacts cost and schedule.
- **Technology:** The development and deployment of innovative technologies could help reduce risk, lower cost, and accelerate the pace of cleanup. However, suitable cleanup technologies may not currently exist.
- **Uncertain Work Scope:** Uncertainties are inherent in the environmental cleanup program due to the complexity and nature of the work. For example, there are uncertainties at some of the sites regarding the types of contaminants, their extent, and concentrations.
- **Commercially Available Options for Waste Disposal:** The accomplishment of accelerated risk reduction and site closure is dependent upon the continued availability of commercial options for mixed low-level waste and low-level waste disposal.
- **Failure of Cleanup Remedy:** The failure of a cleanup remedy (technology, etc.) to perform as expected could result in a site being returned to EM for additional remediation.

Fernald Closure Project brings demolition to the K-65 Silos that were home to 8,900 cubic yards of radioactive waste, the byproduct of uranium metal extraction. The waste will be treated and disposed off-site.

General Goal 7: Nuclear Waste

License and construct a permanent repository for nuclear waste at Yucca Mountain and begin acceptance of waste.

The disposal of spent nuclear fuel from the Nation's commercial nuclear reactors and the environmental clean-up and disposal of the Nation's high-level radioactive waste remaining from the Cold War is part of the Federal government's responsibilities. In July 2002, after more than two decades of scientific study, President Bush signed the joint Congressional Resolution designating Yucca Mountain as the site of the Nation's first geologic repository for high-level radioactive waste and spent nuclear fuel. RW is responsible for licensing, building, and operating the repository, which will ultimately be used to safely dispose of both commercial waste, and the Department's spent nuclear fuel, high-level radioactive waste, and surplus fissile materials.

How We Serve the Public

Commercial and defense spent nuclear fuel and other highly radioactive wastes are currently stored in temporary facilities at some 125 sites in 39 states (see map). More than 160 million Americans live within 75 miles of one or more of these sites. The ultimate consolidation and disposal of nuclear waste at Yucca Mountain will support national security and energy security, reducing the number of locations where nuclear materials are stored, and maintaining the viability of the Navy's nuclear powered fleet by providing a disposal path for the

View to the south of Yucca Mountain crest showing coring activities.

Navy's spent nuclear fuel. Nuclear waste disposal is also essential for maintaining the viability of the commercial nuclear power industry, which currently supplies more than 20 percent of the nation's electricity. Congress has indicated that continued support for nuclear power development is contingent upon successfully establishing the repository.

Performance Against Key Targets

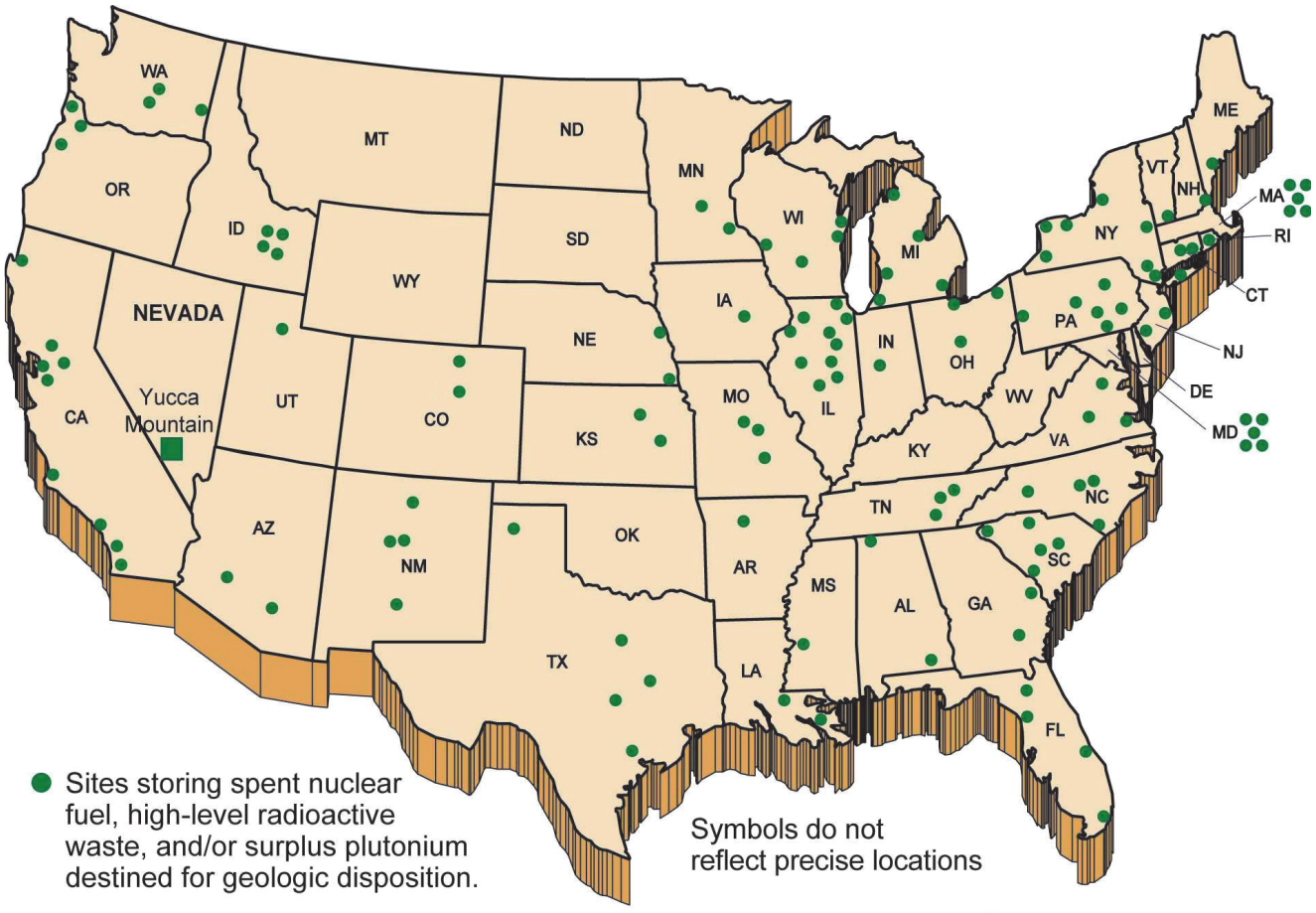
The Department's goal is to license and construct a permanent repository at Yucca Mountain. Accomplishing this goal requires:

- Obtaining a construction authorization from the Nuclear Regulatory Commission (NRC) and subsequently a license to operate the repository.
- Completing construction of the repository and infrastructure to support receipt and emplacement of spent nuclear fuel and high-level radioactive waste.
- Finishing the national and Nevada waste transportation systems in time to support repository operations.

RW continues to establish the framework for initial waste receipt, as well as the infrastructure to support ongoing repository operations.

During FY 2005, RW:

- Focused on finalizing the draft license application and related actions, including: (1) completing total system performance assessment calculations and the final report, and (2) improving the design of the waste package, surface facilities, and subsurface facilities. (RW GG 7.25.1)

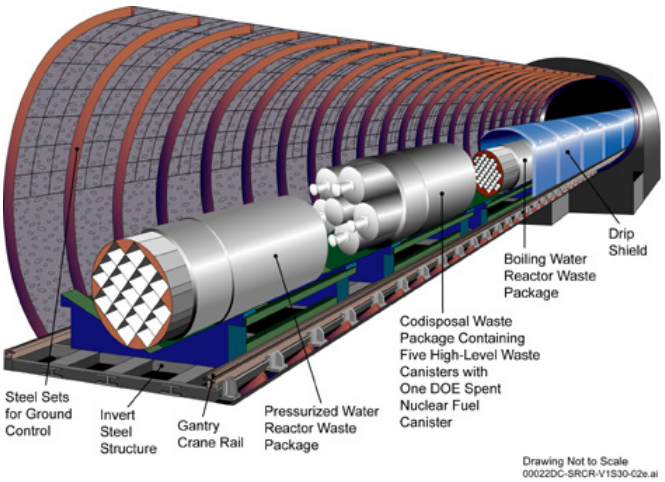


A national map of current waste locations.

The Department decided that the draft license application should not be submitted until issues including fuel oxidation, the Environmental Protection Agency's (EPA) radiation standard, and the infiltration model have been resolved. While this decision resulted in the Department not meeting the target as scheduled, resolution of the issues will enable the Department to submit a defensible license application to construct and operate a permanent repository for nuclear waste.

- Completed indexing of approximately 98 percent of DOE's collection of documentary evidence material on the Licensing Support Network (LSN). The LSN is an internet-based document repository that has been established to support DOE's application for a license to construct the Yucca Mountain repository. NRC regulations (10 CFR 2, Subpart J) require DOE and all other participants in the licensing proceedings to produce their relevant documents on the LSN. The Department was in the process of providing its remaining documents and completing various internal validations of its document production on the LSN when NRC's Atomic Safety and Licensing Board's Pre-License Application Presiding Board ordered DOE to produce copies of the draft license application on the LSN. DOE has appealed this order to the NRC. DOE will not certify its LSN collection until NRC has issued a decision on DOE's appeal of this order. (RW GG 7.25.2)

- Completed the field studies, analysis, and conceptual engineering required to support the issuance of a draft Environmental Impact Statement (EIS) for the Nevada rail line. This achievement is crucial for establishing the detailed approach, timetable, costs, and capabilities for transporting the nuclear waste from an existing rail line in Nevada to the repository. The data was incorporated into the draft EIS for DOE internal review in August 2005. (RW GG 7.25.3)



Cutaway of a drift with three types of waste packages.

External Factors Related to General Goal 7

The opening date of the Yucca Mountain repository will also depend on resolution of a number of external factors, including:

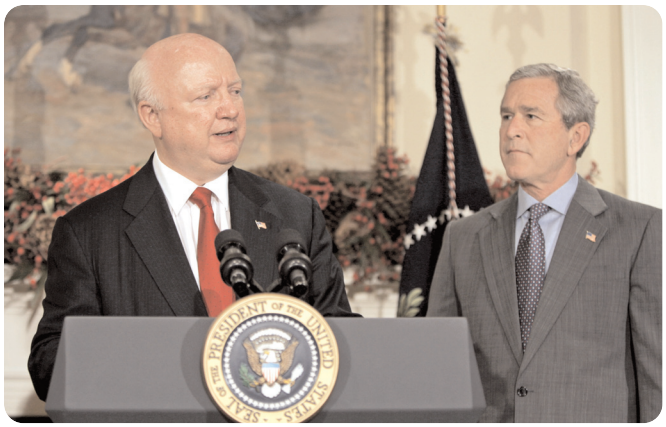
- **Regulatory Requirements:** The NRC is responsible for reviewing DOE's license application for Yucca Mountain. The NRC requires that the Program certify it has submitted all documents relevant to the licensing process to the DOE LSN six months before the license application is submitted. In August 2004, the NRC issued its ruling striking the certification of the LSN document collection the Department submitted in June 2004. Another obstacle in the preparation and submittal of the license application was the July 2004 decision of the U.S. Court of Appeals to vacate the Environmental Protection Agency's 10,000 year radiation protection compliance timeframe for Yucca Mountain. Rulemaking proceedings by both agencies will be needed in order to establish new regulations consistent with that decision. The revised radiation protection standard could require the reevaluation of some parts of the analysis in the license application.

- **Litigation:** It is likely that any NRC decision to issue a license to construct and operate a repository at Yucca Mountain will be challenged in the courts. These lawsuits, including ones filed by the State of Nevada, local jurisdictions, and others may pose schedule and financial risks to the Program. Another issue concerns ongoing lawsuits by the nuclear utilities. Although the courts have already established the Government's liability for damages stemming from delays in taking possession of commercial spent nuclear fuel in 1998, the amount of those damages is undetermined.

- **Congressional Funding:** Significant budget increases are required if the Program is to reach the goal of developing a geologic repository at Yucca Mountain. To ensure stable and sufficient funding for the design, construction, and operation of the repository, and for acquisition and development of the transportation infrastructure in the future, a restructuring of the Program's funding mechanisms is needed. The Department will continue to work with Congress to ensure that there is sufficient and stable funding available to meet the Program's requirements.

CORPORATE MANAGEMENT

President's Management Agenda



The President, in his 2001 President's Management Agenda (PMA), challenged the Federal Government to become more efficient, effective, results-oriented and accountable. Over the past four 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.

> "What matters most is performance and results. In the long term, there are few items more urgent than ensuring that the Federal Government is well-run and results-oriented."
>
> *- President George W. Bush*

Each agency is held accountable for its performance in carrying out the PMA through quarterly scorecards issued by 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 seven PMA initiatives: five government-wide areas and two agency-specific areas. Each year, the Department and OMB consider progress made over the previous year and create a plan for the upcoming year's PMA-related activities. The plan is used by the Department to guide further management reforms, and by OMB as the baseline for assessing the Department's quarterly performance. Further information on OMB's management of the PMA may be found at http://www.results.gov.

FY 2005 saw many significant accomplishments in each of the seven PMA areas. These are included in the report *Fueling Progress for America: Results from Implementing the President's Management Agenda*, issued by the Secretary of Energy in July 2005. The full report is available at http://www.energy.gov/engine/doe/files/dynamic/2062005161630_PMAReport2005.pdf. Key achievements in each of the seven PMA areas are discussed below.

As of September 30, 2005

Initiative	Status	Progress
Human Capital	Green	Green
Competitive Sourcing	Yellow	Yellow
Financial Performance	Green	Yellow
E-Government	Yellow	Green
Budget & Performance Integration	Green	Green
Federal Real Property Asset Mgt.	Yellow	Green
R&D Investment Criteria*	Red	Yellow

* A common R&D Investment Criteria score is determined for the entire government.

What Progress Indicates

Green: Implementation is proceeding according to plan.
Yellow: Some slippage or other issue(s) requiring adjustment.
Red: Initiative in serious jeopardy absent significant management intervention.

Strategic Management of Human Capital – The Department developed and has begun implementing a comprehensive human capital plan that addresses the Department's organizational structure, work force size, skill gaps, performance management systems, and diversity.

Competitive Sourcing – The Department has studied 1,180 positions since FY 2002 as part of seven competitive sourcing studies. As a result of the competitions completed to date, DOE expects to save taxpayers over $378 million.

Improved Financial Performance – The Department received a clean audit opinion for the previous six years, with no identified material weaknesses. However, during FY 2005, the Department implemented a new commercial off-the-shelf accounting and financial reporting system and consolidated its finance and accounting operations into a new financial services organization. The major challenges presented by this combination of circumstances adversely impacted the Department's ability to produce timely, auditable FY 2005 financial statements and, consequently, the auditors issued a disclaimer of opinion on those statements and reported a material weakness in internal control relating to financial control and reporting. Progress has been made in resolving many of the challenges and major efforts are underway to address the remaining challenges. Efforts continue on implementation of I-MANAGE, the Department's integrated business management system, which will further enhance the ability to make better-informed decisions.

Expanded Electronic Government – The Department has refocused its e-government efforts over the past year to more effectively manage its information technology investment portfolio, improve its cyber security program, mature its enterprise architecture, and enhance controls on personnel security and physical access systems.

Budget and Performance Integration – The Department has made significant progress toward integrating budget and performance information. Performance data from the Program Assessment Rating Tool (PART) reviews, the Department's performance measures, and financial data are now being used to make better informed policy, program, resource, and operational decisions.

Federal Real Property Asset Management (Agency-Specific) – The Department has issued an Asset Management Plan that provides guidelines and principles for managing the Department's $77 billion real property portfolio. Ten Year Site Plans have been prepared and approved for each of the Department's major sites. These plans ensure that the facilities and infrastructure are aligned with and capable of supporting current and anticipated mission requirements.

Research and Development Investment Criteria (Agency-Specific) – The costs and benefits of proposed research and development investments are being evaluated according to relevance, quality, and performance. The Department has developed and issued guidance for analyzing and estimating the potential benefits of its research and development programs using standard methods and assumptions.

"Working together, we will achieve our goal of steadily improving every Department of Energy program and continue to transform the Department into an organization that makes good on its promises and delivers results for the Nation."

- Energy Secretary Samuel W. Bodman

Management Challenges & Significant Issues

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 within our operations that merit a higher level of focus and attention. These areas represent the most daunting management challenges and significant issues we have in accomplishing our mission. 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. That statement is to be included in the Department's annual Performance and Accountability Report. The Inspector General's statement included in the Financial Results section of this report identifies seven challenges for the Department. Similarly, in FY 2003, the Government Accountability Office (GAO) identified six major management challenges and program risks to be addressed in FY 2005.

After considering the areas identified by the IG and GAO, as well as all other critical activities within the agency, we identified 11 "Significant Issues" that we believe represent the most important matters facing the Department now and in the coming years. It is our goal that resolution of our Significant Issues will help mitigate the IG and GAO management challenges as well as internally identified issues.

The GAO identified two areas not included by the IG or the Department. The challenges are related to revitalizing the Department's infrastructure and meeting the Nation's energy needs. While the Department recognizes the importance of both of these areas and has included these as issues in the past, based on our progress in reducing these vulnerabilities, we no longer consider these areas to be significant management problems.

The Department aggressively pursues corrective action for all challenges, whether externally identified by the IG or GAO or internally identified by the Department. To further highlight the Department's strategy for mitigating the previously mentioned significant management issues, the following table identifies the Department's Significant Issues for FY 2005 and demonstrates their relationship with the IG and GAO challenges.

FY 2005 MANAGEMENT CHALLENGES AND SIGNIFICANT ISSUES

IG Challenge Area	GAO Challenge Area	Significant Issue Identified by Department
Contract Administration **(S)**	Resolve problems in contract management that place agency at high risk for fraud, waste and abuse **(S)**	Oversight of Contractors **(S)**
National 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)**
Stockpile Stewardship **(D)**	Improve management of the Nation's nuclear weapons stockpile **(D)**	Stockpile Stewardship **(D)**
Information Technology **(S)**		Information Technology Management **(S)**
Project Management **(S)**		Project Management **(D)**
Financial Control and Reporting **(S)**		Financial Control and Reporting **(S)**
	Enhance leadership in meeting the Nation's energy needs **(D)**	
	Revitalize infrastructure **(S)**	
		Human Capital Management **(S)**
		Safety & Health **(S)**
		Nuclear Waste Disposal **(D)**
		Unclassified Cyber Security **(S)**

(D) Mission Direct (S) Mission Support

Oversight of Contractors

Description of Issue

Improvements are needed in the oversight of contractors managing and operating the Department's facilities. Specific oversight problems have been identified at environmental cleanup sites, Yucca Mountain and laboratories conducting national security and scientific activities. Adequate oversight is needed to assure that contractor operations are effective and efficient.

Expected Completion

Correction is expected to extend into the out-years with the completion date to be reassessed in FY 2006.

Actions Taken & Remaining

An improved contract administration structure that focuses on performance-based contracts has been put in place. An acquisition approach was implemented to drive performance by clearly identifying the work to be done, the Department's expectations, establishing proper incentives for its contracts, and adequately rewarding performance.

EM established the Contract Management Advisory Council (CMAC) to ensure aggressive and consistent contracting strategies are implemented. The CMAC, part of EM's Configuration Control Board, also provides increased coordinated oversight of contracts and associated projects. EM's strategy ensures performance-based incentives are included in contracts to align with site risk reduction and closure objectives and to review acquisition strategies to ensure optimal support of cleanup objectives.

RW began the development of a comprehensive action plan that will provide clearer and more objective performance standards for the managing and operating contractor for the Yucca Mountain Project.

SC began implementing a new organizational structure in April 2005 wherein each Site Manager became an Administrative Contracting Officer with at least one level III contracting officer on staff. Beginning in FY 2006, SC will be conducting both technical and business reviews with each of its laboratory contractors. These combined SC actions are further strengthening SC's laboratory oversight approach. SC also completed revision of laboratory performance measures utilized for reviewing scientific and operational performance at all of its national laboratories. The new measures will be fully implemented in FY 2006.

In FY 2005, NNSA implemented its reengineering plans. The NNSA Senior Procurement Executive issued and implemented a series of Acquisition Letters in the form of Business Operating Policy letters. These letters, in part, address the accountability expectations of contractor performance, Site Manager metrics, Program Officer expectations, and the roles and responsibilities of contracting officers.

Security

Description of Issue

Unprecedented security challenges have evolved since the events of September 11, 2001. 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 and infrastructure. These have made it necessary for the Department to reassess and strengthen its physical and cyber security postures.

Expected Completion

Long-term correction is expected due to the continuing nature of security threats.

Actions Taken & Remaining

In May 2004, the former Secretary of Energy announced a set of sweeping new initiatives to improve security across the Department's nationwide network of laboratories and defense facilities, particularly those housing weapons-grade nuclear material. Completion of these initiatives will ensure the Department has a clear strategic security plan outlining the Department's future security course, conducts ongoing threat analyses to establish the framework for continually improving security protective measures, and enhances the physical security of our facilities. In FY 2005, a number of actions were taken to improve security across the Department. These actions included: providing NNSA with technologies to support the keyless systems initiative; establishing the Center of Excellence for Technology Deployment to improve the effectiveness and efficiency of protection programs; implementing consolidation of nuclear materials through the Nuclear Materials Disposition and Consolidation Coordination Committee; strengthening security human capital expertise through implementation of the Chiles Report recommendations and curriculum development and implementation of the Professional Development Program at the National Training Center; expanding cyber security performance testing to identify potential vulnerabilities; and providing sites with technology and protective force tactical options to address the October 2004 Design Basis Threat Policy. Additionally, in June 2005, the Secretary of Energy approved the DOE oversight policy to ensure DOE line management and contractor assurance processes are established to further enhance the protection of national security assets throughout the Department. The Department also completed implementation of the Cyber Security Enhancement Initiative during FY 2005.

The NNSA implemented corrective action plans to address the recommendations provided by special study groups in security operations and personnel during FY 2005 and continued to implement the Design Basis Threat Policy throughout the NNSA complex. NNSA also implemented a cyber security program with the publication of a series of Business Operating Policy letters that address all aspects of cyber security. It is anticipated that problems with security operations and personnel within the NNSA will be addressed through FY 2006.

Environmental Cleanup

Description of Issue

There are significant long-term compliance and waste management problems at the Department's facilities due to past operations that left risks to the environment. Even though these issues resulted from earlier activities conducted in a different atmosphere and under less stringent standards than today, the Department is committed to maintaining compliance with current environmental laws and agreements.

Expected Completion

Long-term correction expected with completion date to be reassessed in FY 2006.

Actions Taken & Remaining

Continuous progress has been made in cleaning up contaminated sites. EM's Top-To-Bottom Review has resulted in an aggressive approach taken to implement an accelerated cleanup strategy with an emphasis on risk reduction and continuous improvement in safety. The time span to complete the cleanup mission has been reduced by 35 years, from 2070 to 2035. In addition to accelerated cleanup, EM implemented resource loaded baselines at all but six sites during FY 2005. Since approved site baselines account for 90% of EM's mission-related life cycle costs, the program is currently monitoring the vast majority of its project performance towards meeting site closure goals. The remaining six site baselines are projected to be completed and approved during FY 2006. The current status of the EM program was published in the June 2004 EM Closing Planning Guidance which contains all the necessary strategy and performance elements required to carry out the cleanup program by 2035.

Stockpile Stewardship

Description of Issue

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 that underground nuclear testing does not need 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.

Expected Completion

FY 2006

Actions Taken & Remaining

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 and all sites have developed an Enhanced Surveillance Campaign Project Management Improvement Plan. Also during FY 2005, the Enhanced Surveillance Campaign Risk Management Plan was issued. The Life Extension Program and sub-elements are now subject to the NNSA's Planning, Programming, Budgeting and Evaluation processes and the Department's project management processes. Resource loaded plans that contain cost, scope, and milestones were implemented for the Enhanced Test Readiness Program during FY 2005. NNSA continues to develop the Risk Management Plan for Test Readiness.

Information Technology Management

Description of Issue

The Department has a decentralized approach to information technology management, limited control by the Chief Information Officer in the budgeting process, and lack of an information technology baseline to guide management decisions. These problems have impeded the Department's ability to effectively manage its information technology resources.

Expected Completion

FY 2006

Actions Taken & Remaining

Management of information technology (IT) has been strengthened by making the Chief Information Officer (CIO) a direct report to the Secretary and the primary official for agency information technology issues. The Department has revitalized its IT Council to assist the CIO in managing the Department's IT resources. The Department has fully implemented the IT capital planning process and IT selection is performed in alignment with the budget formulation process. The IT Council also conducts quarterly control reviews of the Department's major information systems to ensure that projects are performing to cost, schedule, and performance goals and guidance on Post-Implementation Reviews ensures that appropriate evaluation occurs. In addition, the IT Council has chartered a specific Integrated Project Team to address management of the Department's Consolidated Infrastructure Investment, with emphasis on consolidating like elements within that infrastructure where investment dollars can be saved or avoided without impact to the mission consistent with DOE's enterprise architecture (EA).

A strategic plan targeted at Clinger-Cohen Act reforms has been developed and an FY 2005 update of the high-level EA and the modernization blueprint were submitted to OMB and approved in June 2005. Policy updates to DOE Order 413.3 to clarify CIO roles and responsibilities and strengthen IT governance are underway. The EA Repository has been implemented and populated with baseline data, and expanded to integrate the President's Management Agenda Initiatives.

NNSA continues to work with the Department's CIO in all areas of IT and participates with the rest of the Department in all e-Gov initiatives.

Project Management

Description of Issue

The Department needs to improve the discipline and structure for monitoring project performance and controlling program and baseline changes to projects as well as the Department-wide approach for certifying Federal Project Directors at predetermined skill levels to ensure competent management oversight of resources. In addition, it was determined that the Department needs stronger policies and controls to ensure that ongoing projects are reevaluated frequently in light of changing missions.

Expected Completion

FY 2007

Actions Taken & Remaining

Implementation of the program to certify contractors' earned value management systems continued during FY 2005. An aggressive review schedule was developed which will result in eight major contractors being reviewed in FY 2005 and ten in FY 2006 out of a current total of 31 major contractors requiring certification. At least seven contractors are expected to achieve certification in FY 2006.

During FY 2005, the number of certified Federal Project Directors rose to 95. This represents a significant increase from the 35 Project Directors certified in accordance with the Project Management Career Development Program at the close of FY 2004. By the end of May 2006, a certified Federal project director must lead all departmental capital asset projects over $5 million. In addition, the CIO has established a qualification process for IT Project Managers that is aligned with the Federal CIO Council approved process. All major IT investments have qualified project managers.

EM has applied project management principles to all cleanup projects with a total estimated cost greater than $20 million. As of October 2004, EM completed initial reviews of resource-loaded cost and schedule baselines for 89 projects, including seven line-item construction projects. The baselines, which reflect an accelerated cleanup and closure strategy, describe in detail the activities, schedule and resources required to complete the EM cleanup mission at each site or to construct a major facility at a site. Independent reviews have been conducted for 61 of the 89 EM projects. The remaining reviews are being scheduled and will be conducted as expeditiously as possible. DOE has also utilized the U.S. Army Corps of Engineers to conduct independent reviews on several major high-risk projects.

During FY 2005, NNSA issued a Business Operating Policy on Project Management and continued the certification process of its construction Project Managers. Furthermore, the Department conducts senior management reviews of projects on a quarterly basis.

Financial Control and Reporting

Description of Issue

The overlapping implementations of the financial services Most Efficient Organization (MEO), the Integrated Management Navigation System (I-Manage) Standard Accounting and Reporting System (STARS) and Data Warehouse (IDW) have resulted in a new organizational structure for performing financial services and accounting operations, a new financial management system, numerous business process changes, centralization of accounting functions, a new chart of accounts (standard general ledger) and new accounting codes. As a result, the Department is now faced with many challenges related to data conversion, data/system reconciliation and start-up operations. In addition, the Department missed critical milestones in preparing its FY 2005 consolidated financial statements for audit.

Expected Completion

FY 2006

Actions Taken & Remaining

A large number of the initial challenges associated with standing up the new financial services organization and conversion to the new financial management system in FY 2005 have been overcome. Many of the transactions processing backlogs experienced in the initial start-up have been brought under control as the staff gained operational experience. Also, to ensure system data integrity, key reconciliations are being performed and corrective actions are underway to resolve data conversion issues from the Department's legacy accounting systems to STARS. These reconciliations, once completed, should provide reasonable assurance that the Department's accounting data used for funds control and financial reporting are accurate.

During FY 2005, resources were allocated to the STARS and IDW Project Teams and to the Office of Financial Management to expedite the corrective actions related to data conversion, data/system reconciliation, and start-up operations. To supplement Federal staffing in these areas, contractual support was added, where needed, in FY 2005. Issues and corresponding corrective actions have been well documented and progress made is formally reported to senior management on a weekly basis. Responsible senior managers are fully engaged in the day-to-day management of the corrective actions.

Human Capital Management

Description of Issue

Since 1995, the Department has experienced a 25 percent reduction in the workforce. In Fiscal Year 2005, up to 40 percent of the Department's critical workforce is eligible for retirement within the next 5 years. Combined with other factors such as lengthy moratoria on hiring, the relative age of the workforce, and a variety of incentives to leave Federal service, the decline in staffing has left the Department with a significant challenge: reinvesting in its human capital to ensure that the right skills, necessary to successfully meet its missions, are available.

Expected Completion

FY 2007

Actions Taken & Remaining

A Departmental framework for addressing this issue was put in place with the implementation of a comprehensive human capital management strategy; an improved senior executive performance management system; a guide on developing and retaining a highly-skilled workforce; and business visions and workforce plans for all major offices.

During FY 2005, efforts continued to re-shape the Department's work force through increased emphasis on performance and accountability. While continuing its reorganization efforts, EM implemented various new initiatives that foster performance excellence, leadership continuity, and knowledge sharing. EM also utilized an innovative approach to use Voluntary Separation Incentive Payments and Voluntary Early Retirement Authority. NNSA implemented all of its re-engineering plans, enabling it to ensure that all key programmatic and site offices are right-sized to meet changing mission requirements. The Department will continue to conduct human capital analyses, identify skill mix issues, and realign the Department complex-wide to ensure a workforce that is fully capable of meeting its responsibilities.

During FY 2006, the Department intends to make significant strides in closing skills gaps in its critical occupations, specifically in the areas of project and contract management (including information technology management), as well as financial assistance.

Safety & Health

Description of Issue

Ensuring the safety and health of the public and the Department's workers is one of the 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. Currently, the Department is addressing explosives safety issues and, with the ongoing re-engineering of the NNSA workforce, needs to ensure that adequate focus on general safety at our laboratories and plants is maintained.

Expected Completion

Long-term correction expected with completion date to be reassessed in FY 2006.

Actions Taken & Remaining

Significant actions have been taken to mitigate Safety and Health concerns. In June 2005, the Secretary of Energy approved a new DOE oversight policy to ensure DOE line management and contractor assurance processes are established to further enhance the protection of the public, the Department's workers, and national security assets. During FY 2005, the Office of Security and Safety Performance Assurance (SP) conducted inspections to evaluate the effectiveness of selected institutional safety & health processes and the implementation of core functions of Integrated Safety Management at the activity level, the functionality of essential safety systems, and oversight and assessment processes. Independent oversight reviews also examined the Department's nuclear facility safety system oversight process, the Unreviewed Safety Question Process, Chronic Beryllium Disease Prevention Program, Environmental Management Program, and corrective action management. In addition, a follow-up review was conducted to assess the effectiveness of corrective actions taken to address findings from the SP 2004 special investigation of worker vapor exposures and occupational programs medical services at the Hanford Site.

In FY 2005, EM completed assessments at major EM sites related to adequacy of hazard controls, with a particular emphasis on specific administrative controls. Also in FY 2005, SC continued efforts to identify benchmarks for safety performance and establish a best-in-class performance measure based on performance by the top 10 percent of similar research and development industries. These goals are institutionalized and are being incorporated into the lab appraisal plans. SC's plan is to have all labs performing in the top 10 percent of R&D industries by the end of FY 2007. In addition, the Office of Nuclear Energy, Science and Technology completed reviews of Advanced Test Reactor (ATR) safety systems in FY 2005 and will continue these reviews as part of the ATR Documented Safety Analysis reconstitution project, in support of the ATR Life Extension Program.

As part of NNSA's effort to increase emphasis on safety, during FY 2005, NNSA established and staffed a Chief, Defense Nuclear Safety advisor position to advise the Administrator and oversee nuclear facility safety throughout the NNSA complex. Additionally, as part of NNSA's structure, emphasis has been placed in staffing facility representatives at each site to manage, implement, and oversee safety processes, procedures, and the implementation thereof.

Nuclear Waste Disposal

Description of Issue

A repository for the Nation's spent nuclear fuel and high-level radioactive waste has not been opened as required by the Nuclear Waste Policy Act. Delays in milestones and revisions to cost and schedule baselines have been required as a result of funding short-falls and other external and internal factors, including court-ordered revision of the radiation protection standard, NRC's rejection of the Licensing Support Network, deficiencies in the quality assurance program and technical issues associated with the managing and operating contractor's draft license application. A mechanism needs to be established to assure the necessary funding is available to permit the timely acceptance and disposal of waste.

Expected Completion

Reassessment will occur in FY 2006 upon finalization of a funding mechanism.

Actions Taken & Remaining

Extensive scientific testing determined that Yucca Mountain, Nevada, is suitable for the disposal of spent nuclear fuel and high-level radioactive waste and, in 2002, the President designated it as the site for the Nation's first repository. While future long-standing financial commitments will be required, the Yucca Mountain project continues to make progress toward the goal of opening the deep geologic repository and beginning acceptance of waste. The President's FY 2005 budget request contained a proposal to reclassify the annual receipts from nuclear utility ratepayers to be credited as offsetting collections in order to provide adequate appropriations for developing the Yucca Mountain repository and transportation infrastructure.

The Department also established a formal Configuration Control Board to control cost, schedule, and work scope changes. In addition, detailed Product and Milestone Management Plans are being developed to help ensure all requirements are identified and to facilitate a better understanding of the interrelationships among activities and their importance to waste emplacement. Also, the FY 2005 draft Capital Asset Management Plan was provided to OMB in November 2004.

Work is progressing on strengthening the repository license application through a proposed program redirection to simplify the operations of the repository by accepting primarily canistered commercial spent fuel from utilities, by evaluating the impacts of the proposed revision to the EPA radiation protection standard, by addressing NRC concerns associated with the Department's portion of the Licensing Support Network, and by reevaluation of water infiltration models prepared by U.S. Geological Survey personnel. The Department is also preparing a draft Environmental Impact Statement for the alignment, construction, and operation of a rail line to the Yucca Mountain site.

If funding reform legislation is not authorized by Congress, the Department will continue to experience funding uncertainties and require other policy decisions and actions.

Unclassified Cyber Security

Description of Issue

In July 2005, the Deputy Secretary established a Cyber Security Improvement Initiative. The goal of the initiative was to identify improvements that could be made in management, operational and technical cyber security controls within the Department. The first phase of the initiative resulted in the identification of a number of improvements that could be made to cyber security across the agency. The second phase involved conducting Site Assistance Visits (SAVs) to evaluate implementation of cyber security policies and standards, and test the effectiveness of security controls. SAVs have been conducted at several sites, with planned expansion to other DOE operations.

Expected Completion

Long-term corrective action is expected due to the continuing nature of security threats.

Actions Taken & Remaining

The Cyber Security Project Team, under the direction of the CIO, with participation from NNSA, the Office of Energy, Science and Environment, and SP, is charged with developing the action plan to improve cyber security across the DOE complex. The team will develop recommendations regarding actions needed to address overall cyber security, including recommendations to address near and long-term management, operational and technical controls improvements. The project team will use the National Institute of Standards and Technology (NIST) standards and guidance to support its efforts. Finally, the project team will undertake remaining activities of the Cyber Security Improvement Initiative and integrate the issues and recommendations into a final report to be delivered to the Deputy Secretary in November 2005.

NNSA and ESE continue to work with SP and the CIO in the Cyber Security Improvement Initiative activities. Implementation plans for NNSA's enhanced cyber security directives have been developed by NNSA field organizations.

Management Control Systems

Federal Managers' Financial Integrity Act

The *Federal Managers' Financial Integrity Act* (FMFIA) of 1982 requires that agencies establish management control 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. The Secretary's FY 2005 annual assurance statement is included in his message at the beginning of this report.

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

For FY 2005, 11 significant issues have been identified that represent key areas of focus for the Department where aggressive actions are being taken, including activities to address financial control and reporting issues noted in our Federal Financial Management Improvement Act reporting.

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, based on issues identified in the area of financial control and reporting, the Department is reporting a FFMIA non-compliance. Additionally, our independent auditors have reported compliance issues related to the material weakness on financial management and reporting controls. A complete description of the issue and the Department's planned corrective actions is provided on page 49 of the report.

Federal Information Security Management Act

The *Federal Information Security Management Act* (FISMA) of 2002 directs Federal agencies to conduct annual evaluations of information security programs and practices. It provides a comprehensive framework for establishing and ensuring the effectiveness of security controls for information and information systems that support Federal assets and operations. In accordance with FISMA, the CIO is responsible for developing, maintaining, ensuring compliance with and reporting annually on the agency's cyber security program. The IG is charged with conducting an annual, independent review of the agency's cyber security program, and reporting its findings to Congress and the Executive Office of the President. Independent reviews conducted by the CIO and other work performed by the IG have identified problems in the areas of contingency planning, consistent performance of certification and accreditation, and the implementation of other cyber security controls.

The Department's FISMA reporting indicates success in fortifying external protection capabilities over the past fiscal year and a current focus towards improving internal cyber security controls. The CIO will direct future efforts on strengthening line-management accountability and defense-in-depth across the Department's enterprise.

The IG's FISMA report for FY 2005 indicates that the Department continues to focus its attention on strengthening its cyber security posture. It noted that the Department issued policy designed to address security weaknesses in areas such as certification and accreditation and the implementation of minimum security configurations. It also noted that the Department recently initiated a Cyber Security Improvement Initiative to help identify and resolve cyber security problems by providing site assistance and following up on corrective actions. The report also identified opportunities where the Department could further improve its cyber security program.

The Department's senior management remains committed to improving the Cyber Security Program, and will continue to work collaboratively to ensure that the Department's information and information systems are adequately protected.

Improper Payments Information Act

The *Improper Payments Information Act* (IPIA) of 2002, Public Law (P.L.) No. 107-300, requires agencies to annually review their programs and activities to identify those susceptible to significant improper payments. In addition, the Defense Authorization Act (P.L. No. 107-107) established the requirement for government agencies to carry out cost effective programs for identifying and recovering overpayments made to contractors, also known as "Recovery Auditing." The OMB has established specific reporting requirements for agencies with programs that possess a significant risk of erroneous payments and for reporting on the results of recovery auditing activities.

While the Department does not have any programs that meet the OMB criteria for significant risk, improper payments are monitored on a quarterly basis to ensure our error rates remain at minimal levels. The Departmental erroneous payment rate has remained at or below one percent since the inception of our tracking program in FY 2002. To support continued success, the Department has committed to pursue reduction of improper payments at any one of the Department's payment sites that exceed a target rate of 1/10 of 1 percent for any quarter. Currently, the majority of all sites are below the target and the sites above target have identified corrective actions.

The Department has established a policy for implementing recovery auditing requirements. This policy prescribes requirements for identifying overpayments to contractors and establishes reporting standards to track the status of recoveries. Analysis of payment activities confirmed a low percentage of overpayments and a high recovery rate. The Department will continue to focus on both the identification and recovery of improper payments to maintain our record of low payment errors and ensure effective stewardship of public funds. Detailed information on IPIA reporting required by OMB is available in the Appendices.

Improper Payments ($ in millions)

	FY 2002		FY 2003		FY 2004		FY 2005	
	Dollars and/or Rate		Dollars and/or Rate		Dollars and/or Rate		Dollars and/or Rate	
Total Payments	$23,587		$22,695		$23,639		$24,115	
Total Improper Payments	$11.2	0.05%	$13.7	0.06%	$20.3	0.09%	$14.5	0.06%

Note: In FY 2004, Federal payroll payments were excluded due to the outsourcing of the Department's Federal payroll function.

FY 2004 Overpayments to Contractors ($ in millions)

	Dollars
Total Overpayments	$ 10.60
Total Recovered	$ 9.50
Total Pending Recovery	$ 1.05
Total Unrecoverable	$ .06

Note: Overpayment information required for prior year only.

Performance Results

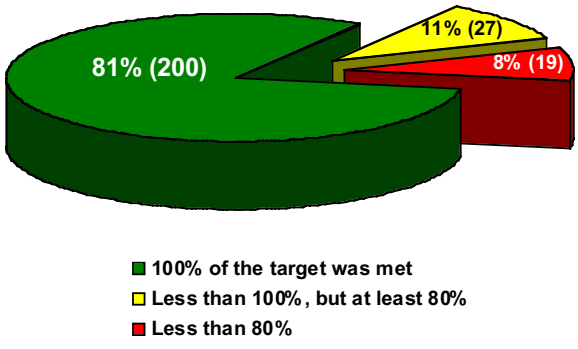
PERFORMANCE INTRODUCTION

The Performance Results section provides detailed information and an assessment of our progress for the Department's 59 program goals and 246 associated annual targets. Understanding the annual progress made toward outcome-oriented, multi-year program goals is a key indicator of whether the Department is, in turn, making progress toward its four strategic and seven general goals.

The following section is organized into seven sub-sections, each corresponding to one of the Department's seven general goals. Summary level information is provided at the start of each sub-section, and includes a tally of annual target performance, as well as current and prior year cost information. Detailed discussions of the program goals and associated annual targets that contribute to the general goal are presented with the following performance information:

- Descriptions and assessments of FY 2005 program goals and annual targets;
- Commentary for each program goal and annual target that explains the relevance of the performance results;
- Plans of action for resolving unmet annual targets;
- Supporting documentation that validates the performance results; and
- FY 2002 - FY 2004 performance results for program goals and annual targets (where applicable)[1] .

The Department's FY 2005 annual target performance is depicted in the following chart, using the color coded-scheme described in the Program Performance section of the Management's Discussion and Analysis.



[1] Related prior year target performance data represents a summary of performance against similar/related target(s) from each year. As specific targets may vary annually, performance should not be interpreted as a trend of the current year target.

DETAILED PERFORMANCE

General Goal 1: Nuclear Weapons Stewardship

General Goal 1: Nuclear Weapons Stewardship

Ensure that our nuclear weapons continue to serve their essential deterrence role by maintaining and enhancing safety, security, and reliability of the U.S. nuclear weapons stockpile.

FY 2005 Annual Performance Targets

Green *(100%)*	Yellow *(=80%, <100%)*	Red *(<80%)*	Undetermined
51	10	5	0

FY 2005 Program Costs ($ in Millions): $6,779

FY 05	FY 04	FY 03	FY 02
Y	Y	Y	G

Program Goal: Directed Stockpile Work Ensure that the nuclear warheads and bombs in the U.S. nuclear stockpile are safe, secure, and reliable. (NA GG 1.27)

Commentary: During FY 2005, although technical problems adversely affected two targets, the program fully met five others and met most major internal milestones. This is significant because the program continued to lead the effort to retain safe, secure, and reliable nuclear warheads and bombs to support the National Security Policy and the DOE Defense Strategic Goal.

FY 2005 Annual Targets

G **Complete 100 percent of annually required Assessments and Reports to support stockpile certification and surety reporting to the President. (NA GG 1.27.01)**

Commentary: This achievement is important because it certifies to the President that the nuclear weapons stockpile is safe, secure, and reliable.

Documentation: End-of-Year Reconciliation Report (OUO) (February 2005); Weapon Reliability Reports (SRD) (May 2005); Quarterly Inventory Report (July 2005) (SFRD); Nuclear Weapons Stockpile Memorandum (September 2005) (SRD); and STRATCOM briefing notes (July 2005).

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

Program Goal: Directed Stockpile Work (con't)

R **Complete 95 percent of items supporting Enduring Stockpile Maintenance (annual percentage of prior-year non-completed items completed). (NA GG 1.27.02)**

Commentary: The program did not meet the target as only 44 percent of current year Stockpile maintenance (surveillance) and 85 percent of prior year non-completed maintenance (surveillance) was completed. The primary causes are funding, capacity constraints, and periodic work stoppages at the Pantex Plant as a large number of deliverables were carried over into FY 2005 from FY 2004, so that, although percentage targets weren't fully met, the actual number of deliverables exceeded the original estimate. This maintenance is important because it keeps the active nuclear weapons fully operational if needed by the President.

Plan of Action: NNSA is conducting a strategic review of the surveillance program to determine a revised set of requirements given the recent reductions in the nuclear weapons stockpile announced by the President. The results of this study will determine the path forward on surveillance and establish a set of long-term requirements. In the meantime, NNSA continues to conduct surveillance activities.

Documentation: Milestone Reporting Tool (MRT) reports; quarterly Surveillance Policy and Integrated Requirements Council meetings, periodic site reviews; weapon-specific surveillance reviews; Production & Planning Directive; and surveillance cycle reports.

Related Prior Year Target Performance: FY 2004: Y FY 2003: NA FY 2002: NA

Y **Complete 30 percent of progress (cumulative) in completing NWC-approved B61-7/11 Life Extension Program (LEP) activity. (NA GG 1.27.03)**

Commentary: The program partially met the cumulative target of 30 percent as only 27 percent of the approved B61-7/11 activity was completed. Production capabilities failed to meet Design Agency specifications, requiring modifications to the baseline configuration. This achievement is important because it will help extend the lifetime of the B61-7/11 nuclear bomb.

Plan of Action: Air Force requirements change allowed for relaxed performance criteria, eliminating two planned tests, and allowing for a dual CSA design. The program schedule for FY 2006 has been adjusted and the integrated master schedule will be rebaselined accordingly. Process prove-in activities will begin in October 2005, engineering evaluations to be completed in December 2005, and qualified engineering release is on target for March 2006, all in support of a June 2006 First Production Unit. The Production Agency is currently considering the feasibility of the proposed changes.

Documentation: Master schedule input and NA-10 MRT reports.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

Program Goal: Directed Stockpile Work (con't)

G **Complete 29 percent progress (cumulative) for Weapons Council (NWC)-approved W76-1 Life Extension Program (LEP) activities. (NA GG 1.27.04)**

Commentary: The program completed 29 percent progress (cumulative) for Weapons Council (NWC)-approved W76-1 Life Extension Program (LEP) activities. This achievement is important because it will help extend the lifetime of the W76-1 nuclear warhead.

Documentation: Milestone Reporting Tool (MRT) reports; W76-0 2005 PCD reflects actual first disassembly; and FSED Baseline schedule with completion statuses.

Related Prior Year Target Performance: FY 2004: **Y** FY 2003: **NA** FY 2002: **NA**

G **Complete 30 percent of progress (cumulative) for NWC-approved W80-3 Life Extension Program (LEP) activities. (NA GG 1.27.05)**

Commentary: The program completed 30 percent of progress (cumulative) for NWC-approved W80-3 Life Extension Program (LEP) activities. This achievement is important because it will help extend the lifetime of the W80-3 nuclear warhead.

Documentation: Milestone Reporting Tool (MRT) reports; PDRAAG Report from DOD/AF/NWCA; successfully conducted flight test on Sep 14, 05; and NA-10 Phase 6.4 Authorization Letter of April 15, 2005.

Related Prior Year Target Performance: FY 2004: **Y** FY 2003: **NA** FY 2002: **NA**

G **Assure that 100 percent of warheads in the Stockpile are safe, secure, reliable, and available to the President for deployment. (NA GG 1.27.08)**

Commentary: The program assured that 100 percent of warheads in the Stockpile are safe, secure, reliable, and available to the President for deployment. This achievement is important because it certifies to the President that nuclear weapons in the stockpile are available for use if needed.

Documentation: Milestone Reporting Tool (MRT) reports; End-of-Year Reconciliation Report (OUO) (February 2005); Weapon Reliability Report (SRD) (May 2005); and Quarterly Inventory Report (July 2005) (SFRD).

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

G **Establish a validated baseline for projected W80 warhead production costs per warhead as computed and reported annually by the W80 Life Extension Program (LEP) Cost Control Board. (NA GG 1.27.09)**

Commentary: The program established a validated baseline for projected W80 warhead production costs per warhead as computed and reported annually by the W80 Life Extension Program (LEP) Cost Control Board. This achievement is important because it will lead to cost-saving measures in the nuclear weapons complex.

Documentation: W80 LEP Cost Control Board approved baseline

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

FY 05	FY 04	FY 03	FY 02
G	Y	Y	NA

Program Goal: Science Campaign Develop improved capabilities to assess the safety, reliability, and performance of the nuclear package portion of weapons without further underground testing; enhance readiness to conduct underground nuclear testing as directed by the President; and develop essential scientific capabilities and infrastructure. (NA GG 1.28)

Commentary: During FY 2005, the Science Campaign fully met all five targets and most internal milestones. This is significant because the program has generally recovered from the effects of the Los Alamos safety- and security-related stand-down and is functioning as a key element of the science-based nuclear weapons stockpile.

FY 2005 Annual Targets

G **Complete 25 percent of progress (cumulative) along the Primary Predictive Capability Roadmap for development and implementation of the new Quantification of Margins and Uncertainties (QMU) certification and assessment methodology. (NA GG 1.28.01)**

Commentary: The program fully met the cumulative annual target of 25 percent (increase of 15 percent), in spite of the LANL stand-down. A primary certification and boost physics workshop was held; the joint primary certification plan was prepared by LANL and LLNL with guidance and input from science campaigns personnel. This achievement is important in that the development of primary certification tools continues without underground testing.

Documentation: Primary certification milestones completed as reported in individual reports and summarized in the NA-10 Milestone Reporting Tool (MRT).

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

G **Complete 25 percent of progress (cumulative) towards conducting the first 2-axis hydrodynamics test/hydro shot on the Dual-Axis Radiographic Hydrotest Facility (DARHT) to support assessment of nuclear performance required by the National Hydrodynamics Plan. (NA GG 1.28.02)**

Commentary: LANL conducted high current, long pulse length testing of the injector and un-refurbished cells, demonstrating the performance of the injector and beam transport systems. This achievement is important because it delivers a new capability previously unavailable in the United States and critical to primary certification in the absence of underground testing is back on track to be completed.

Documentation: DARHT CD-0 report.

Related Prior Year Target Performance: FY 2004: Y FY 2003: NA FY 2002: NA

Program Goal: Science Campaign (con't)

G **Achieve 24 month readiness to conduct an underground nuclear test as established by National Security policy. (NA GG 1.28.03)**

Commentary: The program achieved 24-month test readiness to conduct an underground nuclear test. This achievement is important in that the United States maintains a credible capability to test nuclear weapons, if required.

Documentation: Milestones reported in the MRT meeting the requirements of the program to achieve 24-month test readiness as detailed in the Implementation Plan.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **NA**

G **Complete 75 percent of annual hydrodynamic tests completed in accordance with the National Hydrodynamics Plan, to support the assessment of nuclear performance. (NA GG 1.28.04)**

Commentary: The program fully met its annual target of 75 percent as LANL effectively recovered from the stand-down. Among the more significant efforts during FY 2005 were hydro shot 6125, executed with great results in the third quarter, and hydro shot 3612, executed in the fourth quarter. This achievement is important because these hydrodynamic tests are critical to W88 and W76 LEP certification.

Documentation: Shot reports for Hydrotests 6125 and 3612

Related Prior Year Target Performance: FY 2004: **R** FY 2003: **NA** FY 2002: **NA**

G **Achieve 95 percent of baseline for obtaining plutonium experimental data on the Joint Actinide Shock Physics Experimental Research (JASPER) facility. (NA GG 1.28.05)**

Commentary: Reduced cost and increased productivity for a significant experimental tool was achieved.

Documentation: Memorandum from LLNL.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

FY 05	FY 04	FY 03	FY 02
G	G	NA	NA

Program Goal: Engineering Campaign Provide validated models and simulation tools to improve surety technologies, radiation hardened capabilities; microsystems and microtechnologies production; component and material lifetime assessments; and predictive aging models and surveillance diagnostics. (NA GG 1.29)

Commentary: During FY 2005, the Engineering Campaign exceeded one target and fully met the other four targets. The significance of this is that the program continues to provide validated engineering sciences tools, including surveillance and surety improvements, for use by customers in the Nuclear weapons complex, critical in the absence of underground weapon testing.

FY 2005 Annual Targets

G **Complete 50 percent (cumulative) of the Microsystems and Engineering Sciences Applications (MESA) facility project, while maintaining a Cost Performance Index of 0.9-1.15. (NA GG 1.29.01)**

Commentary: By August 30, 2005, the project reported 65 percent completion against the cumulative annual target of 50 percent (increase of 8 percent over actual FY 2004). Cumulative Cost Performance Index has been maintained within targeted limits. This achievement is important because construction of this facility is critical to improving the use of microsystems and microtechnologies in nuclear weapons.

Documentation: Monthly project reports and DOE Project & Reporting System (PARS)

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

G **Complete 60 percent progress (cumulative) towards developing all improved surety improvements for the Life Extension Programs (LEPs) having Phase 6.3 beginning in FY 2010 or later. (NA GG 1.29.02)**

Commentary: The program fully met its target of cumulative 60 percent of progress in surety features as all FY 2005 milestones for the Enhanced Surety Subprogram were met that directly supported attaining this performance metric. This achievement is important because new direct initiation technology was developed and a preliminary design review was conducted. In addition, new integrated security features that are less sensitive to evolving unauthorized use threats were demonstrated in a simulated environment.

Documentation: NA-10 Milestone Reporting Tool (MRT) reports and quarterly Defense Surety Committee presentations and documents.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

Program Goal: Engineering Campaign (con't)

G **Deliver 24 percent (cumulative) of lifetime assessment, predictive aging models, and surveillance diagnostics. (NA GG 1.29.03)**

Commentary: The program delivered stockpile aging information for Annual Assessment Reports, provided an update on pit lifetime, demonstrated a pilot surveillance program for safety components, deployed new modeling and experimental capabilities for aging investigation, and completed component aging assessments to support the certification of the B61 Life Extension Program.

Documentation: NA-10 MRT reports and quarterly Enhanced Surveillance program review documents.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

G **Complete 55 percent (cumulative) of data sets used in developing tools and technologies to validate structural and thermal models and improve the capability for weapon assessment and qualification. (NA GG 1.29.04)**

Commentary: The program fully met its cumulative target of 55 percent of completed data sets as seven data sets were completed. This achievement is important because it provided critical input to assist in validating computational models to provide predictive capabilities.

Documentation: NA-10 MRT reports, annual program review documents, and various reports including Sandia Webfile Share 298932.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

G **Complete 24 percent of progress (cumulative) towards development of the technologies and qualification tools needed to meet nuclear survivability requirements for non-nuclear components in the Life Extension Programs (LEPs). (NA GG 1.29.05)**

Commentary: The program fully met the cumulative annual target of 24 percent of nuclear survivability tools by providing a modern shock and structural response model used to support W76-1 Life Extension Program and supporting analysis of 2-dimensional threat outputs for DoD and DOE customers. This achievement is important because it assures that nuclear weapons operate properly in high radiation fields similar to detonation.

Documentation: NA-10 MRT reports

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

FY 05	FY 04	FY 03	FY 02
Y	Y	NA	NA

Program Goal: Inertial Confinement Fusion Ignition And High Yield Campaign
Develop laboratory capabilities to create and measure extreme conditions of temperature, pressure, and radiation approaching those in a nuclear explosion and conduct weapons-related research in these environments. (NA GG 1.30)

Commentary: The Inertial Confinement Fusion Campaign underwent a review by the JASONS group and conducted a significant rebaselining in FY 2005 in response to a report to Congress. The significance is that the program still fully or partially met all targets, and remains on schedule for its priority effort - the first attempt to simulate ignition (simulated nuclear explosion fusion conditions) at the National Ignition Facility in FY 2010.

FY 2005 Annual Targets

G **Complete 68 percent of progress (cumulative) toward creating and measuring extreme conditions for the FY 2010 stockpile stewardship requirement. (NA GG 1.30.01)**

Commentary: The program completed 68 percent of progress (cumulative) toward creating and measuring extreme conditions for the FY 2010 stockpile stewardship requirement. This achievement is important because the properties of a specific weapons material was completed which could not be finished in FY 2004 because of a security and safety stand down. The program remains on track to complete this measure by FY 2010.

Documentation: NA-10 Milestone Reporting Tool (MRT) reports.

Related Prior Year Target Performance: FY 2004: Y FY 2003: NA FY 2002: NA

Program Goal: Inertial Confinement Fusion Ignition And High Yield Campaign (con't)

Y **Complete 67 percent of progress (cumulative) towards demonstrating ignition (simulating fusion conditions in a nuclear explosion) at the National Ignition Facility (NIF). (NA GG 1.30.02)**

Commentary: The program attained a cumulative 65 percent vs. target of 67 percent as four of seven supporting milestones planned for FY 2005 were completed. This achievement is important because the program remains on track to demonstrate first ignition (simulating fusion conditions in a nuclear explosion) at the NIF in 2010.

Plan of Action: Track the three delayed milestones to completion in FY 2006: (1) Resolve target positioning and fuel ice-layer quality issues and complete experiments by the second quarter of FY 2006; (2) Achieve safe operation of complex system to cool and handle deuterium-tritium fuel and complete experiments by the fourth quarter, FY 2006; and (3) Develop new window to observe shock behavior in implosions and demonstrate performance by the second quarter of FY 2006.

Documentation: NA-10 MRT reports.

Related Prior Year Target Performance: FY 2004: **Y** FY 2003: **NA** FY 2002: **NA**

G **Complete 81 percent (cumulative) of construction on the 192-laser beam National Ignition Facility (NIF). (NA GG 1.30.03)**

Commentary: The program fully met the target of 81 percent (increase of 5 percent) as substantial progress was achieved despite the impacts of funding reductions that resulted in layoffs of 300 staff and complete re-planning of the effort remaining to complete the project. This achievement is important because the project remains on target to complete NIF in time to support first ignition attempt in FY 2010.

Documentation: Earned value records for NIF Project and NDP maintained by NA-162 and NIF Project.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

Y **Complete 26 percent (cumulative) of equipment fabrication to support ignition experiments at National Ignition Facility (NIF). (NA GG 1.30.04)**

Commentary: The program attained a cumulative 21 percent vs. cumulative target of 26 percent as two of 3 supporting milestones were completed. With submission of the revised (June 2005) NIF Activation and Early Use Plan, the uncompleted milestone has been deleted since previously envisioned programmatic experimental operations are now precluded prior to NIF Project completion. The program remains on track to obtain necessary equipment to support NIF first ignition attempt in FY 2010.

Plan of Action: The schedule has been re-baselined. The annual targets for FY 2006 and later will be changed based on the plan's new ignition-related milestones.

Documentation: NA-10 MRT reports.

Related Prior Year Target Performance: FY 2004: **R** FY 2003: **NA** FY 2002: **NA**

Program Goal: Inertial Confinement Fusion Ignition And High Yield Campaign (con't)

G **Provide 500 days to conduct stockpile stewardship experiments (totaled for all Inertial Confinement Fusion facilities). (NA GG 1.30.05)**

Commentary: The program exceeded the target by providing 700 days of availability for ICF facilities (versus target of 500). This achievement is important because the program continues to provide key facilities to other programs in support of the science-based nuclear stockpile.

Documentation: NA-10 MRT reports for Z facility and Email records received from managers of Trident (LANL), OMEGA (LLE), and Nike (NRL) facilities.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

Y **Achieve an average of 9 hours per experiment required by the operational crew to prepare the Z facility for an experiment. (NA GG 1.30.06)**

Commentary: The program averaged 10.8 hours per experiment (20 percent more than the target amount of 9 hours) on an annual basis for preparation by Z operational crew. This measure is important as the program continues to reach for efficiencies in making facilities more productive.

Plan of Action: Implementation of additional procedures for radiation safety, beginning in FY 2004, increased time for experimental preparation. Reevaluate this measure in light of new required radiation safety procedures. Increase the target to 11 hours for FY 2006. Decrease target to 9 hours beginning in FY 2009.

Documentation: Spreadsheet maintained by Z Accelerator Systems Operations Manager that lists operational crew hours for each experimental shot.

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

FY 05	FY 04	FY 03	FY 02
Y	Y	NA	G

Program Goal: Advanced Simulation and Computing (ASC) Campaign Provide leading edge, high-end simulation computer capabilities to meet weapons assessment and certification requirements, including weapon codes, weapon science, platforms, and computer facilities. (NA GG 1.31)

Commentary: During FY 2005, the Advanced Simulation and Computing (ASC) Campaign met most of its targets, although technical delays in fully accepting a 100 teraflops capable platform prevented the program from fully meeting two of its five targets. The significance of its accomplishments means that the program continued to provide high-end computer simulation capabilities to support the science-based nuclear weapons complex on the road to predictive capability.

FY 2005 Annual Targets

G **Develop the initial baseline Primary Code for measuring peer-reviewed progress in completing milestones in the development and implementation of improved models and methods into integrated weapon codes and deployment to their users. (NA GG 1.31.01)**

Commentary: The program developed the initial baseline Primary Code for measuring peer-reviewed progress in completing milestones in the development and implementation of improved models and methods into integrated weapon codes and deployment to their users. This achievement is important because it continued maturing of the modern codes provided to users to support stockpile certification.

Documentation: Internal program reports.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

G **Analyze 38 percent (cumulative) of the 31 weapon system components (primary/secondary/ engineering system) using Advanced Simulation and Computing codes, as part of annual assessments and certifications. (NA GG 1.31.02)**

Commentary: The program analyzed 38 percent (cumulative) of the 31 weapon system components (primary/secondary/ engineering system) using Advanced Simulation and Computing codes, as part of annual assessments and certifications. This achievement is important because it furthers adoption of the modern codes for improved assessment and certification of the nuclear stockpile.

Documentation: Internal program reports.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

Program Goal: Advanced Simulation and Computing Campaign (con't)

Y **Attain maximum individual platform capacity of 100 TeraOPS (with 50 TB memory & 1 PetaByte (PB) storage). (NA GG 1.31.03)**

Commentary: The program did not met the target as the Purple platform, a 100 teraflops platform sited at Lawrence Livermore National Laboratory (LLNL), is not yet operational. The final FY 2005 peak performance without the Purple platform was 94 teraflops. This activity represents the further expansion of computing capability to support users in accordance with the 10-year vision.

Plan of Action: The hardware is at LLNL; acceptance testing will be conducted during the first quarter of FY 2006 with no problems anticipated. Target (acceptance testing progress) will be monitored until complete.

Documentation: Internal program reports.

Related Prior Year Target Performance: FY 2004: **R** FY 2003: **NA** FY 2002: **NA**

Y **Attain total production platform capacity of 172 TeraOPS. (NA GG 1.31.04)**

Commentary: The program attained a cumulative 163 teraflops, partially meting the cumulative capacity of 172 teraflops of total capability. This activity represents further expansion of computing capability to support users' IAW 10-year vision.

Plan of Action: The additional hardware (Purple platform, a 100 teraflops platform) is at LLNL; acceptance testing will be conducted during the first quarter of FY 2006 with no problems anticipated. Target (acceptance testing progress) will be monitored until complete.

Documentation: DP Milestone Reporting Tool, Program Reports, and Quarterly Performance Report Briefs and Program Technical Review Briefs.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

G **Attain average cost of $5.70M per teraflops for delivering, operating, and managing all Stockpile Stewardship Program (SSP) production systems. (NA GG 1.31.05)**

Commentary: Even with the delay of the Advanced Simulation and Computing Purple platform (see NA GG 1.31.3), the efficiency measure was met. Platform capability delivery and maintenance is becoming more efficient.

Documentation: Program analysis based on availability and cost data.

Related Prior Year Target Performance: FY 2004: **Y** FY 2003: **NA** FY 2002: **NA**

FY 05	FY 04	FY 03	FY 02
G	Y	NA	NA

Program Goal: Pit Manufacturing and Certification Campaign Restore the capability and some limited capacity to manufacture pits of all types required by the nuclear weapons stockpile and plan for a long-term pit manufacturing facility to support the enduring stockpile. (NA GG 1.32)

Commentary: During FY 2005, the Pit Campaign fully met or exceeded all five targets. This is significant because the program remains on schedule to efficiently restore the nation's pit production and certification capability for the nuclear weapons stockpile.

FY 2005 Annual Targets

G **Complete 20 percent (cumulative) of major milestone toward restoration of manufacturing capability for all pit types in the enduring stockpile. (NA GG 1.32.02)**

Commentary: One element involving testing of the tilt-pour furnace had to be delayed because of the LLNL Superblock stand-down and this has impacted plutonium process development work. However, sufficient additional progress was made in other areas to meet the 20 percent goal. Significant progress was made this year toward restoring the capability to manufacture all pit (nuclear weapon trigger) types by FY 2009.

Documentation: NA-10 Milestone Reporting Tool (MRT) reports.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

G **Complete 50 percent (cumulative) of major milestones completed toward FY 2007 W88 Pit Certification. (NA GG 1.32.03)**

Commentary: The program completed 50 percent (cumulative) of major milestones completed toward FY 2007 W88 Pit Certification. This achievement is important because LANL completed the FY 2005 Level 2 milestone for the revised Pit Manufacturing and Certification Project Implementation Plan, maintaining progress towards completing W88 Pit Certification in FY 2007.

Documentation: NA-10 MRT reports.

Related Prior Year Target Performance: FY 2004: R FY 2003: NA FY 2002: NA

G **Complete 35 percent (cumulative) percentage of major milestones toward completion of the Modern Pit Facility (MPF), by Critical Decision (CD) Phase One. (NA GG 1.32.04)**

Commentary: The program maintained progress towards rebaselined CD-1 schedule, ultimately leading to an MPF to support the stockpile.

Documentation: Monthly project reports and NA-10 MRT reports.

Related Prior Year Target Performance: FY 2004: Y FY 2003: NA FY 2002: NA

Program Goal: Pit Manufacturing and Certification Campaign (con't)

G **Complete 70 percent (cumulative) of major Nevada Test Site (NTS) milestones toward execution of Los Alamos National Laboratory (LANL) major subcritical experiment (SCE) activities in support of Major Assembly Release (MAR) for W88 warhead using LANL-manufactured W88 pits. (NA GG 1.32.05)**

Commentary: The program exceeded the cumulative target of 70 percent by achieving 80 percent. In FY 2005, LANL rebaselined the Pit Certification Plan and accelerated NTS work supporting this target. Exceeding the FY 2005 target facilitates accomplishment of 2 remaining major subcritical experiments planned for the first and second quarters of FY 2006 at the NTS, and supports issuing the MAR for the W88 warhead with a LANL-manufactured pit (nuclear weapon trigger) in FY 2007.

Documentation: Monthly earned value reports from Bechtel project manager.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

G **Complete 30 percent (cumulative) of major milestones toward establishing a limited capability of 10 W88 pits/year at Los Alamos National Laboratory (LANL). (NA GG 1.32.06)**

Commentary: The program fully met the cumulative target of 30 percent of the effort to support 10 pits per year capacity by the end of FY 2007. This achievement establishes interim limited capability to manufacture pits (nuclear weapon trigger) in support of stockpile requirements.

Documentation: NA-10 MRT (PMCIPP milestones) reports.

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

FY 05	FY 04	FY 03	FY 02
G	Y	NA	NA

Program Goal: Readiness Campaign Develop or reestablish new manufacturing processes and technologies for qualifying weapon components for reuse. (NA GG 1.33)

Commentary: During FY 2005, the Readiness Campaign fully met all four targets. This is significant because the program continues to provide weapons stockpile customers with new or improved replacement manufacturing processes and technologies, and, in the case of Tritium, the replacement of a critical capability missing for many years.

FY 2005 Annual Targets

G **Complete 32 percent (cumulative) of the major technology development milestones through advanced design and production technology (ADAPT), including model-based manufacturing, enterprise integration, and process development, resulting in enabling technologies for Directed Stockpile Work and Readiness in Technical Base and Facilities. (NA GG 1.33.01)**

Commentary: The completion of 8 of the 8 major deliverable milestones supporting this target resulted in development of new and replacement technologies needed to support the enduring stockpile and the life extension programs and to improve the flexibility and efficiency of the Complex.

Documentation: Site reporting to subprogram manager and NA-10 Milestone Reporting Tool (MRT) reports.

Related Prior Year Target Performance: FY 2004: NA FY 2003: NA FY 2002: NA

G **Complete 22 percent (cumulative) of the major manufacturing process efficiencies by high explosives and weapon operations, stockpile readiness, and nonnuclear readiness to support stockpile production and Life Extension Program (LEP) requirements. (NA GG 1.33.02)**

Commentary: A baseline change shifted some work between FY 2005 and FY 2006, but the initial target was attained. This achievement represents the planned deployment of new and replacement capabilities necessary to support the enduring stockpile and the life extension programs.

Documentation: Site reporting to subprogram manager and NA-10 MRT reports.

Related Prior Year Target Performance: FY 2004: Y FY 2003: NA FY 2002: NA

G **Irradiate 240 (cumulative) Tritium-Producing Burnable Absorber Rods in Watts Bar reactor. (NA GG 1.33.03)**

Commentary: The program fully met the cumulative target of 240 irradiated rods, and work has begun toward irradiating the next 240 rods. This achievement is important because it is the first time the Nation has produced new tritium (a critical ingredient to maintain the nuclear stockpile) in over a decade; a critical restoration of capability.

Documentation: Site reporting to subprogram manager and NA-10 MRT reports.

Related Prior Year Target Performance: FY 2004: NA FY 2003: NA FY 2002: NA

Program Goal: Readiness Campaign (con't)

G **Complete 87 percent (cumulative) of Tritium Extraction Facility (TEF) project, while maintaining a Cost Performance Index of 0.9-1.15. (NA GG 1.33.05)**

Commentary: The facility is in its start-up phase and on schedule to meet its CD-4 date. This achievement is important because it provides the capability to extract new tritium (a critical ingredient to maintain the nuclear stockpile) from the production rods is on track to meet its FY 2007 completion date.

Documentation: Construction project reporting and NA-10 MRT reports.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

FY 05	FY 04	FY 03	FY 02
G	Y	NA	NA

Program Goal: Readiness in Technical Base and Facilities – Operations and Maintenance Operate and maintain NNSA program facilities in a safe, secure, efficient, reliable and compliant condition including facility operating costs (e.g. utilities, equipment, facility personnel, training, and salaries); facility and equipment maintenance costs (staff, tools, and replacement parts); and environmental, safety, and health costs. (NA GG 1.34)

Commentary: During FY 2005, the Readiness in Technical Base and Facilities (RTBF) O&M Program exceeded all three targets. This is significant because the program continues to operate and maintain facilities in a superior and efficient manner so as to provide the required infrastructure for the nuclear weapons complex in a high state of availability to support Stockpile Stewardship goals, while improving maintenance contributions.

FY 2005 Annual Targets

G **Assure that mission-essential facilities are available on 90 percent of scheduled days. (NA GG 1.34.01)**

Commentary: NNSA RTBF facilities were available 98.8 percent of scheduled days. Facility availability supports program needs; no programmatic milestones were missed in FY 2005 due to facility availability.

Documentation: Reports-based Spreadsheet - facility availability for RTBF sites and detailed site reports.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

G **Limit the Number of Reportable Accidents per 200,000 hours of work to less than 6.4. (NA GG 1.34.02)**

Commentary: Based on FY 2005 site safety data, NNSA operations and construction activities achieved a reportable accidents rate of 1.9 per 200,000 work hours. This average is well below Bureau of Labor standards, as well as DOE's FY 2000-2004 average of 2.1 accidents per 200,000 work hours.

Documentation: Reports-based Spreadsheet - site safety for RTBF sites and detailed site reports.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

Program Goal: Readiness in Technical Base and Facilities – Operations and Maintenance (con't)

G **Achieve an annual NNSA complex-wide aggregate Facility Condition Index (FCI) of less than 9 percent, as measured by deferred maintenance per replacement plant value, for all mission-essential facilities and infrastructure. (NA GG 1.34.03)**

Commentary: NNSA exceeded the FY 2005 annual target of a NNSA complex-wide FCI of 9 percent for all mission-essential facilities and infrastructure. The end-of-year NNSA complex-wide aggregate FCI for mission-essential facilities and infrastructure as reported by sites in their Final FY 2006 Ten-Year Comprehensive Site Plans is 7.4 percent. This accomplishment is significant because it demonstrates NNSA's continued progress towards achieving industry standards for the condition of its facilities and infrastructure.

Documentation: Reports-based Spreadsheet - FCI for RTBF sites and site-specific FY2006 Ten-Year Comprehensive Site Plans, Attachment F-2.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

FY 05	FY 04	FY 03	FY 02
R	Y	G	G

Program Goal: Readiness in Technical Base and Facilities – Construction Plan, prioritize, and construct state-of-the-art facilities, infrastructure, and scientific tools (that are not directly attributable to DSW or a campaign) within approved baseline cost and schedule. (NA GG 1.35)

Commentary: The RTBF Construction Program's lower target ratings are a result of the small number of facilities included in the targets, local costs beyond the program's control, and short construction delays that caused rescheduling into early FY 2006. The significance of the effort is that RTBF Construction continues to provide timely state-of-the-art facility construction support to the nuclear weapons complex.

FY 2005 Annual Targets

R **Initiate designs, attain Critical Decision (CD) Phase One, or cancel for cause, 3 projects. (NA GG 1.35.01)**

Commentary: The program completed CD-1 for 2 of 3 scheduled construction projects. CD-1 was delayed for the Pantex Component Evaluation Facility (CEF) while project is being evaluated for different funding profile. Two of the three projects directly contribute to the strategic goal of replacing obsolete facilities. The third project, CEF, will be executed to avoid programmatic impacts - its unanticipated delay is attributed to a lack of funding that caused the schedule to stretch.

Plan of Action: CD-3 for the Building 12-064 Production Cells Upgrade has been rescheduled for the first quarter of FY 2006. The project will be monitored until CD-3 is attained.

Documentation: Monthly project reports and DOE PARS.

Related Prior Year Target Performance: FY 2004: R FY 2003: NA FY 2002: NA

Program Goal: Readiness in Technical Base and Facilities – Construction (con't)

R **Initiate construction (CD-3) on, or cancel for cause, 4 projects. (NA GG 1.35.02)**

Commentary: The program completed CD-3 for 3 of 4 scheduled construction projects. CD-3 was issued for LANL Chemistry and Metallurgy Research Building Replacement (CMRR) Light Lab & Office Bldg and LANL Nat'l Security Sciences Bldg; while CD-3 for the Pantex Bldg Building 12-064 Production Cells Upgrade was delayed because of the adverse local procurement climate. Significance of Accomplishment: Two projects met CD-3 as scheduled. A third, CMRR, will meet CD-3 in the first days of FY 2006. The fourth, Pantex 12-64, affected by unexpected rising local construction costs, will revise its execution strategy to avoid any impacts to programs.

Plan of Action: CD-3 for the Building 12-064 Production Cells Upgrade has been rescheduled for the first quarter of FY 2006. The project will be monitored until CD-3 is attained.

Documentation: Monthly project reports and DOE PARS.

Related Prior Year Target Performance: FY 2004: **Y** FY 2003: **NA** FY 2002: **NA**

R **Completed or attained CD-4 within approved scope, cost, and schedule baselines, for 9 projects. (NA GG 1.35.03)**

Commentary: The program completed CD-4 for 5 construction projects. CD-4 was obtained for the Stockpile Management Restructuring Initiative (SMRI) Project, at Y-12; while CD-4 was delayed for the SNL Test Capabilities Revitalization (TCR), SNL Weapons Evaluation Test Laboratory (WETL), and Y-12 Purification Facility. Five projects successfully attained CD-4. Two others, TCR and Y-12 Purification Facility, will attain CD-4 in FY06/1Q, the former being completed six weeks late due to a site-wide electrical safety shutdown. One other, WETL, has completed construction but awaits clearing up minor sensor issues that cannot be resolved until the third quarter of FY 2006.

Plan of Action: Actual FY05 Appropriation and FY06 and out-year OMB Passback caused a January 2005 revision in construction schedule. The revised FY05 Target for CD-4 is actually 8. Of these, CD-4 for the TCR will slip to the first quarter of FY 2006 and SNL WETL to the third quarter of FY 2006. The Y-12 Purification Facility will slip to FY 2006. Projects will be monitored until CD-4 is attained.

Documentation: Monthly project reports and DOE PARS.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

FY 05	FY 04	FY 03	FY 02
Y	Y	NA	NA

Program Goal: Secure Transportation Asset Safely and securely transport nuclear weapons, weapons components, and special nuclear materials to meet projected Department of Energy (DOE), Department of Defense (DoD), and other customer requirements. (NA GG 1.36)

Commentary: The STA Program fully met three of its five targets; increased mission and security requirements limited completion of two other agent-related targets. The significance of this is that the program continues to provide critical safe and secure transportation to DOE, DoD, and other customers for nuclear material while it right-sizes equipment and Federal Agents and improves shipment efficiencies, to better meet customer requirements.

FY 2005 Annual Targets

G **Complete 105 secure convoys completed. (NA GG 1.36.01)**

Commentary: The program exceeded the annual target and completed 106 convoys vs. target of 105 (increase of 15 from FY 2004) during FY 2005. The program is on track to increase mission capacity to 135 convoys per year, by 2008, thus increasing customer support.

Documentation: Shipment reports and data from TRIPS, a program convoy-tracking database.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

G **Achieve 33 Safeguard Transporters (SGTs) in operation. (NA GG 1.36.03)**

Commentary: For FY 2005, the program fully achieved the cumulative annual target of 33 (increase of 2 for the year). This achievement is important because it provides transportation trailers that have much greater safety and security features to prevent against accidents or threats.

Documentation: Quality Assurance Inspection program documents from Kansas City Site Office.

Related Prior Year Target Performance: FY 2004: **Y** FY 2003: **NA** FY 2002: **NA**

Y **Maintain 335 Federal Agents at the end of the year. (NA GG 1.36.04)**

Commentary: Federal Agent end-strength was 318 vs. target of 335. The cause was the high number of agent losses and one-time number of transfers to non-agent positions. The net Federal Agent strength increased by 40 in FY 2005 and the program remains on track to staff-up to the level of 420 agents by FY 2008 to meet expanding transportation demand and Design Basis Threat requirements.

Plan of Action: Continue recruitment efforts and achieve at least 30 candidates per training class for the next three years.

Documentation: Program Federal Personnel database.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

Program Goal: Secure Transportation Asset (con't)

G **Ship 87 percent of requested packages of nuclear weapons, components, and material. (NA GG 1.36.05)**

Commentary: The program the program exceeded the annual target and completed 98 percent of requested packages vs. the target of 87 percent (increase of 2 percent). The effort benefited from the addition of an agent unit (#4) and focus on other high-package shipments because of deferred Pantex workload. The program increased mission capacity to better meet customer requirements.

Documentation: Data from Travel Reporting and Information Processing System (TRIPS), program transportation shipping requests, and STA Advisory Board meeting minutes.

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

Y **Limit annual average scheduled overtime hours to 900 overtime hours per agent. (NA GG 1.36.06)**

Commentary: The average annual agent overtime was 937 hours vs. a target of 900. Principal causes were fewer agents than forecasted, workload/numbers of convoys, and long segments of some convoys. The program has reduced average overtime per agent from an FY 2002 baseline of 1,300 hours. Less overtime enhances agent alertness and increases safety.

Plan of Action: Planned workload and security requirements forecast increased agent overtime. The program will manage overtime at the 1,000 hours per agent level for the immediate future.

Documentation: Internal program overtime database.

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

FY 05	FY 04	FY 03	FY 02
Y	Y	NA	NA

Program Goal: Nuclear Weapons Incident Response Respond to and mitigate nuclear and radiological incidents worldwide. (NA GG 1.37)

Commentary: FY 2005 cost and schedule targets were met. This achievement is significant because it indicates the program is capable of responding to and mitigating nuclear and radiological incidents worldwide.

FY 2005 Annual Targets

G **Ensure 3 (cumulative) of the 8 designated Radiological Assistance Program (RAP) Regions have implemented a maritime radiation search program. (NA GG 1.37.01)**

Commentary: FY 2005 target was exceeded as all eight RAP Regions have maritime radiation search qualified teams (well above the target of three). The planned deployment of maritime search equipment to the appropriate RAP regions is complete. The program has validated these capabilities are in place through joint training exercises with local US Coast Guard units in the Regions. This achievement is significant because it is aimed at improving the nation's capability to detect the illicit introduction of nuclear and radiological weapons/material into the United States via various waterways.

Documentation: Emergency Response Database System (ERDS).

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

G **Ensure 60 percent (cumulative) of identified Radiological Assistance Program (RAP) team members (80 eligible out of 216) qualified to provide technical assistance in managing and executing the response to a radiological or nuclear event. (NA GG 1.37.02)**

Commentary: FY 2005 target was fully met as 60 percent of the RAP team members have been qualified through the Albuquerque RAP Training Emergency Response training course and Nevada Test Site annual exercise. These team members are now able to provide technical assistance in managing, and executing a Consequence Management response to any radiological or nuclear event. This achievement is significant because it allows RAP teams to manage the response to the aftermath of a radiological or nuclear event without having to wait for another team to arrive on the scene.

Documentation: Emergency Response Database System (ERDS).

Related Prior Year Target Performance: FY 2004: Y FY 2003: NA FY 2002: NA

Program Goal: Nuclear Weapons Incident Response (con't)

Y **Conduct 9 "no-notice" emergency management exercises. (NA GG 1.37.03)**

Commentary: FY 2005 target not met. Eight no-notice exercises were completed (nine were planned). This achievement is significant because it validates under real conditions that the human and equipment elements of the US response team are prepared to effectively address an event should it occur.

Plan of Action: After consideration of the increased number of real-world events affecting DOE/NNSA and the improved conduct of annual site/facility emergency exercises, the program director has determined that emergency management readiness can be satisfactorily verified with the conduct of 8 no-notice exercises. The reduction to 8 no-notice exercises will save costs and allow more effective planning and scheduling of no-notice exercises.

Documentation: Emergency Response Database System (ERDS).

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

G **Maintain an annual Triage capability of 300 calls per year, which could be resolved to provide remote isotopic identification of an unknown item and determine if a threat exists. (NA GG 1.37.04)**

Commentary: During FY 2005, Triage received 20 actual calls, conducted 77 drills, 22 Courtesy checks (customer validating their procedures and processes to interface with Triage), and 33 communications checks, for a total of 152 callouts. All were resolved successfully. The callouts this year involved multiple Spectra files, some of them "batched" together in one callout instead of multiple calls to simulate higher volumes in order to validate a call rate that extrapolates to 300-plus calls per year. This achievement is significant as it provides a new and growing capability to remotely determine the identity of an unknown source and to validate if a credible threat exists. This alone, saves on false deployments of the response teams.

Documentation: Emergency Response Database System (ERDS).

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

G **Achieve 30 percent (cumulative) of emergency response equipment replaced, upgraded, or re-certified. (NA GG 1.37.05)**

Commentary: FY 2005 target was exceeded as 100 percent of all essential equipment has undergone annual or more frequent maintenance. Emergency response equipment to be replaced, upgraded, or re-certified have been entered into a central database and are being tracked for compliance to maintenance schedules. This achievement is significant because it ensures that all response equipment is ready for use.

Documentation: Emergency Response Database System (ERDS).

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

Program Goal: Nuclear Weapons Incident Response (con't)

G **Ensure that the Emergency Communications Network is operationally ready to exchange classified and unclassified data, video, and voice information between headquarters and 32 remote locations 95 percent of the time. (NA GG 1.37.06)**

Commentary: The FY 2005 target of 95 percent was exceeded as communication network readiness was 99.88 percent. The program tests the Emergency Communications Network on a weekly basis. This achievement is significant because the test program assures the Department that it has a reliable emergency communications network and trained operators to manage it.

Documentation: Emergency Response Database System (ERDS).

Related Prior Year Target Performance: FY 2004: NA FY 2003: NA FY 2002: NA

FY 05	FY 04	FY 03	FY 02
G	G	G	G

Program Goal: Facilities and Infrastructure Recapitalization Program (FIRP)
Restore, rebuild and revitalize the physical infrastructure of the nuclear weapons complex. (NA GG 1.38)

Commentary: All FIRP FY 2005 annual targets were exceeded based on approved Work Authorizations, monthly project reports and Site's Final FY 2006 Ten-Year Comprehensive Site Plans. This accomplishment demonstrates that FIRP is making significant progress to restore, rebuild, and revitalize the physical infrastructure of the nuclear weapons complex sites, resulting in improved facilities conditions and increased operational efficiency and effectiveness.

FY 2005 Annual Targets

G **Issue authorizations to start work to achieve a reduction in NNSA's deferred maintenance of $154.75 million, and stabilize deferred maintenance by the end of FY 2005. (NA GG 1.38.01)**

Commentary: FIRP exceeded the FY 2005 annual target to fund $154.75M of the FY 2003 deferred maintenance baseline for elimination. This accomplishment demonstrates that FIRP is making significant progress to restore, rebuild, and revitalize the physical infrastructure of the nuclear weapons complex sites, resulting in improved facilities conditions and increased operational efficiency and effectiveness. Based on approved FY 2005 Work Authorizations, over 130 projects were issued funds to execute work that will reduce NNSA's deferred maintenance by $178.2M. NNSA deferred maintenance has been stabilized.

Documentation: FY 2005 FIRP Work Authorizations

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

Program Goal: Facilities and Infrastructure Recapitalization Program (con't)

G **Issue authorizations to start work to achieve a 350,000 gsf reduction to the NNSA footprint. (NA GG 1.38.02)**

Commentary: FIRP exceeded the FY 2005 annual target to fund 350,000 gsf for elimination. Based on approved FY 2005 Work Authorizations, over 20 disposition projects were issued funds to execute work that will reduce NNSA's footprint by over 514,000 gsf. This accomplishment is significant because it reduces long-term costs and risks and results in a smaller NNSA weapons complex footprint.

Documentation: FY 2005 FIRP Work Authorizations

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

G **Achieve an annual NNSA complex-wide aggregate Facility Condition Index (FCI) of 9 percent, as measured by deferred maintenance per replacement plant value, for all mission-essential facilities and infrastructure. (NA GG 1.38.04)**

Commentary: NNSA exceeded the FY 2005 annual target of a NNSA complex-wide FCI of 9 percent for all mission-essential facilities and infrastructure at the eight weapons complex sites. End of year NNSA complex-wide aggregate FCI for mission-essential facilities and infrastructure as reported by sites in their Final FY 2006 Ten-Year Comprehensive Site Plans is 7.4 percent. This accomplishment is significant because it demonstrates NNSA's continued progress towards achieving industry standards for the condition of its facilities and infrastructure.

Documentation: NNSA Sites' Ten-Year Comprehensive Site Plans

Related Prior Year Target Performance: FY 2004: NA FY 2003: NA FY 2002: NA

FY 05	FY 04	FY 03	FY 02
Y	Y	Y	G

Program Goal: Safeguards and Security Protect NNSA personnel, facilities, nuclear weapons, and information from a full spectrum of threats, most notably from terrorism, which has become of paramount concern post September 11, 2001. (NA GG 1.39)

Commentary: While cost performance was on target, FY 2005 performance fell just short of their annual targets. However, significant progress was made in improving physical security, implementing new DBT requirements and reducing the amount of classified removable electronic media. This achievement is significant because it protects NNSA personnel, facilities, nuclear weapons, and information from a full spectrum of threats.

FY 2005 Annual Targets

G **Ensure that 65 percent (cumulative) of Physical Security reviews conducted by the Office of Independent Oversight and Performance Assurance (OA) at NNSA sites result in the rating of "effective" (based on last OA review at each site over 6 physical security topical areas). (NA GG 1.39.02)**

Commentary: FY 2005 target was exceeded as OA rated 72 percent of NNSA's Physical Security topical areas as "effective" (target was 65 percent). During FY 2005, OA conducted reviews at Nevada Site Office, Sandia National Laboratories/Sandia Site Office, and Y-12. This achievement is important because it helps to ensure that proper security is maintained at NNSA sites.

Documentation: Latest OA inspection report for each NNSA site

Related Prior Year Target Performance: FY 2004: R FY 2003: NA FY 2002: NA

R **Ensure that 80 percent (cumulative) of Cyber Security reviews conducted by the Office of Independent Oversight Performance Assurance (OA) at NNSA sites result in the rating of "effective" (based on last OA review at each site over 2 Cyber Security topical areas). (NA GG 1.39.03)**

Commentary: FY 2005 target was not met as OA rated only 57 percent of NNSA's Cyber Security topical areas as "effective" (target was 80 percent). During FY 2005, OA conducted only 2 reviews of NNSA Cyber Security areas (the classified programs at Sandia and Y-12) and they have suspended any further reviews until January 2006. This achievement is important because it helps to ensure the proper security is maintained at NNSA sites.

Plan of Action: Work with NNSA sites to implement corrective action plans to fix deficiencies, work with OA to schedule follow-on inspections in a timely manner to independently evaluate corrective actions, and rebaseline out-year targets to realistically reflect the time needed to increase this performance to at least 90 percent.

Documentation: Latest OA inspection report for each NNSA site

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

Program Goal: Safeguards and Security (con't)

G **Ensure that 90 percent of Office of Independent Oversight and Performance Assurance (OA), Inspector General, and General Accountability Office findings have an approved corrective action plans in place within 60 days from receipt of final report. (NA GG 1.39.04)**

Commentary: FY 2005 target was exceeded as corrective action plans are in place within 60 days from receipt of final report for 100 percent of OA findings (target was 90 percent). Corrective Action Plans were identified for Sandia and Y-12. OA review at Nevada requiring Corrective Action Plans are not due until the first quarter of FY 2006 since the report was issued in September 2005. This achievement is important because it helps to ensure the proper security is maintained at NNSA sites.

Documentation: NNSA Site Corrective Action Plans

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

Y **Complete the processing needed to grant Q Security Clearance for federal and contractor employees in the NNSA complex, other than headquarters (does not include days for OPM or FBI background checks), in 85 annual average calendar days per applicant. (NA GG 1.39.06)**

Commentary: FY 2005 target was not met as it took an average of 100 days to complete the NNSA processing needed to grant Q Security Clearances (target was 85 days not including days for Office of Personnel Management (OPM) or the Federal Bureau of Investigation to conduct background checks). Since establishing this target the OPM has doubled its per month return rate on investigations which has led to a backlog in NNSA processing clearances. This achievement is important because it helps to expedite the hiring process for NNSA employees requiring security clearances.

Plan of Action: The NNSA Service Center has instituted a series of focused efforts in staffing, training, and processing. The Service Center has attained full staffing and is working to have them fully trained by December 2005. A Quality Assurance program was created to focus on procedures, which are being incorporated in the Standard Operating Procedures, and to re-evaluate the current target for processing clearances. During the last two months of FY 2005 corrective actions positively impacted the average processing times, which decreased to 76 days in August and 79 days in September. Evidence of these results is documented in the monthly Service Center Clearance Status Reports.

Documentation: Monthly Service Center Clearance Status Reports.

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

Program Goal: Safeguards and Security (con't)

G **Complete 12.5 percent (cumulative) progress, measured in milestones completed, towards implementation of the May 2003 Design Basis Threat (DBT) policy at NNSA sites. (NA GG 1.39.07)**

Commentary: FY 2005 target was exceeded as a cumulative 78 percent of the milestones towards implementation of the May 2003 Design Basis Threat (DBT) policy at NNSA sites have been completed (target was 12.5 percent). All sites have completed several milestones, and expect to be in compliance with the May 2003 DBT by the end of FY 2006 as scheduled. This achievement is important because it helps to strengthen the security at NNSA sites against a post-9/11 threat environment.

Documentation: May 2003 DBT Implementation Plans and progress reports from each NNSA site.

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

G **Destroy 10 percent (cumulative) of pieces of accountable classified removable electronic media (CREM) at Los Alamos National Laboratory (LANL). (NA GG 1.39.08)**

Commentary: FY 2005 target was exceeded as cumulative 21.69 percent of the pieces of accountable classified removable electronic media (CREM) at Los Alamos National Laboratories (LANL) were destroyed (target was 10 percent). This achievement is important because it helps to strengthen security by destroying no longer needed classified data.

Documentation: LANL CREM reports

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

FY 05	FY 04	FY 03	FY 02
G	Y	NA	NA

Program Goal: Office of the Administrator (Shared Between General Goal One and Two) Create a well-managed, inclusive, responsive, and accountable organization through the strategic management of human capital; enhanced cost-effective utilization of information technology; and greater integration of budget and performance data. (NA GG 1/2.50)

Commentary: Cost and schedule performance met or exceeded planned baselines. This achievement is significant because it provided the human, logistical, and IT resources needed to achieve the Department's Defense Strategic Goal.

FY 2005 Annual Targets

G **Fill 96 percent of approved Managed Staffing Plan positions. (NA GG 1/2.50.01)**

Commentary: FY 2005 target was exceeded as 98 percent of all approved Managed Staffing Plan positions were filled by year-end (versus a target of 96 percent). This achievement is important because timely and adequate staffing of positions helps the Department achieve its Defense Strategic Goal.

Documentation: NNSA Staffing Summary prepared by NNSA HR

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

G **Achieve an average NNSA Program score of 75 percent (cumulative) on the OMB Program Assessment Rating Tool (PART). (NA GG 1/2.50.03)**

Commentary: FY 2005 target of 75 percent was exceeded as the cumulative PART score for all 15 NNSA programs reviewed to date is 83.7 percent (however, 6 of these scores are final draft scores for the FY 2007 budget and still could change slightly). This accomplishment is significant because it indicates NNSA progress in fully achieving the President's Management Agenda goals for budget performance integration and achieving results.

Documentation: OMB Program Assessment Rating Tool (PART)

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

G **Consolidate 50 percent of NNSA federal offices to the NNSA Information Technology (IT) Common Environment/Service Center. (NA GG 1/2.50.06)**

Commentary: FY 2005 target was fully met as 50 percent of the NNSA sites have been consolidated to the NNSA IT common environment. This achievement is important because operating in a common IT environment allows for an annual cost savings (gross) of $11M against an operating base of $34M.

Documentation: Project Management Lifecycle Document

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

General Goal 2: Nuclear Nonproliferation

General Goal 2: Nuclear Nonproliferation

Provide technical leadership to limit or prevent the spread of materials, technology, and expertise relating to weapons of mass destruction; advance the technologies to detect the proliferation of weapons of mass destruction worldwide; and eliminate or secure inventories of surplus materials and infrastructure usable for nuclear weapons.

FY 2005 Annual Performance Targets

Green *(100%)*	Yellow *(=80%, <100%)*	Red *(<80%)*	Undetermined
18	8	4	0

FY 2005 Program Costs ($ in Millions): $1,191

FY 05	FY 04	FY 03	FY 02
Y	Y	G	G

Program Goal: Nonproliferation and Verification Research and Development
Develop new technologies to improve U.S. capabilities to detect and monitor nuclear weapons production, proliferation, and testing worldwide. (NA GG 2.40)

Commentary: FY 2005 overall performance is green as cost and schedule targets were met and/or exceeded. New technologies were developed to improve U.S. capabilities to detect and monitor nuclear weapons production, proliferation, and testing worldwide.

FY 2005 Annual Targets

G **Develop and evaluate 8 advanced radiation and remote sensing technologies through customized tests that challenge and characterize their operating parameters. (NA GG 2.40.01)**

Commentary: FY 2005 target was exceeded as 10 technologies were developed and tested (target was 8), one of which was an unscheduled test of remote sensing equipment for detecting hazardous chemicals in support of Hurricane Katrina efforts. This achievement is important because it improves U.S. capability to detect the early stages of nuclear weapon programs.

Documentation: Direct communication and briefings from laboratory points of contact. Quarterly reports and project reports.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

Y **Deliver 8 advanced technologies and operational systems (e.g. satellite payloads and seismic stations calibration data sets) to U.S. national security users, improving the accuracy and sensitivity of nuclear weapons test monitoring. (NA GG 2.40.02)**

Commentary: Only 7 of 8 planned technologies and operational systems were delivered (5 satellite and 2 seismic data sets). Due to an industry-wide recall of a class of space-qualified electronic hardware, one planned satellite payload was delayed until FY2006. This achievement is important because it improves the accuracy and sensitivity of monitoring for nuclear detonations.

Plan of Action: The delayed space payload delivery scheduled for FY 2005 will take place in the first quarter of FY 2006.

Program Goal: Nonproliferation and Verification Research and Development (con't)

Documentation: GBD #70 Consent-to-Ship memorandum, 5 Aug 2005 Letter from the Associate Deputy Administrator of the Office of Nonproliferation Research and Development to the Space Missile Center.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

G **Complete 70 percent of research projects for which an independent R&D merit assessment has been completed during the second year of effort, and again within each subsequent three year period to assess scientific quality and mission relevance. (NA GG 2.40.03)**

Commentary: FY 2005 target was exceeded as 100 percent of the required reviews were completed (target was 705). During FY 2005, all 53 required projects were reviewed. This achievement provided for an assessment of the scientific quality and mission relevance of projects.

Documentation: Individual Independent Review summaries for each reviewed project.

Related Prior Year Target Performance: FY 2004: Y FY 2003: NA FY 2002: NA

G **Present 200 professional papers/exchanges, each representing Science and Technology knowledge and U.S. leadership in program areas. (NA GG 2.40.04)**

Commentary: FY 2005 target was exceeded as 283 papers/exchanges were presented (target was 200). This achievement is important because it provides program credibility and recognized acceptance.

Documentation: Project quarterly reports that list publications for each project.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

Program Goal: Highly Enriched Uranium (HEU) Transparency Implementation

Develop and implement transparency measures which increase confidence that Low Enriched Uranium (LEU) purchased under the 1993 U.S./Russian HEU Purchase Agreement is derived from HEU extracted from dismantled Russian nuclear weapons and eliminated from Russian stockpiles. (NA GG 2.41)

FY 05	FY 04	FY 03	FY 02
Y	G	NA	NA

Commentary: FY 2005 overall performance fully met planned cost and schedule baselines by completing the scheduled monitoring visits and monitoring analysis. This achievement is important because it provides verification that the blend down of HEU to LEU is performed, which, once completed, means that the material can no longer be used for weapons development.

Program Goal: Highly Enriched Uranium Transparency Implementation (con't)

FY 2005 Annual Targets

G **Achieve 95 percent of operation of three Blend-Down Monitoring Systems (BDMS) during the HEU blend-down process (UEIP, ECP, the Siberian Chemical Combine [SchE] in Seversk). (NA GG 2.41.01)**

Commentary: FY 2005 target was exceeded as the annual operation was 100 percent (versus a target of 95 percent). This achievement is important because it helps to monitor the conversion of Russian HEU to LEU.

Documentation: BDMS Data Analysis Report

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

Y **Conduct 100 percent of 24 allowed Special Monitoring Visits (SMVs) to four Russian facilities HEU-to-LEU processing facilities to monitor conversion of 30 MT per year of HEU to LEU. (NA GG 2.41.02)**

Commentary: FY 2005 target was not met as only 92 percent of planned 100 percent of 24 SMVs were completed. Two SMVs have been rescheduled out of FY05 and into the first quarter of FY 2006 to perform maintenance activities on the Blend-Down Monitoring Systems during a scheduled plant outage at the Ural Electrochemical Integrated Plant. The impact was minimal as the U.S. was able to maintain oversight of all the HEU downblended during FY 2005. This achievement is important because it helps to monitor the conversion of Russian HEU to LEU.

Plan of Action: The two SMVs have been rescheduled to be completed in first quarter of FY 2006. For CY 2005, the total number of trips will be 24.

Documentation: Metric Report and Status Report

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

G **Staff the on-site Transparency Monitoring Office (TMO) at the Ural Electrochemical Integrated Plant during 76 percent of plant's operating schedule. (NA GG 2.41.03)**

Commentary: FY 2005 target was exceeded as monitoring activities provided 80 percent coverage of plant operations (target was 76 percent). This achievement is important because it helps to monitor the conversion of Russian HEU to LEU.

Documentation: FY 2005 Transparency Monitoring Office (TMO) Staffing and Plant Operations Days.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

FY 05	FY 04	FY 03	FY 02
Y	R	NA	NA

Program Goal: Elimination of Weapons Grade Plutonium Production Reactors
Reduce the threat of nuclear terrorism by facilitating shutdown of the three remaining weapons-grade plutonium production reactors in the Russian Federation through: (1) construction of a new fossil-fuel (coal) plant at Zheleznogorsk; and (2) refurbishment of an existing fossil-fuel (coal) power plant at Seversk. (NA GG 2.42)

Commentary: Although both Seversk and Zheleznogorsk are slightly behind schedule, all major critical path milestones have been met, and both projects are on schedule for their respective completion dates within budget. This achievement is important because progress on completing replacement energy capacity is directly tied to shutdown milestones of the three plutonium production reactors. The FY 2006 Seversk target will be updated to match the final CD-2 approved baseline.

FY 2005 Annual Targets

Y **Achieve 32 percent progress (cumulative) towards refurbishing a fossil plant in Seversk, facilitating shut down of two weapons-grade plutonium production reactors. (NA GG 2.42.01)**

Commentary: FY 2005 target was not met as the Seversk project achieved 25.7 percent completion versus a target of 32 precent. The Seversk project has completed $79.9M Budgeted Cost of Work Performed (BCWP), or 25.7 percent, of the total $311M BCWS (Budgeted Cost of Work Scheduled). Progress is slightly behind the 28 percent FY 2005 target needed to meet the December 2008 completion schedule. An adjustment occurred from the Critical Decision (CD)-1 approved target of 32 percent to the 28 percent upon the CD-2 approval decision from the Deputy Secretary (final cost and schedule baselines). However, the CD-2 approval was in November 2004, which was too late to change the FY05 target. This achievement is important because progress on completing Seversk replacement energy capacity is directly tied to shutdown milestones of two of the three plutonium production reactors.

Plan of Action: Update the FY06 Seversk target to match the final CD-2 approved baseline.

Documentation: The Seversk monthly progress report for September.

Related Prior Year Target Performance: FY 2004: Y FY 2003: NA FY 2002: NA

G **Achieve 4.8 percent progress (cumulative) towards constructing a fossil plant in Zheleznogorsk, facilitating shut down of one weapons-grade plutonium production reactor. (NA GG 2.42.02)**

Commentary: FY 2005 target was exceeded as the project achieved 4.9 percent completion versus a target of 4.8 percent. The Zheleznogorsk project has completed $28.2M BCWP (4.9 percent) based on a pre-baseline total project cost (TPC) of $570.5 M. However, the FY 2005 target of 4.8 percent is insufficient to achieve the December 2010 completion. The Zheleznogorsk FY 2006 target will be adjusted appropriately. This achievement is important because progress on completing the Zheleznogorsk replacement energy capacity is directly tied to shutdown milestones of one of the three plutonium production reactors.

Documentation: The Zheleznogorsk monthly progress report for September.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

Program Goal: Elimination of Weapons Grade Plutonium Production Reactors (con't)

G **Achieve 1.0 against the Seversk Cost Performance Index (cumulative actual costs per budgeted cost of work performed at Seversk). (NA GG 2.42.05)**

Commentary: FY 2005 target was exceeded as the Seversk project achieved a favorable cost performance rating of 0.99 (Actual Cost of Work Performed is $79.3M versus the Budgeted Cost of Work Performed of $79.9M). This plant would replace two Russian reactors that produce weapons-grade plutonium. This achievement is important because progress on completing replacement energy capacity is directly tied to shutdown milestones of the three plutonium production reactors.

Documentation: The Seversk monthly progress report for September.

Related Prior Year Target Performance: FY 2004: NA FY 2003: NA FY 2002: NA

FY 05	FY 04	FY 03	FY 02
G	R	Y	G

Program Goal: Nonproliferation and International Security Strengthen the global nuclear nonproliferation regime by 1) limiting sensitive exports; 2) supporting international safeguards; and 3) providing policy recommendations and technical and policy advice to develop and implement U.S. policy (treaties, agreements, and mutual inspections). (NA GG 2.44)

Commentary: FY 2005 overall performance was excellent as both cost and schedule performance met or exceeded planned baselines. This achievement is significant because it helps to strengthen international nuclear nonproliferation controls by limiting sensitive exports, supporting international safeguards, and providing policy and technical support to U.S. nonproliferation policy formulation and implementation.

FY 2005 Annual Targets

G **Train 5,500 (cumulative) international and domestic experts in nuclear nonproliferation since 9/11/01 (e.g. International Atomic Energy Agency inspectors, export control officers, etc.). (NA GG 2.44.02)**

Commentary: FY 2005 target exceeded as the cumulative number of international and domestic nuclear experts trained was 5,798. This achievement is important because it trains and educates nuclear nonproliferation experts through the attendance of training classes, workshops, seminars, and/or technical interchange meetings.

Documentation: Attendance sign in sheets, training records and participant lists all collected and documented by monthly lab reports, periodic trip reports, and tracking systems such as the International Nonproliferation Export Control Program's AAR system.

Related Prior Year Target Performance: FY 2004: NA FY 2003: NA FY 2002: NA

Program Goal: Nonproliferation and International Security (con't)

G **Achieve an annual average cost per review of nuclear, chemical and biological export license applications of $450. (NA GG 2.44.3)**

Commentary: FY 2005 target of $450 per export license review was exceeded as the 6,000 reviews were performed at an average cost of $400 per review. This achievement is important because it controls sensitive technology and helps reduce the threat of WMD proliferation.

Documentation: PINS database of total license reviews (technical and end-user at the DOE National Laboratories i.e. ANL, LANL, LLNL, ORNL, PNNL, SNL, SRNL and one production site, KCP) performed divided by total funds expended for the reviews.

Related Prior Year Target Performance: FY 2004: NA FY 2003: NA FY 2002: NA

FY 05	FY 04	FY 03	FY 02
Y	G	G	G

Program Goal: Global Initiatives for Proliferation Prevention (GIPP) Prevent adverse migration of weapons of mass destruction expertise by engaging weapons experts in peaceful efforts and by helping to downsize the Russian nuclear weapons complex. (NA GG 2.45)

Commentary: Cost Performance and Schedule Performance for the fiscal year were both fully within tolerances. This achievement is important for several reasons: (1) engaged weapon scientists and technicians in peaceful technology development employment; (2) prevented the migrations of scientist to work for rouge countries; and (3) provided jobs to stabilize the nuclear cities of the Former Soviet Union and generated an economic base for commercial businesses.

FY 2005 Annual Targets

Y **Engage 8,200 former Soviet weapons scientists, engineers, and technicians. (NA GG 2.45.01)**

Commentary: FY 2005 target was not met as only 7,775 of the planned 8,200 former Soviet weapons experts were engaged in non-defense activities. During the reporting period, important new project work was put on hold because of a fundamental disagreement with the Russian Federation over legal liability provisions contained in a necessary government-level international agreement authorizing work at sensitive Russian nuclear sites. This achievement is important because it keeps Russian WMD experts employed in peaceful pursuits thus reducing the threat of WMD proliferation.

Plan of Action: A proposed new agreement text has been submitted to the State Department to obtain negotiating authority under the provisions of OMB Circular 175. The new agreement is designed to permit expanded work at closed nuclear cities in Russia, thereby increasing the number of former Soviet weapon scientists who can be engaged in civilian GIPP activities through GIPP projects. Alternate mechanisms are also under consideration.

Documentation: IPP Lab Reports; IPP database; NCI database.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: G

Program Goal: Global Initiatives for Proliferation Prevention (con't)

G **Achieve 42 (cumulative) technologies commercialized or businesses created/expanded. (NA GG 2.45.02)**

Commentary: The program commercialized 26 technologies, and created or expanded 16 businesses for a total of 42 technologies commercialized or businesses created/expanded. This achievement is important because it provides peaceful employment opportunities for Russian WMD experts thus reducing the threat of WMD proliferation.

Documentation: USIC Company Survey; NCI Lab Survey; NCI MIS database.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

G **Obtain 65 percent of non-U.S. Government project funding contributions. (NA GG 2.45.04)**

Commentary: In FY 2005, fully met target of obtaining 65 percent in non-U.S. Government project funding contributions. These contributions take the form of matching resources from U.S. industry partners and co-funding from Russian government and non-government sources. This achievement is significant because funding from other countries and the private sector augment USG resources thus creating conditions for self-sustaining employment opportunities.

Documentation: USIC Company survey; CRADAs; NCI Lab Survey; NCI MIS database.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

FY 05	FY 04	FY 03	FY 02
Y	Y	Y	G

Program Goal: International Nuclear Materials Protection and Cooperation Prevent nuclear terrorism by working in Russia and other regions of concern to (1) secure and eliminate vulnerable nuclear weapons and weapons-usable material and (2) install detection equipment at border crossings and Megaports to prevent and detect the illicit transfer of nuclear material. (NA GG 2.46)

Commentary: While the program met targets for securing Russian Navy and Strategic Rocket Forces warhead sites, schedules slipped for securing weapons-usable nuclear material, converting HEU to LEU, and completing installations at Second Line of Defense sites. These achievements are important because they helped reduce nuclear proliferation by (1) securing vulnerable nuclear weapons and weapons-usable material, including an additional 9 warhead sites which represent 3 percent of the estimated 600 MTs of weapons-usable material, (2) down blending an additional 1.5 MTs of HEU to LEU, and (3) preventing and detecting the illicit transfer of nuclear material through the installation of radiation detection at an additional 21 sites (including 2 Megaports).

FY 2005 Annual Targets

G **Secure 37 (cumulative) Russian Navy warhead sites. (NA GG 2.46.01)**

Commentary: The program secured 37 (cumulative) Russian Navy warhead sites. This achievement is important because it secures nuclear weapon sites that were vulnerable to theft.

Documentation: Contract deliverable documents including photos, periodic site visits, and assurance reports.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

G **Secure 10 (cumulative) Russian Strategic Rocket Forces and 12th Main Directorate sites. (NA GG 2.46.02)**

Commentary: The program secured 10 (cumulative) Russian Strategic Rocket Forces and 12th Main Directorate sites. This achievement is important because it secures nuclear weapon sites that were vulnerable to theft.

Documentation: Contract deliverable documents including photos, periodic site visits, and assurance reports.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

Program Goal: International Nuclear Materials Protection and Cooperation (con't)

R **Secure 37 percent of 600 MTs of weapons-usable nuclear material. (NA GG 2.46.03)**

Commentary: The FY 2005 target was not met as only 29 percent of the weapons usable nuclear material was secured (versus target of 37 percent) because of inadequate access to the Russian Serial Production Enterprises. This achievement is important because it secures weapons-usable nuclear materials that were vulnerable to theft.

Plan of Action: A joint U.S.-Russian team is working on approaches to provide the U.S. with acceptable access to the remaining Russian buildings that contain nuclear material. As part of the this approach, the program will also be transitioning to a slightly revised measure aimed at tracking the cumulative number of Russian nuclear material buildings secured. This new measure will more accurately capture the overall threat reduction impact, and it will be better for assessing the program's progress towards achieving its long-term goal.

Documentation: Completed task order deliverables, site visits, and assurance reports.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

Y **Convert 7.5 (cumulative) metric tons of Highly Enriched Uranium to Low Enriched Uranium. (NA GG 2.46.04)**

Commentary: FY 2005 target not met, as only a cumulative total of 7.1 MTs of HEU to LEU (versus target of 7.5) was converted because of insufficient amount of feed material made available for down blending at Dmitrovgrad.

Plan of Action: Work with Rosatom and Dmitrovgrad to increase the amount of feed material available for down blending. It is possible that not meeting the current down blending goals in FY 2005 could result in a modest impact to the projected material conversion end date. However, there are several other variables that will also impact that date, such as availability of material to down blend, changing capacity of down blending at sites, and funding availability. Indeed, it is possible that conversion rates may exceed the projected goals in the outyears to compensate for a near-term shortfall.

Documentation: Material Consolidation and Conversion project and Downblending Conversion Summary.

Related Prior Year Target Performance: FY 2004: **Y** FY 2003: **NA** FY 2002: **NA**

Program Goal: International Nuclear Materials Protection and Cooperation (con't)

Y **Achieve 98 (cumulative) Second Line of Defense (SLD) sites with nuclear detection equipment installed, along with 5 (cumulative) Megaports completed. (NA GG 2.46.06)**

Commentary: FY 2005 target not met; the program completed a cumulative total of 87 sites (including 4 Megaports) versus the target of 98 sites (including 5 Megaports) because of a shortfall in core sites due to delays in agreement completion and a subcontracting delay at one Megaport. This achievement is important because it helps detect the clandestine smuggling of nuclear materials through ports and across borders.

Plan of Action: One Megaport not completed in FY 2005 will be completed in early first quarter FY 2006. For the core program, the schedule for completing several countries will be extended. Signed agreements with Slovenia and Ukraine. Work is beginning at sites in these countries. Signing with Turkey and Georgia is expected this year.

Documentation: All sites can be verified as completed via the documentation of an Acceptance Testing Report.

Related Prior Year Target Performance: FY 2004: Y FY 2003: NA FY 2002: NA

G **Achieve $5.3M as the cumulative cost per metric ton to complete rapid security upgrades on Russian weapons-usable nuclear material. (NA GG 2.46.07)**

Commentary: Target was fully met by achieving a cumulative cost of $5.3M per metric ton to complete rapid upgrades on Russian weapons-usable nuclear material. This achievement is important because it secures weapons-usable nuclear materials in the most cost-effective manner possible.

Documentation: Completed task order deliverables, site visits, and assurance reports.

Related Prior Year Target Performance: FY 2004: NA FY 2003: NA FY 2002: NA

FY 05	FY 04	FY 03	FY 02
R	Y	R	NA

Program Goal: Fissile Material Disposition Eliminate surplus Russian plutonium and surplus U.S. plutonium and Highly Enriched Uranium (HEU). (NA GG 2.47)

Commentary: The HEU disposition program fully met the FY 2005 target by downblending or shipping for downblending 82 MT toward the Department's total goal of 174 MT. However, the U.S. and Russian plutonium disposition programs were further delayed in the 4th quarter because of continued uncertainties relating to the Russian program. Completion of successful negotiations with Russia on the liability issue, receipt of Nuclear Regulatory Commission construction authorization for the U.S. MOX facility, and fabrication and irradiation of MOX fuel lead assemblies are contributing to the Department's goal of disposing of 34 MT of surplus weapons-grade plutonium in the United States and Russia. This achievement is important because it prevents nuclear proliferation by eliminating surplus stockpiles of Russian plutonium and U.S. plutonium and HEU.

FY 2005 Annual Targets

R **Complete 100 percent (cumulative) of the detailed design, and 25 percent (cumulative) of site preparation for the Pit Disassembly and Conversion Facility (PDCF). (NA GG 2.47.01)**

Commentary: FY 2005 target was not met as only 87 percent of the detailed design was completed (versus a target of 100 percent plus 25 percent site preparation) because of an underestimation by the contractor of the amount of remaining design work. This achievement is important because it prevents nuclear proliferation by eliminating the pits (triggers) of nuclear weapons.

Plan of Action: The program has initiated a comprehensive review of remaining design work and is re-baselining the cost and schedule of PDCF. Site preparation activities will begin in October 2005.

Documentation: Results reported in monthly Earned Value Management System reports prepared by design contractor.

Related Prior Year Target Performance: FY 2004: Y FY 2003: NA FY 2002: NA

Y **Complete 100 percent (cumulative) of the detailed design, and begin site preparation and procurement for the mixed oxide (MOX) Fuel Fabrication Facility. (NA GG 2.47.02)**

Commentary: FY 2005 target was not met as only 80 percent of the detailed design was completed (versus a target of 100 percent plus begin site preparation), because unanticipated complexities in adapting a French fuel fabrication facility design to meet U.S. requirements for handling weapons-grade plutonium. This resulted in an underestimation by the contractor of the design scope. This achievement is important because it prevents nuclear proliferation by eliminating surplus stockpiles of U.S. plutonium.

Plan of Action: The program has re-baselined the cost and schedule of the U.S. MOX project and will complete documentation for CD-2 validation by the second quarter of FY 2006. Site preparation activities will begin in the first quarter of FY2006.

Documentation: Results reported in monthly Earned Value Management System reports prepared by design contractor.

Related Prior Year Target Performance: FY 2004: Y FY 2003: NA FY 2002: NA

Program Goal: Fissile Material Disposition (con't)

G **Downblend, or ship for downblending, 82 MT (cumulative) of surplus U.S. HEU. (NA GG 2.47.03)**

Commentary: Downblended or shipped for downblending 82 MT (cumulative) of HEU. This achievement is important because it prevents nuclear proliferation by eliminating surplus stockpiles of U.S. HEU.

Documentation: Results reported in monthly receipt reports provided by BWX Technologies Nuclear Products Division, Nuclear Fuel Services, and SRS.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

R **Complete 100 percent (cumulative) of the detailed design, begin site preparation, construction and long-lead procurement for the Russian MOX Fuel Fabrication Facility. (NA GG 2.47.05)**

Commentary: FY 2005 target was not met as only 15 percent of the detailed design of the Russian MOX facility was completed (versus a target of 100 percent). An ongoing Russian Government technical review of its program delayed progress because of an inability to transfer French MOX technology to Russia and a lack of signature on the liability protocol. Site preparation activities for the Russian MOX facility have begun.

Plan of Action: After the liability protocol is signed and the Russian Government completes its technical review, the United States, France, and Russia will begin discussions on an agreement to transfer MOX technology to Russia.

Documentation: Results reported in monthly contractor progress reports.

Related Prior Year Target Performance: FY 2004: **R** FY 2003: **NA** FY 2002: **NA**

FY 05	FY 04	FY 03	FY 02
Y	NA	NA	NA

Program Goal: Global Threat Reduction Initiative (GTRI) Remove and/or secure high-risk nuclear and radiological materials and equipment around the world that pose a potential threat to the United States and the international community. (NA GG 2.64)

Commentary: Met year-end goals in three of five program elements. Two program elements did not meet year-end goals due to lack of foreign government agreement to return fresh fuel and delays in the planned spent fuel shipment from Uzbekistan. Working to engage foreign governments to accomplish the work in FY 2006. Significance of Accomplishment: (1) Reduced the threat posed by unsecured radioactive sources by recovering 1,660 domestic sealed sources and upgrading the security of 102 sites worldwide; and (2) Reduced the threat posed by vulnerable nuclear material that terrorists could use to make a nuclear weapon by returning 449 U.S.-origin research reactor spent fuel assemblies and 23 kilograms of Russian-origin fresh HEU.

FY 2005 Annual Targets

Y **Convert 44 (cumulative) targeted research/test reactors from HEU to LEU fuel. (NA GG 2.64.01)**

Commentary: FY 2005 target was not met as only 40 of 44 planned reactors have been converted to LEU. This is because (1) HFR Petten in the Netherlands was delayed due to regulatory approval; (2) the repatriation of the HEU fresh fuel for the VR-1 at the Czech Technical University was delayed until late September 2005 and the LEU fresh fuel will be delivered in October 2005; and (3) delivery of LEU fresh fuel from Russia to two Libyan reactors was delayed. This achievement is important because it prevents nuclear proliferation by converting research reactors from HEU to LEU fuel.

Plan of Action: Expecting two additional conversions in October 2005 for a total of 42 - HFR Petten in the Netherlands and the VR-1 at the Czech Technical University. The two Libyan reactors (IRT-4M and critical assembly) will convert after Russia delivers the LEU fresh fuel in December 2005. The critical assembly will convert by the end of December 2005, and the reactor will convert in summer 2006. Initiated work to complete conversions of several research reactors in FY 2006, including two U.S. university reactors that will be converted by summer 2006.

Documentation: Annual letter from ANL.

Related Prior Year Target Performance: FY 2004: **Y** FY 2003: **NA** FY 2002: **NA**

Program Goal: Global Threat Reduction Initiative (GTRI) (con't)

R **Repatriate 175 kilograms (cumulative) of HEU fresh and/or spent fuel from Soviet-supplied research reactors to Russia. (NA GG 2.64.02)**

Commentary: FY 2005 target was not met as only 122 of 175 kilograms were repatriated because (1) repatriation of HEU fresh fuel from Libya did not occur as planned due to delay by Russia to deliver LEU fresh fuel; (2) agreement was not reached with Ukraine to repatriate HEU fresh fuel from Sevastopol site in Ukraine; and (3) Russian environmental review of the 'Unified Project' to accept the pilot shipment of HEU spent fuel from Uzbekistan has been a long process causing the shipment date to slip into FY 2006. Repatriation during FY 2005 was completed for 6 kg of fresh HEU from the Czech Republic in December 2004, 3 kg of fresh HEU from Latvia in May, and 14 kg of fresh HEU from Czech Technical University in September. This achievement is important because it prevents nuclear proliferation by removing Russian origin HEU fuel from vulnerable locations worldwide.

Plan of Action: Agreed with Russia on the schedule for future shipments as part of Bratislava Presidential Summit. Russia plans to complete the one-day operation to repatriate HEU fresh fuel from and deliver LEU fresh fuel to Libya in December 2005. The first of four shipments of HEU spent fuel from Uzbekistan will occur in November/December 2005, as approval of the 'Unified Project' is expected in October. Continuing to push for fresh fuel shipments from Belarus, Kazakhstan and Ukraine.

Documentation: Official NNSA Press Releases and other news reports.

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

G **Return 6,693 fuel assemblies (cumulative) containing U.S.-origin spent fuel from foreign research reactors. (NA GG 2.64.03)**

Commentary: FY 2005 target was exceeded as 6,783 fuel assemblies were returned (versus a target of 6,693). This achievement is significant for two reasons: (1) the return of U.S.-origin spent nuclear fuel from foreign research reactors reduces worldwide stocks of weapons-usable material, thus reducing the potential threat that terrorists could use this material in a nuclear weapon or improvised nuclear device; and (2) returning more fuel assemblies than was anticipated brings the program closer to meeting its objectives and is significant, especially since, in 2004, the original program deadline was extended for ten years to 2019.

Documentation: FRR SNF Scorecard (Lab report issued after receipt of shipments)

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

G **Recover 11,500 (cumulative) U.S. excess sealed sources. (NA GG 2.64.04)**

Commentary: FY 2005 target was exceeded as a cumulative 11,682 sources were recovered (versus a target of 11,500). This achievement is significant in that the total cumulative number of sources recovered is enough material to make more than 1,200 dirty bombs.

Documentation: Bi-weekly recovery report.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

Program Goal: Global Threat Reduction Initiative (GTRI) (con't)

G **Secure 174 high priority sites (cumulative) with vulnerable radiological material. (NA GG 2.64.05)**

Commentary: FY 2005 target was exceeded as upgrades have been completed at 234 sites (versus a target of 174). This accomplishment is important because it significantly reduced the amount of at-risk radiological material that otherwise could have been used to fabricate a RDD or dirty bomb.

Documentation: Monthly report from the International Radiological Threat Reduction integrated contract database.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

General Goal 3: Naval Reactors

General Goal 3: Naval Reactors

Provide the Navy with safe, militarily effective nuclear propulsion plants and ensure their continued safe and reliable operation.

FY 2005 Annual Performance Targets

Green *(100%)*	Yellow *(=80%, <100%)*	Red *(<80%)*	Undetermined
5	0	0	0

FY 2005 Program Costs ($ in Millions): $810

FY 05	FY 04	FY 03	FY 02
G	G	G	G

Program Goal: Naval Reactors Provide the Navy with safe, militarily effective nuclear propulsion plants and ensure their continued safe and reliable operation.

Commentary: During FY 2005 Naval Reactors exceeded two targets and fully met the other three targets. All schedules were met on time and cost performance was within established tolerances. These accomplishments are significant because they enable Naval Reactors to continue to provide the United States Navy with safe, reliable, and militarily effective nuclear propulsion plants.

FY 2005 Annual Targets

G **Achieve 132 million cumulative miles of safe reactor plant operation supporting National security requirements (NA GG 3.49.01)**

Commentary: FY 2005 target was exceeded as data collected to date states that 133,419,169 cumulative miles have been safely steamed (target was 132,000,000), with over two million miles steamed in FY 2005.

Documentation: Results are documented in the "Commissioned Ship Operating Reports."

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

G **Achieve 90 percent annual utilization factor for operation of test reactor plants. (NA GG 3.49.02)**

Commentary: FY 2005 target was exceeded as a utilization factor of 94% for operation of test reactor plants was achieved. This achievement is important because it represents a cost-effective way of training Naval nuclear plant operators.

Documentation: Results are documented in the "Prototype Annual Activity Schedule."

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

Program Goal: Naval Reactors (con't)

G **Achieve 23 percent cumulative of core conceptual design for the Transformational Technology Core (TTC) reactor plant, and initiate final design and development work. (NA GG 3.49.03)**

Commentary: FY 2005 target was fully met by completing a cumulative 23% of the TTC reactor plant design including key milestones such as the selection of a fuel system, completion of Control Drive Mechanism extended use evaluation, and completion of VIRGINIA Class Heavy Equipment design evaluation. This achievement is important because it provides the Navy with next-generation propulsion plant technology which is safer, more silent, more reliable, and more cost-effective in producing more power with less fuel and waste.

Documentation: Results are documented in the TTC Planning Estimates.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

G **Complete 70 pe rcent (cumulative) of the next-generation aircraft carrier reactor plant design. (NA GG 3.49.04)**

Commentary: FY 2005 target was fully met by completing 70% of the next-generation aircraft carrier reactor plant design including key milestones such as the completion of the head area mockup demonstration, the completion of the Engineered Safeguards System closure and internal piping Design Justification Report, and the development of the final thermal capability strategy and plant parameter adjusted set-point strategy. This achievement is important because it provides the Navy with next-generation propulsion plant technology which is safer, more silent, more reliable, and more cost-effective in producing more power with less fuel and waste.

Documentation: Results are documented in the Carrier Vessel, Nuclear (CVN) 21 Propulsion Plant Planning Estimate.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **G**

G **Achieve 100 percent of annual program operations with no adverse impact on human health or the quality of the environment. (NA GG 3.49.07)**

Commentary: FY 2005 target was fully met based on a review of radiation monitoring results through September 30, 2005. This review confirms that no personnel at the Primes have exceeded five rem exposure this fiscal year.

Documentation: Results are documented in Report RA-05, Occupational Safety, Health and Occupational Medicine Report, the Annual Environmental Monitoring Report, and Report NT-05-3, Occupational Radiation Exposure for NR Department of Energy Facilities.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **G**

General Goal 4: Energy Security

General Goal 4: Energy Security

Improve energy security by developing technologies that foster a diverse supply of reliable, affordable, and environmentally sound energy by providing for reliable delivery of energy, guarding against energy emergencies, exploring advanced technologies that make a fundamental improvement in our mix of energy options, and improving energy efficiency.

FY 2005 Annual Performance Targets

Green *(100%)*	Yellow *(=80%, <100%)*	Red *(<80%)*	Undetermined
93	7	5	0

FY 2005 Program Costs ($ in Millions): $6,617

FY 05	FY 04	FY 03	FY 02
Y	Y	G	G

Program Goal: Hydrogen/Fuel Cell Develop hydrogen production, storage, and delivery technologies to the point that they are cost and performance competitive and are being used by the Nation's transportation, energy, and power industries. (EE GG 4.01)

Commentary: Meeting technology and cost targets in the concurrent technology paths of hydrogen production and delivery, storage, and fuel cell power are key contributions to meeting the Hydrogen Posture Plan goals. This will ultimately provide the nation with hydrogen from diverse domestic resources, and enable its use in a clean, safe, reliable, and affordable manner in fue1 cell vehicles and stationary power applications.

FY 2005 Annual Targets

G **Complete testing of 10,000 psi hydrogen storage tanks, evaluating against the 2007 target of 1.5 kWh/kg (4.5 weight percent) and identify approaches to meet the cost target of $6/KWh. (EE GG 4.01.01)**

Commentary: The Program fabricated and tested high pressure storage tanks showing potential to achieve 1.75 kWh/kg (exceeding the 2007 target), and approaches such as localized reinforcement techniques and optimum fiber placement were identified as fabrication options with potential to meet the cost target of $6/KWh. These achievements are a key step in demonstrating tanks as a viable hydrogen storage technology for the transition phase of the hydrogen economy- which would aid in the reduction of U.S consumption of petroleum.

Documentation: Quarterly technical progress reports from Quantum and LLNL.

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

G **Complete the research for a distributed natural gas-to-hydrogen production and dispensing system that can produce 5,000 psi hydrogen with good potential for achieving the cost target of $3.00/gge. (EE GG 4.01.02)**

Commentary: Research was completed on three natural gas-to-hydrogen development projects: "Autothermal Cyclic Reforming Based Hydrogen Generating & Dispensing System" (General Electric), "Development of a Natural Gas-to-Hydrogen Fueling Station" (Gas Technology Institute), and "Development of a Turn-Key Hydrogen Refueling System" (Air Products and Chemicals). These activities support the Program's 2015 goal of $2 to $3/gallon gasoline equivalent independent of production pathway.

Program Goal: Hydrogen/Fuel Cell (con't)

Documentation: Quarterly technical progress reports.

Related Prior Year Target Performance: FY 2004: R FY 2003: NA FY 2002: NA

G **Identify materials with the potential to meet 2010 targets of 2.0 kWh/kg (6 weight percent), 1.5 kWh/L. (EE GG 4.01.03)**

Commentary: The Program identified several classes of materials that have the potential to meet the 2010 system targets, such as destabilized metal hydrides, a family of ethyl carbazole liquids, and aluminum hydride. These results are a key step towards meeting hydrogen storage targets for commercially viable hydrogen powered vehicles - accelerating the reduction in U.S. dependence on petroleum imports.

Documentation: Presentation of Hydrogen Storage Testing Workshop Findings at FreedomCAR Tech Team; quarterly technical progress and international conference proceedings.

G **Contribute proportionately to EERE's corporate goal of reducing corporate and program adjusted uncosted obligated balances to a range of 20-25 percent by reducing program annual adjusted uncosteds by 10 percent in 2005 relative to the Hydrogen/Fuel Cell Program FY 2004 end of year adjusted uncosted baseline ($29,283K) until the target range is met. (EE GG 4.01.04)**

Commentary: Meeting this target to reduce the Hydrogen/Fuel Cell Technologies Program's adjusted uncosted obligated balances to an appropriate level of 20-25 percent on an annual basis ensures enough available funding to avoid disruptions to the program's planned activities, while ensuring that the program's activities are contractually obligated and carried out in a timely manner. This helps ensure that the program is making progress to develop hydrogen production, storage, and delivery technologies to the point that they are cost and performance competitive and are being used by the Nation's transportation, energy, and power industries.

Documentation: DOE STARS Financial Database System Second September 30 Adjustment (10/13/2005).

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

Y **Complete validation of an energy station that can produce 5,000 psi hydrogen from natural gas for $3.60 per gallon of gasoline equivalent (including co-production of electricity), untaxed at the station with mature production volumes (e.g., 100 units/year). (EE GG 4.01.05)**

Commentary: All data for the hydrogen production from natural gas cost analysis has been generated, but the analysis was delayed into next fiscal year due to Air Products and Chemicals Inc. resources being moved to support Hurricane Katrina. This activity will demonstrate that co-production of hydrogen and electricity is cost effective and technically feasible to support the fuel demands of a hydrogen economy of the future.

Plan of Action: All data has been generated for the economic analysis and it is anticipated the analysis will be completed by the end of the first quarter of FY 2006.

Documentation: Quarterly technical progress reports.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

Program Goal: Hydrogen/Fuel Cell (con't)

G **Model cost of hydrogen produced from renewables and assess versus the target (2010 target of $2.85/gge (untaxed) at the station at 5000 psi). (EE GG 4.01.06)**

Commentary: Electrolyzer tests and price-modeling activities showed that hydrogen can be produced, compressed and stored from wind for $2.80/kg in the 2010 timeframe. This achievement is a key step toward demonstrating the viability of producing hydrogen and the critical technology of electrolysis to obtain cost effective hydrogen from renewables, to help reduce petroleum usage.

Documentation: Quarterly technical progress reports provided by the Golden Office and the National Energy Technology Laboratory

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

Y **Demonstrate Fuel Cell demonstration vehicles' durability, projected to 1,000 hours based on voltage measurements. (EE GG 4.01.10)**

Commentary: While fuel cell vehicle operational data was received from industry in FY 2005, the number of hours operated was insufficient to assess degradation and project fuel cell durability out to 1,000 hours due to a delay in the delivery of the fuel cell vehicles. Durability is a critical factor in the commercialization decision of hydrogen fuel cell vehicles, since fuel cell vehicles need to have a lifetime that competes with gasoline internal combustion engine vehicles (5,000 hours).

Plan of Action: DOE will work with its industry partners to collect the necessary hours of operating data during the first two quarters of FY 2006, so that projections of the fuel cell durability can be made by the end of second quarter of FY 2006.

Documentation: Quarterly technical progress reports.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

G **Reduce technology cost, through DOE-sponsored research, for a hydrogen-fueled 50kW fuel cell power system to $125/kW. (EE GG 4.01.11)**

Commentary: Based on a fuel cell system cost estimate performed by TIAX using DOE-sponsored research results, automotive fuel cell system technology cost was reduced from $275/kW in 2002 to approximately $120/kW in 2005 (at 500,000 units per year) for a hydrogen-fueled 50kW fuel cell power system. This accomplishment is an important step towards the 2015 target of $30/kW which is competitive with the cost of gasoline internal combustion engines.

Documentation: Quarterly technical progress reports.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **G**

Program Goal: Hydrogen/Fuel Cell (con't)

G **Achieve 32 percent efficiency at full power for a natural gas or propane fueled 5-250kW stationary fuel cell system. (EE GG 4.01.12)**

Commentary: The Hydrogen Technology Program achieved greater than 32 percent electrical efficiency at full power for a 5-250kW natural gas stationary fuel cell system by IdaTech in Bend, Oregon, a step toward the 2010 electrical efficiency target of 40 percent. This will allow use of hydrogen for electric power generation diversifying the grid and enhancing reliability.

Documentation: Quarterly technical progress reports.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **G**

FY 05	FY 04	FY 03	FY 02
Y	Y	G	Y

Program Goal: Vehicle Technologies Develop technologies that enable cars and trucks to become highly efficient, through improved power technologies and cleaner domestic fuels, and to be cost and performance competitive. (EE GG 4.02)

Commentary: Technical advances such as carbon fiber price reductions, vehicle combustion efficiency, reductions in parasitic loss, and reductions in battery costs demonstrate progress that will enable cars and trucks to become highly efficient by means of research and development on clean power technologies, improved domestic fuel specifications, and advanced power systems. These advances will address our most pressing national energy need - reducing oil dependence.

FY 2005 Annual Targets

G **Complete R&D on technologies, which, if implemented in high volume, could reduce the projected (i.e. modeled) bulk cost of automotive-grade carbon fiber to less than $4.50/pound. (EE GG 4.02.10)**

Commentary: The Vehicle Technologies Program was able to meet this target using microwave assisted plasma and microwave oxidation technologies at Oak Ridge National Laboratory. This achievement will enable cars and trucks to become more efficient and cost and performance competitive, and ultimately help reduce both energy use and greenhouse gas emissions.

Documentation: Progress reports, laboratory tests, and the use of a cost model.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **R**

Program Goal: Vehicle Technologies (con't)

G **Achieve brake thermal efficiencies of 39 percent for light vehicle combustion engines, and greater than 45 percent for heavy vehicle combustion engines, while meeting EPA 2007 emission standards (1.2 g/hp-hr NOx). (EE GG 4.02.11)**

Commentary: By achieving the targets for improved combustion efficiency, the Vehicle Technology Program has demonstrated a 30 percent improvement in light engine fuel-economy compared to engines in 2002 and a 12 percent improvement in heavy engine fuel-economy compared to 2002. This enables cars and trucks to become highly efficient through improved power technologies, and will lead to improved energy security by reducing dependence on oil.

Documentation: Progress reports and laboratory tests.

Related Prior Year Target Performance: FY 2004: Y FY 2003: G FY 2002: NA

Y **Contribute proportionately to EERE's corporate goal of reducing corporate and program adjusted uncosted obligated balances to a range of 20-25 percent by reducing program annual adjusted uncosteds by 10 percent in 2005 relative to the programs FY 2004 end-of-year adjusted uncosted baseline ($73,102K), until the target range is met. (EE GG 4.02.12)**

Commentary: The Freedom Car and Vehicle Technology Program's level of uncosted obligations was reduced by 8 percent from the previous year. This exceeds the appropriate range (i.e., 20-25 percent) which would avoid disruptions of activities, while ensuring that the program's major and critical activities to enable highly efficient cars and trucks are contractually obligated and carried out in a timely manner.

Plan of Action: The Program is actively working to ensure that the uncosted obligations level is reduced to the appropriate level (20-25 percent) through a variety of means including the obligation of funds early in the year, reviewing performers' cash flow to make appropriate adjustments in funding, and conducting monthly reviews with the Program Management Center and the national laboratories to assess and correct problem areas early in the year.

Documentation: DOE STARS Financial Database (10/18/2005).

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

Program Goal: Vehicle Technologies (con't)

G **Reduce parasitic energy loss to 25 percent of total engine output and reduce unloaded tractor-trailer weight to 22,000 pounds. (EE GG 4.02.13)**

Commentary: In completing this target, the Vehicle Technology Program demonstrated that implementing technology advancements (to reduce friction, improve engine lubrication and reduce aerodynamic losses) and utilizing better materials and designs (while maintaining strength) for tractor trailers, leads to improved operating efficiencies. Ultimately, manufacturers and consumers will be able to use these technologies to help the Nation reduce both energy use and greenhouse gas emissions thus improving energy security by dramatically reducing dependence on oil.

Documentation: Laboratory tests, over-the-road vehicle tests, and progress reports.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **G**

G **Reduce high power, 25kW, light vehicle, lithium ion battery cost to $900 per battery system. (EE GG 4.02.14)**

Commentary: In achieving this target, the Vehicles Technology Program was able to lower the projected system cost of a lithium ion battery system to $862.50 (or $34.50 per kilowatt). This in turn contributes to achieving the 2010 cost goal of $500 per 25kW battery system while meeting hybrid electric vehicle performance requirements.

Documentation: Award of contract, paper analysis, laboratory test evaluation, and the use of a cost model.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **G**

FY 05	FY 04	FY 03	FY 02
G	G	G	G

Program Goal: Solar Energy Improve performance of solar energy systems and reduce development, production, and installation costs to competitive levels. (EE GG 4.03)

Commentary: The increase in conversion efficiency of commercial production crystalline silicon photovotaic modules to 13.5 percent and thin-film photovoltaic (PV) modules to 11 percent maintains the program's technical progress. This will allow solar energy system prices to be reduced to help meet the critical national objectives of improving national energy security, providing for a cleaner environment, and ensuring continued economic growth and development.

FY 2005 Annual Targets

G **Achieve 5.0 cents per kilowatt-hour modeled cost of energy from solar water heater capable of operating in non-freezing climates. (EE GG 4.03.01)**

Commentary: By demonstrating 5.0 cents per kilowatt-hour modeled cost of energy from a solar water heater capable of operating in non-freezing climates, improved performance and cost efficiency of the technology was demonstrated. This will help in accelerating usage to make a significant contribution to a clean, reliable and flexible U.S. energy supply.

Documentation: National Renewable Energy Laboratory Technical Reports

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

G **Verify, using standard laboratory measurements, a conversion efficiency of 13.5 percent of U.S-made, commercial crystalline silicon PV modules. Production cost of such modules is expected to be $1.95 per Watt. (EE GG 4.03.02)**

Commentary: Achieving a commercial crystalline silicon PV module efficiency of 13.7 percent, with a modeled production cost of $1.95 per watt, demonstrates progress towards the 2010 goal of 20 percent conversion efficiency and a commercial production cost of $1.55 per watt. This would be a significant contribution to a clean, reliable and flexible U.S. energy supply.

Documentation: Standard quarterly laboratory reports from the PV Performance Characterization Group at the National Center for Photovoltaics (NCPV) at National Renewable Energy Laboratory.

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

Program Goal: Solar Energy (con't)

G **Contribute proportionately to EERE's corporate goal of reducing corporate and program adjusted uncosted obligated balances to a range of 20-25 percent by reducing program annual adjusted uncosteds by 10 percent in 2005 relative to the program FY 2004 end-of-year adjusted uncosted baseline ($19,342K), until the target range is met. (EE GG 4.03.03)**

Commentary: Meeting this target to reduce the Solar Technologies Program's adjusted uncosted obligated balances to an appropriate level of 20-25 percent on an annual basis ensures enough available funding to avoid disruptions to the program's planned activities, while ensuring that the program's activities are contractually obligated and carried out in a timely manner. This helps ensure that the program is making progress to improve performance of solar energy systems and reduce development, production, and installation costs to competitive levels.

Documentation: DOE STARS Financial Database System Second September 30 Adjustment (10/13/2005).

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

G **Develop thin-film PV modules with an 11.0 percent conversion efficiency that are capable of commercial production in the U.S. (EE GG 4.03.04)**

Commentary: By demonstrating a thin-film PV module with an 11 percent conversion efficiency that is capable of commercial production, the program has made continued progress towards the 2020 goal of 18 percent conversion efficiency. This will allow significant contribution to a clean, reliable and flexible U.S. energy supply.

Documentation: Standard quarterly laboratory reports from the PV Performance Characterization Group at the National Center for Photovoltaics (NCPV) at NREL.

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

FY 05	FY 04	FY 03	FY 02
Y	Y	Y	Y

Program Goal: Building Technologies Develop cost effective tools, techniques and integrated technologies, systems and designs for buildings that generate and use energy so efficiently that buildings are capable of generating as much energy as they consume. (EE GG 4.04)

Commentary: Progress in building technologies has included: the issuance of final test procedures for four commercial products; major advances in competitively awarded projects that will support the solid state lighting goal of 200 lumens per Watt in a laboratory device by 2025; and completion of four "Best Practices Building America Guide" documents. This progress supports the realization of highly efficient homes that use 70 percent less energy.

FY 2005 Annual Targets

G **Complete the research for production-ready new residential buildings that are 30 percent more efficient than the whole-house Building America benchmark in 2 climate zones and document the results in Technology Package Research Reports. (EE GG 4.04.10)**

Commentary: This target was achieved based on three years of research, construction and testing, in collaboration with lead builders, of homes that use 30 percent less energy than the Building America benchmark in the hot-dry/mixed-dry climate and cold climate. This effort contributes to the development of integrated technologies, systems and designs for buildings that can be up to 70 percent more energy efficient.

Documentation: NREL and Building America Consortia Technical Reports.

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

Y **Complete a prototype dynamic window that will have a solar heat gain coefficient range of 0.05 to 0.6 and will meet American Society for Testing Materials (ASTM) durability standards for cycling in a high temperature, high ultraviolet light environment. (EE GG 4.04.11)**

Commentary: DOE reviewed and made a decision to continue two projects that will develop prototypes meeting the set criteria: a platinum organic based dynamic device, and a device using dilute hydrogen as the catalyst. These prototypes will enable window with enhanced efficiency to support ultimately building homes that are 70 percent more energy efficient.

Plan of Action: Since the projects are still in the infancy of the developmental cycle, the Department will conduct initial ASTM testing and characterization of one prototypes by the end of the first quarter in FY 2006 to determine if it meets the identified standards.

Documentation: LBNL and NREL technical and quarterly progress reports.

Related Prior Year Target Performance: FY 2004: NA FY 2003: NA FY 2002: NA

Program Goal: Building Technologies (con't)

G **Complete assessments of controls technology, optimization methods and market opportunities, with substantial input from designers and building owners, to establish a framework for development of programmatic pathways to achieve 50 percent or better energy performance in significant numbers of buildings, enabling development of design technology packages for new commercial buildings. (EE GG 4.04.12)**

Commentary: The Buildings Technology Program completed an evaluation of the potential for optimization methods to provide a basis for developing design strategies, a study of the energy savings potential of advanced controls technology and a market study developing prototypical product concepts for high-performance buildings which were tested with a variety of audiences. These provide pathways to realize the goal of developing cost-effective designs for commercial buildings such that they produce as much energy as they use on an annual basis.

Documentation: NREL Technical and quarterly progress reports.

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

R **Contribute proportionately to EERE's corporate goal of reducing corporate and program adjusted uncosted obligated balances to a range of 20-25 percent by reducing program annual adjusted uncosteds by 10 percent in 2005 relative to the program FY 2004 end of year adjusted uncosted baseline ($33,417K) until the target range is met. (EE GG 4.04.13)**

Commentary: The Building Technology Program's level of uncosted obligations exceeds the appropriate range (i.e., 20-25 percent) which would avoid disruptions of activities, while ensuring that the program's major and critical activities are contractually obligated and carried out in a timely manner. This helps ensure that the program is making progress to allow buildings to generate and use energy so efficiently that they are capable of generating as much energy as they consume.

Plan of Action: The Buildings Technology Program is actively working to ensure that the uncosted obligations level is reduced to the appropriate level (20-25 percent) by conducting solicitations at the end of the fiscal year and making awards early in the next fiscal year to maximize the period of performance for awardees; reviewing performers' cash flow and making appropriate adjustments in funding; and developing Annual Operating Plans in the spring in order to be able to obligate funds as soon as appropriations are final.

Documentation: DOE STARS Financial Database System Second September 30 Adjustment (10/13/2005).

Related Prior Year Target Performance: FY 2004: R FY 2003: NA FY 2002: NA

Program Goal: Building Technologies (con't)

G **Analyze and develop code change proposals that are expected to result in a cost-effective improvement in energy efficiency in commercial buildings of approximately 1-2 percent. (EE GG 4.04.14)**

Commentary: The Department of Energy conducted analyses to support the prioritized list of cost-effective/energy efficient DOE sponsored/supported code change proposals to the next generation International Energy Conservation Code for commercial buildings. The approved proposals concerning more stringent solar heat gain coefficient requirements for windows, new exterior lighting requirements and simplified lighting power density requirements would result in energy efficiency savings of 1 to 2 percent compared to the 2003 International Energy Conservation Code.

Documentation: All IECC approved and accepted code changes printed in the IECC monograph.

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **R**

G **Analyze and develop code change proposals that are expected to result in a cost-effective improvement in energy efficiency in residential buildings of approximately 1-2 percent. (EE GG 4.04.15)**

Commentary: The Buildings Technology Program conducted analyses to support the prioritized list of cost- effective/energy efficient DOE sponsored/supported code change proposals to the next generation International Energy Conservation Code for residential buildings. While DOE recommended code change proposals would have resulted in energy efficiency savings of 1 to 2 percent compared to the 2003 International Energy Conservation Code, they were rejected in the ballot process resulting in stringency levels of the 2006 code that are roughly equivalent to the 2003 code.

Documentation: Analytical reports, code change proposals, DOE public and stakeholder comments and testimony.

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

G **Complete analytical and regulatory steps necessary for DOE issuance of 3-4 rules, consistent with enacted law, to amend appliance standards and test procedures that are economically justified and will result in significant energy savings. (EE GG 4.04.16)**

Commentary: DOE published final test procedures for four commercial products in the Federal Register and is completing the analytical and regulatory steps necessary to issue Notice of Proposed Rulemaking for two products: residential furnaces & boilers and distribution transformers. Advancing economically justified appliance standards for these products will result in significant savings.

Documentation: Transcripts from workshops and comments received summary of comments, draft report on manufacturing impact analysis and Technical Support Document(s).

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **R** FY 2002: **G**

Program Goal: Building Technologies (con't)

G **Complete a thermodynamic study of emerging refrigerants. Based on study results, make go/no-go decision on initiation of first stage development of a laboratory prototype, high efficiency residential 1-ton air-conditioning and heat pump unit that uses a novel approach to the vapor compression refrigeration cycle and has the potential for a Seasonal Energy Efficiency Ratio (SEER) of over 20. (EE GG 4.04.17)**

Commentary: The Building Technologies Program completed a thermodynamic study of emerging refrigerants, and made a go/no-go decision on the resulting high efficiency residential 1-ton air conditioning and heat pump prototypes. By verifying the potential to achieve an equivalent Seasonal Energy Efficient Ratio (SEER) of over 20, the Program demonstrates progress towards reducing energy demand in buildings by 70 percent.

Documentation: ORNL Quarterly Progress Report.

Related Prior Year Target Performance: FY 2004: NA FY 2003: NA FY 2002: NA

G **Select five new competitively based research awards for cost-shared research on technology (such as optical materials and device structures) to achieve greater than 65 lpw of white light from solid-state devices with industry, national labs, and universities. (EE GG 4.04.18)**

Commentary: The solid state lighting program completed awards for five (5) competitively selected projects with industry teams and demonstrated 65 lumens/Watt in a white-light, pre-production prototype device. This will contribute to the goal of 160 lumens/Watt and $11/kilo-lumen of white light from solid state lighting devices by 2025 helping to provide double the efficacy of today's most efficient lighting.

Documentation: Publication of awards, workshop documentation, and solicitation announcement with statement of need.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

FY 05	FY 04	FY 03	FY 02
Y	G	G	NA

Program Goal: Wind Energy By 2012, complete program technology research and development, collaborative efforts, and provide the technical support and outreach needed to overcome barriers - energy cost, energy market rules and infrastructure, and energy sector acceptance - to enable wind energy to compete with conventional fuels throughout the nation in serving and meeting the Nation's energy needs. (EE GG 4.05)

Commentary: Program made progress against the 2012 goal of reducing the cost of electricity from large wind systems in class four winds to 3 cents per kilowatt hour for onshore systems and 5 cents per kilowatt hour for offshore systems. This will contribute directly to DOE's mission of improving national, energy and economic security and address the President's National Energy Policy call for increasing the diversity of our Nation's energy resources.

FY 2005 Annual Targets

Y

***(Low Wind Speed Technology)* Complete fabrication and begin testing advanced variable speed power converter. Test first advanced blade, incorporating improved materials and manufacturing techniques. Field test the first full-scale Low Wind Speed Technology prototype turbine. *(Distributed Wind Technology)* Complete prototype testing of 1.8 KW Small Wind Turbine, finishing the International Electrotechnical Commission suite of tests for acoustics, power, durability, and safety. *(Technology Acceptance)* Achieve 32 states with over 20 MW installed; 16 states with over 100 MW installed. (EE GG 4.05.01)**

Commentary: The Wind Program achieved its R&D targets for low wind speed technology and distributed wind technology that are key to reducing the cost of energy of advanced large scale and small scale wind turbines, enabling wind turbines to be more competitive with conventional electricity supply technologies, however the targets for technology acceptance were not met (21 states have attained 20 MW and 15 states have reached 100 MW of wind generation). Broader deployment was delayed as a result of business decision uncertainty around continued federal tax policy and implementation of target state policies that create incentives for wind development. The completion of all of the Wind Program's activities will result in significant growth in wind installations to help meet increasing U.S. energy needs.

Plan of Action: Since states with mature markets experienced near record construction of wind facilities, the technology acceptance target (16 states with over 100 MW installed) will be met by the end of the calendar year.

Documentation: Verified by monthly reports from contractor/national labs including the Denver Regional Office, the National Renewable Energy Laboratory, and the Western Area Power Administration.

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: NA

Program Goal: Wind Energy (con't)

G

Contribute proportionately to EERE's corporate goal of reducing corporate and program adjusted uncosted obligated balances to a range of 20-25 percent by reducing program annual adjusted uncosteds by 10 percent in 2005 relative to the program FY 2004 end of year adjusted uncosted baseline ($18,317K) until the target range is met. (EE GG 4.05.02)

Commentary: Meeting this target to reduce the Wind Technology Program's adjusted uncosted obligated balances to an appropriate level of 20-25 percent on an annual basis ensures enough available funding to avoid disruptions to the program's planned activities, while ensuring that the program's activities are contractually obligated and carried out in a timely manner. This helps ensure that the program is making progress to enable wind energy to compete with conventional fuels throughout the nation in serving and meeting the Nation's energy needs.

Documentation: DOE STARS Financial Database System Second September 30 Adjustment (10/13/2005).

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

FY 05	FY 04	FY 03	FY 02
G	G	G	NA

Program Goal: Hydropower Conduct the R&D necessary to improve hydropower's operational and environmental performance so that hydropower generation is increased because of its affordability, abundance, reliability and environmental benefits. (EE GG 4.06)

Commentary: Program made progress in the advancement of a new aerating turbine that improved dissolved oxygen concentrations, which in turn helps address a key environmental barrier to hydropower relicensing, namely, fish survivability and growth. This will support the development of new and incremental hydropower capacity, adding to the diversity of the Nation's energy supply.

FY 2005 Annual Targets

G **Contribute proportionately to EERE's corporate goal of reducing corporate and program adjusted uncosted obligated balances to a range of 20-25 percent by reducing program annual adjusted uncosteds by 10 percent in 2005 relative to the program FY 2004 end of year adjusted uncosted baseline ($3,022K) until the target range is met. (EE GG 4.06.01)**

Commentary: Meeting this target to reduce the Hydropower Technology Program's adjusted uncosted obligated balances to an appropriate level of 20-25 percent on an annual basis ensures enough available funding to avoid disruptions to the program's planned activities, while ensuring that the program's activities are contractually obligated and carried out in a timely manner. This helps ensure that the program is making progress to increase the viability of hydropower, the Nation's most widely used renewable energy source, without construction of new dams.

Documentation: DOE STARS Financial Database System Second September 30 Adjustment (10/13/2005).

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

G **Complete prototype testing at the Osage project that demonstrates 2 mg/l improvement in oxygen content of water downstream of the hydropower plant. (EE GG 4.06.02)**

Commentary: Meeting this target demonstrated that the benefits of dissolved oxygen mitigation from the new aerating turbine typically extend many miles downstream and improve both water quality and biological parameters, such as fish growth and survival. This is important to help overcome one of the major environmental barriers to hydropower re-licensing thereby increasing the viability of hydropower, the Nation's most widely used renewable energy source, without construction of new dams.

Documentation: Verified by quarterly reports from national labs on biological design criteria project progress and a final report.

Related Prior Year Target Performance: FY 2004: NA FY 2003: NA FY 2002: NA

FY 05	FY 04	FY 03	FY 02
G	R	G	G

Program Goal: Geothermal Technology Improve performance and reduce market entry costs of geothermal energy to competitive levels. In quantitative terms, the goal is to reduce the levelized cost of power generated from conventional geothermal sources from 5 to 8 cents per kWh (kilowatt hour) in 2000 to 3 to 5 cents per kWh by 2010. (EE GG 4.07)

Commentary: Progress made in the fully integrated Diagnostics-While-Drilling project will help reduce overall geothermal plant costs to get to 2010 goals of achieving 3 to 5 cents kWh. The improved performance of geothermal will support the critical national objectives of improving the national energy security, providing for a cleaner environment, and ensuring continued economic growth and development.

FY 2005 Annual Targets

G **Field test a fully integrated Diagnostics-While-Drilling (DWD) advanced drilling system in a high-temperature geothermal well, verifying control of drilling operations in real time, thereby reducing costs. (EE GG 4.07.01)**

Commentary: Successfully completing the field test and verifying control of drilling operations in real time demonstrated the potential for reducing drilling costs. This is an important step in reducing market entry costs of geothermal energy to competitive levels thereby helping to reduce the levelized cost of power generated from conventional geothermal sources from 5 to 8 cents per kWh in 2000 to 3 to 5 cents per kWh by 2010.

Documentation: Quarterly report from Sandia National Laboratories.

Related Prior Year Target Performance: FY 2004: NA FY 2003: NA FY 2002: NA

G **Contribute proportionately to EERE's corporate goal of reducing corporate and program adjusted uncosted obligated balances to a range of 20-25 percent by reducing program annual adjusted uncosteds by 10 percent in 2005 relative to the program FY 2004 end of year adjusted uncosted baseline ($21,644K) until the target range is met. (EE GG 4.07.02)**

Commentary: Meeting this target to reduce the Geothermal Technology Program's adjusted uncosted obligated balances to an appropriate level of 20-25 percent on an annual basis ensures enough available funding to avoid disruptions to the program's planned activities, while ensuring that the program's activities are contractually obligated and carried out in a timely manner. This helps ensure that the program is making progress to improve performance and reduce market entry costs of geothermal energy to competitive levels.

Documentation: DOE STARS Financial Database System Second September 30 Adjustment (10/13/2005).

Related Prior Year Target Performance: FY 2004: R FY 2003: NA FY 2002: NA

FY 05	FY 04	FY 03	FY 02
G	Y	Y	R

Program Goal: Biomass and Biorefinery Systems R&D Develop biorefinery-related technologies to the point that they are cost- and performance-competitive and are used by the Nation's transportation, energy, chemical and power industries to meet their market objectives. (EE GG 4.08)

Commentary: Advances and completions in the biomass targets maintain the technology road map goals needed for biomass products to move into the marketplace at competitive prices. This research, development and demonstration aimed at bringing to the market domestically produced bio-based transportation fuels, power, and products (i.e. chemicals and materials) will help reduce our dependence on foreign oil.

FY 2005 Annual Targets

G **Contribute proportionately to EERE's corporate goal of reducing corporate and program adjusted uncosted obligated balances to a range of 20-25 percent by reducing program annual adjusted uncosteds by 10 percent in 2005 relative to the Biomass & Biomass Refinery Systems Program FY 2004 end of year adjusted uncosted baseline ($62,235K) until the target range is met. (EE GG 4.08.01)**

Commentary: Meeting this target to reduce the Biomass and Biorefinery Systems Program's adjusted uncosted obligated balances to an appropriate level of 20-25 percent on an annual basis ensures enough available funding to avoid disruptions to the program's planned activities, while ensuring that the program's activities are contractually obligated and carried out in a timely manner. This helps ensure that the program is making progress to develop biorefinery-related technologies to the point that they are cost- and performance-competitive.

Documentation: DOE STARS Financial Database System Second September 30 Adjustment (10/13/2005).

Related Prior Year Target Performance: FY 2004: R FY 2003: NA FY 2002: NA

G **Complete a technical and economic evaluation of integrated biomass to fuels systems to validate the sugar cost of $0.135 per pound and syngas cost of $6.13 per million Btu. (EE GG 4.08.03)**

Commentary: Technical and economic validation of integrated biomass to fuels systems with the intermediate sugar cost of $0.12 per pound and syngas cost of $6.13 per million Btu showed progress towards the 2012 cost goals of $5.28 per million Btu (syngas) and $0.10 per pound (intermediate sugar). This will lead to the domestically produced bio-based transportation fuels and power that will help reduce our dependence on foreign oil.

Documentation: NREL Design Report and Technical and Quarterly Progress Reports.

Related Prior Year Target Performance: FY 2004: NA FY 2003: NA FY 2002: NA

Program Goal: Biomass and Biorefinery Systems R&D (con't)

G **Establish the technical and market potential of a new biobased product. (EE GG 4.08.10)**

Commentary: The Biomass Program established the technical and market potential of biological production of a new biorefinery platform chemical, 3 hydroxy propionic acid (3HP) from sugars with Codexis and Cargill. This could be used as an intermediate for acrylic acid, a feedstock for a wide range of water soluble and commodity plastics such as the super absorbent materials used in personal care items and disposable diapers.

Documentation: Technical and Quarterly Progress Reports.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **NA**

FY 05	FY 04	FY 03	FY 02
G	G	Y	Y

Program Goal: Weatherization Increase the energy efficiency of dwellings occupied by low-income Americans, thereby reducing their energy costs, while safeguarding their health and safety. (EE GG 4.09)

Commentary: Working directly with the States to weatherize almost 100,000 low-income homes with DOE funding has helped advance the President's commitment to make energy more affordable for low-income consumers while reducing the nation's use of conventional fossil fuels.

FY 2005 Annual Targets

G **Weatherize 92,500 homes, with DOE funds, and support the weatherization of approximately 100,000 additional homes with leveraged funds. (EE GG 4.09.10)**

Commentary: Weatherizing 99,756 low-income homes with DOE funding and an additional 100,000 homes with funding from other sources will reduce low-income energy bills and reduce energy consumption. This advances the President's commitment to make energy more affordable for low-income consumers while reducing the nation's use of conventional fossil fuels.

Documentation: State reporting through Windows Systems Approach to grants Administration (WinSAGA) data reporting system.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **G**

Program Goal: Weatherization (con't)

G **Update the energy savings benefit-cost ratio and savings per DOE dollar invested as part of a national evaluation of the program. (EE GG 4.09.11)**

Commentary: A full scale national evaluation of the program is currently being planned, meta-evaluations conducted by ORNL on behalf of the program indicate annual savings in program year 2004 of 13,393 BTU per dollar invested (previous 2002 baseline was 13,245). While not independently reviewed, the program believes that the estimates appear reasonable. Using information from the forthcoming national evaluation, the program believes that program performance can be further improved to increase energy efficiency of swelling occupied by low-income Americans, thereby reducing their energy costs, while safeguarding their health and safety.

Documentation: WAP Evaluation Plan.

Related Prior Year Target Performance: FY 2004: NA FY 2003: NA FY 2002: NA

FY 05	FY 04	FY 03	FY 02
G	G	NA	NA

Program Goal: State Energy Programs Strengthen and support the capabilities of States to promote energy efficiency and to adopt renewable energy technologies. (EE GG 4.10)

Commentary: The State Energy Program assisted states in developing energy plans and fostered clean, reliable, and diverse energy supplies by developing and delivering meaningful and effective energy programs specific to state level needs and delivery systems. This has resulted in a significant energy savings benefits through promotion of technologies which are energy efficient and energy sources which are renewable.

FY 2005 Annual Targets

G **Achieve an annual energy savings of 10,250,000 million source BTUs and $64,780,000 in annual energy cost savings with DOE funds. Achieve an annual energy savings of 36,695,000 million source BTUs and $231,912,400 in annual energy cost savings with leveraged funds. (EE GG 4.10.10)**

Commentary: The State Energy Program uses factors developed by ORNL to estimate energy savings from SEP funded activities. The ORNL methodology was reviewed by the International Program Evaluation Board of Directors in February 2005. Based on these estimates, the program determined that it has provided both immediate and future reductions in energy consumption for residential consumers, state and local governments, schools, hospitals, small businesses and agriculture using $46.2 million of DOE funds and $494 million in leverage dollars to yield an estimated annual energy savings of 47.6 trillion BTUs and cost savings of $333.6 million.

Documentation: Windows Systems Approach to Grants Administration (WinSAGA) reporting. Regional Office monitoring and reporting. ORNL Report, "An Evaluation of SEP Accomplishments, Program Year 2002 (ORNL/CON-492)," June 2005. "A Review of State Energy Program Performance Metrics," Board of Directors of the International Energy Program Evaluation Conference, Inc., February 2005.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

Program Goal: State Energy Programs (con't)

G **Update BTU to dollar calculation derived from 2003 metrics study to establish a new baseline to allow the program to track a performance efficiency of BTUs saved per federal dollar invested. (EE GG 4.10.11)**

Commentary: The program contracted with ORNL to update the factors and estimates related to the BTU to dollar calculation, which has been reviewed by the International Program Evaluation Board of Directors. The program believes that this study will provide useful guidance to the States to encourage activities with high energy savings.

Documentation: ORNL Report, "An Evaluation of SEP Accomplishments, Program Year 2002 (ORNL/CON-492)," June 2005, and "A Review of State Energy Program Performance Metrics," Board of Directors of the International Energy Program Evaluation Conference, Inc., February 2005.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

FY 05	FY 04	FY 03	FY 02
Y	Y	G	G

Program Goal: Intergovernmental Activities Fund activities that facilitate the movement of energy efficient and renewable energy products into the market place and the integrated deployment of efficiency and renewable resources to communities and customers. Accelerate the adoption of clean, efficient and domestic energy technologies through efficient intergovernmental demonstration and delivery of cost-effective energy technologies which will benefit the public through improved energy productivity and reduced demand and particularly reduce the burden of energy cost on the disadvantaged. (EE GG 4.11)

Commentary: Through its many activities (International Renewable Energy Program; Tribal Energy Activities; Renewable Energy Production Initiative; Energy Star; Rebuild America; Clean Cities; Commercial and Residential Codes; Inventions and Innovations; and Energy Efficiency Information Outreach), the Intergovernmental Activities Program provided highly leveraged technical assistance in targeted communities accelerating the adoption of clean cost-effective energy efficient technologies. These activities benefit the public by improving energy productivity, reducing demand, and lessening the burden of energy costs on the disadvantaged.

FY 2005 Annual Targets

G **Help Rebuild America community partnerships to upgrade 60 million square feet of floor space in K-12 schools, colleges, public housing, and State/local governments, reducing the average energy used in these buildings by 18 percent. (EE GG 4.11.01)**

Commentary: Rebuild America upgraded approximately 169 million square feet of floor space in K-12 schools, colleges, public housing, and State/local governments, thus exceeding this target by over 200 percent. The deployment of energy efficient resources via this effort resulted in an average 18 percent reduction in the amount of energy used in these buildings.

Documentation: Rebuild America partner website reports.

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

Program Goal: Intergovernmental (con't)

Y **Provide direct technical assistance to tribal nations including: four development workshops, two to three economic development projects, eight to ten "first steps" efforts, and six to ten feasibility studies, working toward goal of 100 MW of generation in Indian country by 2010. (EE GG 4.11.02)**

Commentary: After holding four development workshops and conducting two competitive solicitations, the Tribal Energy Program made a programmatic decision to fund only one economic development project rather than the two to three anticipated, in order to fund a greater number of Feasibility Studies (seven) and "First Steps" projects (ten). This decision was based upon the potential for success of these projects and the best use of program funds in meeting the goal of generating 100MW of energy in Indian Country by 2010 using clean, efficient and domestic energy technologies.

Plan of Action: There is no need to take any further action to make up for the reduced number of economic development projects since the program decided to fund a greater number of Feasibility Studies and "First Step" projects.

Documentation: Workshop Information, solicitations and awards provided by lab reports.

Related Prior Year Target Performance: FY 2004: R FY 2003: NA FY 2002: NA

G **Provide technical assistance to States resulting in four States adopting upgrade d 2001 and 2003 model commercial or residential building energy codes. (EE GG 4.11.03)**

Commentary: Meeting this target resulted in seven States adopting upgraded 2001 and 2003 model commercial or residential building energy codes and the training of over 3,000 architects, engineers, builders, and code officials to implement and enforce these codes. This program believes that its effort may contribute to saving 72 trillion BTUs and $509 million in consumer costs in 2010.

Documentation: State reports in Status of State Codes at http://www.energycodes.gov. Quarterly state reports on building energy code special projects grants in WinSAGA.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

Program Goal: Intergovernmental (con't)

G **Clean Cities will conduct seven major workshops, award $4 million in special project funding for alternative fuel, anti-idling, and hybrid technology, and provide technical support to coalitions. The program will report a total number of 198,000 alternative fuel vehicles in operation in clean cities. Achieving these outcomes will result in an estimated displacement of 168 million gallons of petroleum based fuels and 70 new ethanol fueling stations. (EE GG 4.11.04)**

Commentary: By conducting seven major workshops and awarding $5.4 million in special project funding for alternative fuels, anti-idling devices, hybrid technology and for technical support to local coalitions, the Clean Cities program is able to report 201,000 alternative fuel vehicles in operation which resulted in 244 new ethanol refueling stations and an estimated displacement of 173 million gallons of petroleum based fuels. This program believes that it has facilitated the movement of energy efficient and renewable energy products into the market place.

Documentation: DOE regional offices and contractor report on number of alternative fueled vehicles.

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

G **Contribute proportionately to EERE's corporate goal of reducing corporate and program adjusted uncosted obligated balances to a range of 20-25 percent by reducing program annual adjusted uncosteds by 10 percent in 2005 relative to the program FY 2004 end of year adjusted uncosted baseline ($52,046K) until the target range is met. (EE GG 4.11.05)**

Commentary: Meeting this target to reduce the Intergovernmental Program's adjusted uncosted obligated balances to an appropriate level of 20-25 percent on an annual basis ensures enough available funding to avoid disruptions to the program's planned activities, while ensuring that the program's activities are contractually obligated and carried out in a timely manner. This helps ensure that the program is making progress to accelerate the adoption of clean, efficient and domestic energy technologies.

Documentation: DOE STARS Financial Database System Second September 30 Adjustment (10/13/2005).

Related Prior Year Target Performance: FY 2004: R FY 2003: NA FY 2002: NA

G **Provide technical analysis and reviews, data access, training and project support for 7 international clean energy projects which includes: developing two components for GIS tools to analyze U.S. EERE technology export markets; provide phase one and two technical assistance to secure access for EERE technologies to build 1000 MW of generation globally over ten years. (EE GG 4.11.06)**

Commentary: Meeting this target supports the goal of building in the international marketplace over a ten year period, 1000 MW of energy efficient and renewable energy generation technologies.

Documentation: Reports submitted by National Laboratories (including LBNL and NREL).

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

Program Goal: Intergovernmental (con't)

Y

Recruit 500 additional retail stores, five additional utilities and ten additional manufacturers for the Energy Star program. Complete draft Commercial Window specification. Begin update of Residential Window specification. Expand coordination with all gateway activities. (EE GG 4.11.07)

Commentary: The Energy Star program was successful in recruiting 1195 stores, 23 utilities, and 50 manufacturers to increase the production and sales of ENERGY STAR qualified products thus leading to consumer utility bill savings and reduction of green house gases. However, while the update of the residential window specification was begun, it was determined that commercial window specification should not be started but rather subsumed in a whole buildings concept.

Plan of Action: Based on input from industry and stakeholders, the Department decided creating component criteria (individual windows) where systems performance is more applicable (whole buildings) would not serve the customers (designers, developers, and tenants) in the commercial sector, therefore commercial window specifications will not be started.

Documentation: Store lists submitted by Energy Star retail partners.

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

FY 05	FY 04	FY 03	FY 02
Y	R	G	G

Program Goal: Federal Energy Management Program (FEMP)/Departmental Energy Management Program (DEMP) Provide the efficiency and renewable energy-related technical assistance Federal agencies need to lead the Nation by example through the government's own actions, expressly obtaining Federal renewable energy use of by 2.5 percent by 2005 and reducing energy intensity in Federal buildings by 35 percent by 2010 (using 1985 as a baseline). (EE GG 4.13)

Commentary: The program facilitated, through technical assistance on alternative finance projects, $72 million of private investment awards, trained federal employees in energy management best practices, provided technical and design assistance for 73 energy efficiency and renewable energy projects, and funded energy efficiency projects in DOE. These projects helped FEMP facilitate achieving the goal set forth in Executive Order 13123 of reducing energy intensity in federal buildings by 35 percent in 2010 as compared to the baseline year of 1985. For FY 2005, Federal agencies exceeded their goal of using renewable energy for 2.5 percent of their electricity needs.

FY 2005 Annual Targets

G

Complete the selection for funding of 4 to 13 energy efficiency projects through a competitive selection process that chooses those projects with the greatest return on investment. (EE GG 4.13.01)

Commentary: By funding 13 energy efficiency projects through a competitive selection process that chooses those projects with the greatest return on investment, the Departmental Energy Management Program has contributed to its overall goal of reducing the energy intensity at Department of Energy facilities.

Documentation: Department's Corporate Planning System (CPS).

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

Program Goal: FEMP/DEMP (con't)

R **Contribute proportionately to EERE's corporate goal of reducing corporate and program adjusted uncosted obligated balances to a range of 20-25 percent by reducing program annual adjusted uncosteds by 10 percent in 2005 relative to the FEMP Program FY 2004 end of year adjusted uncosted baseline ($11,266K) until the target range is met. (EE GG 4.13.02)**

Commentary: The Federal Energy Management Program's level of uncosted obligations exceeds the appropriate range (i.e., 20-25 percent) which would avoid disruptions of activities, while ensuring that the program's major and critical activities are contractually obligated and carried out in a timely manner. This helps ensure that the program is making progress to provide the efficiency and renewable energy-related technical assistance Federal agencies need.

Plan of Action: The Program is actively working to ensure that the uncosted obligations level is reduced to the appropriate level (20-25 percent) through a variety of means including the obligation of funds early in the year, the moving up of the decision date for distribution of ad hoc Technical Assistance funds, and the utilization of uncosted funds through special initiatives, including the efforts to increase energy efficiency at Federal agencies in the aftermath of the hurricanes Katrina and Rita.

Documentation: DOE STARS Financial Database System Second September 30 Adjustment (10/13/2005).

Related Prior Year Target Performance: FY 2004: R FY 2003: NA FY 2002: NA

G **Provide technical and design assistance for 60 federal projects which include energy efficiency, renewable energy, O&M, Distributed Energy Resources, Combined Heat and Power, SAVEnergy Audits, ALERTS and water conservation projects. (EE GG 4.13.10)**

Commentary: The Federal Energy Management Program in providing technical and design assistance for 73 energy efficiency, renewable energy and other projects, will help attain the goal set forth in Executive Order 13123 of reducing energy intensity in federal buildings by 35 percent in 2010 as compared to the baseline year of 1985.

Documentation: Reports from DOE National Laboratories and other contractors.

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

G **Train 4,000 Federal energy attendees in energy management best practices supporting National Energy Policy education goals. (EE GG 4.13.11)**

Commentary: Training 4,844 federal workers supports the goal of reducing energy intensity in federal buildings by 35 percent in 2010 compared to the baseline year of 1985 as set forth in Executive Order 13123.

Documentation: Reports received from the National Laboratory and other contractors who administer the training workshops.

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

Program Goal: FEMP/DEMP (con't)

G **Achieve between $60 and $100 million in private sector investment through Super Energy Savings Performance Contracts (ESPCs) which will result in about a 0.2 percent annual reduction in energy intensity. (EE GG 4.13.12)**

Commentary: Agencies awarded $72 million in private sector investment using the Department's Super Energy Savings Performance Contracts (ESPCs). This will result in about a 0.2 percent annual reduction in energy intensity. Use of Super ESPCs is one way to help support the goal of reducing energy intensity in federal buildings by 35 percent in 2010 as set forth in Executive Order 13123.

Documentation: Copy of the awarded contract from the Energy Service Company (ESCO).

Related Prior Year Target Performance: FY 2004: **R** FY 2003: **G** FY 2002: **G**

FY 05	FY 04	FY 03	FY 02
Y	Y	G	G

Program Goal: Distributed Energy Resources Develop and facilitate market adoption of a diverse array of cost competitive integrated distributed generation and thermal energy technologies in homes, businesses, industry, communities, and electricity companies, increasing the efficiency of electricity generation, delivery, and use, improving electricity reliability, and reducing environmental impacts. (EE GG 4.59)

Commentary: Through successful completion of technical activities to improve microturbines, reciprocating engines, industrial gas turbines for power generation, and thermally activated technologies, the program supports DOE's mission of advancing the national, economic, and energy security of the United States by promoting a diverse supply and delivery of reliable, affordable, and environmentally sound energy systems.

FY 2005 Annual Targets

G **Complete and document two distributed energy resource (DER)/combined heat and power (CHP) demonstration projects within the high tech industry, contributing to the PART long-term measure of developing a 70 percent efficient CHP integrated system. (EE GG 4.59.10)**

Commentary: Completing a multiple fuel cell combined heat and power project in New Jersey and a combined heat and power turbine installation at a high tech industrial park in Texas will contribute to the long-term measure of developing a 70 percent efficient combined heat and power integrated system. This is an important step in the process to facilitate market adoption of a diverse array of cost competitive integrated distributed generation and thermal energy technologies in homes, businesses, industry, communities, and electricity companies.

Documentation: Quarterly contractor reports and final report.

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

Program Goal: Distributed Energy Resources (con't)

G **Demonstrate NOx emission levels of 0.25 lbs/MWh from a turbine combustion system. (EE GG 4.59.11)**

Commentary: Achieving this target on two systems (the Catalytica Xonon at the Nuovo Pignone test facility, Italy; and the C200 at Capstone Beta, UC-Irvine) is crucial to the Distributed Energy Resources Program achieving its long term goal of developing a diverse array of cost competitive integrated distributed generation and thermal energy technologies that improve on-site energy reliability, while reducing environmental impacts.

Documentation: Quarterly contractor reports and final report.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **NA**

R **Contribute proportionately to EERE's corporate goal of reducing corporate and program adjusted uncosted obligated balances to a range of 20-25 percent by reducing program annual adjusted uncosteds by 10 percent in 2005 relative to the program FY 2004 end of year adjusted uncosted baseline ($21,257K) until the target range is met. (EE GG 4.59.12)**

Commentary: The Distributed Energy Resources Program's level of uncosted obligations exceeds the appropriate range (i.e., 20-25 percent) which would avoid disruptions of activities, while ensuring that the program's major and critical activities are contractually obligated and carried out in a timely manner. This helps ensure that the program is making progress to develop and facilitate market adoption of a diverse array of cost competitive integrated distributed generation and thermal energy technologies.

Plan of Action: The Program is actively working to ensure that the uncosted obligations level is reduced to the appropriate level (20-25 percent) through a variety of means including the obligation of funds early in the year, reviewing performers' cash flow to make appropriate adjustments in funding, and developing Annual Operating Plans in the spring in order to be able to obligate funds as soon as appropriations are final.

Documentation: DOE STARS Financial Database System Second September 30 Adjustment (10/13/2005).

Related Prior Year Target Performance: FY 2004: **R** FY 2003: **NA** FY 2002: **NA**

G **Complete a case study on a combined heat and power (CHP) installation that uses heat from a microturbine to provide plate tank heating and sludge drying at an industrial facility, contributing to the PART long-term measure of developing a 70 percent efficient CHP integrated system. (EE GG 4.59.13)**

Commentary: By meeting this target and achieving a 72 percent overall efficient combined heat and power system, the Distributed Energy Resources program has exceeded their long term measure of a 70 percent efficient integrated system. This contributes towards the market adoption of cost competitive integrated distributed thermal energy technologies in businesses and industry, which increases the efficiency of electricity use, improves electricity reliability, and reduces environmental impacts.

Documentation: Quarterly contractor reports and final report.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **G**

FY 05	FY 04	FY 03	FY 02
G	G	G	G

Program Goal: Industrial Technologies Partner with our most energy-intensive industries in strategic planning and energy-specific Research, Development & Demonstration (RD&D) to develop the technologies needed to use energy efficiently in their industrial processes and cost-effectively generate much of the energy they consume. The result of these activities will save feedstock and process energy, create domestic supply, improve the environmental performance of industry, and help America's economic competitiveness. (EE GG 4.60)

Commentary: Three new industrial energy efficiency technologies were commercialized and 2084 additional energy-intensive U.S. plants are applying EERE technologies and services to save energy. The production improvements and direct reduction in both total industrial energy use and the use of fossil fuels contributes to the Administration goal of an 18 percent reduction between 2002 and 2012 in the greenhouse gas intensity, or total greenhouse gas emissions per unit of the Gross Domestic Product of the U.S. economy.

FY 2005 Annual Targets

G **Contribute proportionately to EERE's corporate goal of reducing corporate and program adjusted uncosted obligated balances to a range of 20-25 percent by reducing program annual adjusted uncosteds by 10 percent in 2005 relative to the program FY 2004 end of year adjusted uncosted baseline ($40,741K) until the target range is met. (EE GG 4.60.10)**

Commentary: Meeting this target to reduce the Industrial Technologies Program's adjusted uncosted obligated balances to an appropriate level of 20-25 percent on an annual basis ensures enough available funding to avoid disruptions to the program's planned activities, while ensuring that the program's activities are contractually obligated and carried out in a timely manner. This helps ensure that the program is making progress to develop the technologies needed to assist industry to use energy efficiently in their processes and cost effectively generate much of the energy they consume.

Documentation: DOE STARS Financial Database System Second September 30 Adjustment (10/13/2005).

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

G **Commercialize 3 new technologies in partnership with the most energy-intensive industries. (EE GG 4.60.11)**

Commentary: The three new technologies commercialized to achieve this goal were "High Luminosity Low NOx Burner" for high heat transfer to glass in glass melters, "Pressurized Ozone/Ultrafiltration Membrane System" for removing total dissolved solids from paper mill water, and the "Ultra-Low NOx Premixed Industrial Burner" used for industrial process heaters, industrial baking and drying ovens. The development of these new technologies within the most energy-intensive industries results in more efficient use of energy, improves the environmental performance of these industries, and increases America's economic competitiveness.

Documentation: Monthly report from PNNL.

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

Program Goal: Industrial Technologies (con't)

G **Achieve an additional 200 (leading to a cumulative 7000) energy intensive U.S. plants applying EERE technologies and services. (EE 4.60.12)**

Commentary: With the accomplishment of this target, there are now over 12,000 total unique plants applying energy technologies which help to reduce emissions and increase energy efficiency and productivity. The overall result of this effort will save feedstock and process energy, improve the environmental performance of these industries, and help maintain America's economic competitiveness.

Documentation: Lawrence Berkeley National Laboratory and Project Performance Corporation reports.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **NA**

FY 05	FY 04	FY 03	FY 02
G	Y	Y	Y

Program Goal: Develop New Nuclear Generation Technologies Develop new nuclear generation technologies that foster the diversity of the domestic energy supply through public-private partnerships that are aimed in the near-term (2014) at the deployment of advanced, proliferation-resistant light water reactor and fuel cycle technologies and in the longer-term (2025) at the development and deployment of next-generation advanced reactors and fuel cycles. (NE GG 4.14)

Commentary: For the near-term goal of lowering the risks associated with obtaining the licenses to build and operate the next nuclear power plant in the U.S., the process has moved forward by awarding two projects to conduct a detailed evaluation of both obtaining a Construction and Operating License and building an advanced light water reactor. For the longer-term goal of developing and deploying next-generation advanced reactors, the program continues to conduct research and development on a variety of thermal and fast reactors. In addition, the Department is developing technologies to enable hydrogen generation using nuclear power in support of the President's Hydrogen Initiative. Finally, completion of the design documents for the Advanced Fuel Cycle Initiative experimental test equipment enables construction in FY 2006 which will be used in FY 2007 for progress toward qualification of fuel for the very high temperature reactor.

FY 2005 Annual Targets

G **Achieve cumulative variance of less than 10 percent from each of the cost and schedule baselines for the Advanced Fuel Cycle, Generation IV Nuclear Energy Systems and Nuclear Hydrogen Initiatives. (NE GG 4.14.01)**

Commentary: Overall cumulative year-to-date (October through August) cost variance is +2.76 percent (cost underrun); schedule variance is -6.23 percent (behind schedule). Monitoring of cost and schedule performance against established baselines ensures program managers are achieving the desired program results consistent with the budget execution strategy and provides an early identification of possible problems in program execution.

Documentation: Earned Value Reports through August and Monthly Reports for December through August.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

G **Issue project implementation plans for two Construction and Operating Licensing (COL) Demonstration Projects. (NE GG 4.14.02)**

Commentary: The project implementation plans for the Dominion and NuStart Construction and Operating Licensing Demonstration Projects-comprised of the DOE Interface and Oversight Agreements and the Project Execution Plans-establish the project management controls to ensure proper program execution consistent with the spirit and requirements of DOE Order 413.3.

Documentation: DOE Interface and Oversight Agreements, including Project Execution Plans, for the two Construction and Operating Licensing demonstration projects.

Related Prior Year Target Performance: FY 2004: G FY 2003: Y FY 2002: G

Program Goal: Develop New Nuclear Generation Technologies (con't)

G **Issue the final design documents for the fuel capsule, test train, fission product monitoring system, and control system for the fuel irradiation shakedown test (AGR-1). (NE GG 4.14.03)**

Commentary: These designs describe the test equipment that will be constructed and tested in FY 2006 for the purpose of validating our ability to conduct and monitor fuel performance tests in the Advanced Test Reactor in Idaho. Meeting this target is a critical step in achieving the overall program objective of developing and qualifying particle fuels for use in Generation IV advanced gas reactor systems.

Documentation: AGR-1 Final Design Documentation (Idaho National Laboratory), Final Issue, August 26, 2005.

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **G** FY 2002: **G**

G **Issue conceptual design documents for the thermochemical and high-temperature electrolysis pilot scale experiments. (NE GG 4.14.04)**

Commentary: These design documents constitute the current level of knowledge for pilot-scale experiments, identifying the gaps in knowledge that the lab-scale experiments planned for FY 2007 will address. Completion of this milestone supports the long-term objective of developing hydrogen production technology as described in the President's Hydrogen Initiative.

Documentation: Report entitled "Conceptual Design for a 500 kW Sulfur-Iodine Thermochemical Cycle Pilot-Scale Experiment" and report entitled "Conceptual Design Documentation for High-Temperature Electrolysis Pilot-Scale Experiment at 200 kW."

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

G **Issue preliminary report on the post-irradiation examination (PIE) of actinide -bearing metal and nitride transmutation fuels irradiated in the Advanced Test Reactor. (NE GG 4.14.05)**

Commentary: The Post Irradiation Examinations (PIE) on advanced transmutation metal and nitride fuels reported in the September 29 preliminary report are key to continued irradiations to higher burnups and burnups in true fast reactors. This milestone is a critical step to achieving the program objective of developing and qualifying transmutation fuels for use in Generation IV fast reactors.

Documentation: September 2005 Technical Report

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **Y**

Program Goal: Develop New Nuclear Generation Technologies (con't)

G	**Conduct laboratory-scale test of group actinide separation process (plutonium, neptunium, americium and curium extracted together) with actual light water reactor (LWR) spent fuel and report preliminary results. (NE GG 4.14.06)**

Commentary: These preliminary results indicate that group actinide separation is a viable technology. Completing this step is critical to development of an optional process for separating light water reactor fuel in a proliferation-resistant manner.

Documentation: Preliminary results in letter report were issued to DOE/NE-20 by Argonne National Laboratory on September 30, 2005.

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

FY 05	FY 04	FY 03	FY 02
G	G	Y	G

Program Goal: National Nuclear Infrastructure Maintain and enhance the national nuclear infrastructure to meet the Nation's energy, environmental, medical research, space exploration and national security needs. (NE GG 4.17)

Commentary: By maintaining the planned cost and schedules for unique Departmental facilities, the Department supported advanced nuclear energy research and the growing demand for isotopes used in medicine, scientific research and homeland security, provided radioisotope power systems for space exploration and national security, and ensured the long term future of the domestic nuclear fuel supply.

FY 2005 Annual Targets

G	**Consistent with safe operations, achieve cumulative variance of less than 10 percent from each of the cost and schedule baselines for the Radiological Facilities Management and Idaho Facilities Management programs. (NE GG 4.17.01)**

Commentary: Overall cumulative year-to-date for Radiological Facilities Management and Idaho Facilities Management (October through August) cost variance is +5.0 percent (cost underrun) and schedule variance is -0.7 percent (behind schedule). Efficient execution of these programs ensures that the Department's critical nuclear infrastructure, required for advanced nuclear energy technology research and development, is available to support national priorities.

Documentation: Program Baseline Documentation, Monthly Reports

Related Prior Year Target Performance: FY 2004: G FY 2003: Y FY 2002: G

Program Goal: National Nuclear Infrastructure (con't)

G **Complete FY 2005 actions at the Idaho Site required to implement the May 2003 Design Basis Threat (DBT) as defined in the Program Management Plan that remain consistent with the requirements of the October 2004 DBT. (NE GG 4.17.02)**

Commentary: The completion of these actions moves the Department towards full implementation of the 2003 Design Basis Threat by the end of FY 2006.

Documentation: Approved 2004 DBT Implementation Plan dated July 21, 2005

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

FY 05	FY 04	FY 03	FY 02
G	G	G	G

Program Goal: Enhance the Nation's Nuclear Education Infrastructure Enable, by 2015, the Nation's nuclear engineering universities to support a stable national undergraduate enrollment of approximately 1,500 students to meet the Nation's need for trained nuclear scientists and engineers. (NE GG 4.63)

Commentary: The Department continued to provide significant support to the education of the next generation of nuclear engineers and scientists by awarding over 250 fellowships, scholarships, and industry matching grants, as well as, funding numerous equipment and instrumentation upgrades at the university reactors throughout the country. The Department's involvement in these programs continues to serve as the primary catalyst for industry participation in these programs.

FY 2005 Annual Targets

G **Issue funding to the six existing Innovations in Nuclear Infrastructure and Education consortia; provide fuel to University Research Reactors; issue funding to 20 to 25 DOE/Industry Matching Grants, 20 equipment and instrumentation upgrades, and 50 Nuclear Engineering Education Research grants; and provide 25 fellowships and 75 scholarships. (NE GG 4.63.01)**

Commentary: Issued funding to the six existing Innovations in Nuclear Infrastructure and Education consortia; provided fuel to the University Research Reactors; issued 25 DOE/Industry matching grants; funded 21 equipment and instrumentation upgrades; funded 50 Nuclear Engineering Education Research grants; and provided 29 fellowships and 81 scholarships. Efficient execution of this program ensures that the intellectual capital, required to ensure the ongoing availability of nuclear power as part of the diversity of the Nation's energy mix, is available to support the Nation's nuclear research infrastructure.

Documentation: Signed funding letters; Notice of Financial Assistance Award (NFAA) instruments.

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

FY 05	FY 04	FY 03	FY 02
G	Y	G	Y

Program Goal: Near Zero Atmospheric Emissions Coal-Based Electricity and Hydrogen Production Create public/private partnerships to develop technology to ensure continued electricity generation and hydrogen production from the extensive U.S. fossil fuel resource, including control technologies to permit reasonable-cost compliance with emerging regulations, and ultimately, by 2015, near zero atmospheric emission plants (including carbon) that are fuel-flexible, and capable of multi-product output and energy efficiencies over 60 percent with coal. (FE GG 4.55)

Commentary: Created public/private partnerships to provide technology to ensure continued electricity production from the extensive U.S. fossil fuel resource, including control technologies to permit reasonable-cost compliance with emerging regulations, and ultimately, by 2015, near zero atmospheric emission plants (including carbon) that are fuel-flexible, and capable of multi-product output and efficiencies over 60 percent with coal and 75 percent with natural gas.

FY 2005 Annual Targets

G **Develop field performance and cost data for emission control technologies and establish baseline for emissions transport from coal-fired boilers in support of proposed mercury and air quality regulations. (FE GG 4.55.01)**

Commentary: Establishing baseline cost and performance data for advance emissions control technologies is a critical step toward the commercialization of technologies with the potential to reduce: Mercury by 50 - 70 percent at 70 percent of the 2003 cost of $50,000-$70,000/lb of mercury; NOx to less than 0.15 lb/mmBtu at ¾ cost of SCR, currently $80-$100/Kw; PM2.5 by 99.99 percent for less than $50-$70/Kw; and acid gases by 95 percent.

Documentation: The subject report titled "Laboratory Methods for the Evaluation of Potential Release of Mercury from Coal Utilization By-Products" was delivered to NETL on July 21, 2005.

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

G **Begin construction of slip stream test units, test planning, and testing of advanced gas cleanup concepts using real coal-derived synthesis gas. (FE GG 4.55.02)**

Commentary: The Gasification Technologies program moved ultra-clean cleanup, including economical and efficient sulfur removal and/or multi-contaminant cleanup, a significant step closer to commercialization, eventually leading to capital cost reductions of $60-$80.kWe and efficiency improvements of >1 efficiency points. The turbine technology area of Advanced Power showed progress towards the contribution of 2 - 3 percentage points improvement in combined cycle turbine efficiency.

Documentation: September 2005 Monthly Report

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: NA

Program Goal: Near Zero Emissions Coal-Based Electricity and Hydrogen Production (con't)

G **Complete at least two pilot scale tests on emerging advanced capture technologies related to oxyfuel, sorbents, membranes and hydrates. (FE GG 4.55.03)**

Commentary: The program completed two pilot scale tests on emerging advanced capture technologies related to oxyfuel, sorbents, membranes and hydrates. Demonstration of technologies at a pilot plant scale will lead to a reduction in the cost of carbon separation and capture from new coal-based power systems by 75 percent compared to current systems ($200/tonne carbon in year 2000).

Documentation: Quarterly reports issued July 29, 2004 (prior experimentation); January 31, 2005, and July 2005 (current efforts).

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

G **Begin prototype validation of technical requirements for low-cost State Energy Conservation Alliance (SECA) fuel cell systems. Test at least one prototype capable of achieving SECA cost and efficiency Phase I goals. (FE GG 4.55.04)**

Commentary: General Electric initiated and completed validation testing of their Phase I prototype and met the SECA minimum requirements with a cost of $724/kW ($800/kW goal) and an efficiency of 38 percent (35 to 55 percent goal). Validation that SECA Prototype systems are capable of achieving Phase I goals ensures that the program is on track for the ultimate program goal of modular fuel cells with 10-fold cost reduction ($400/kW) at 40-60 percent efficiency.

Documentation: Details and presentations for all of the SECA Industry Teams are available on the SECA website (http://www.seca.doe.gov/), especially the Fuel Cell Annual Report 2005 and Fossil Energy Techlines.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **G**

G **Under SECA CTP, validate one new sealing concept; achieve 20 percent improvement in metallic interconnect performance relative to FY04 baseline; and achieve 20 percent sulfur tolerance relative to FY 2004 baseline. (FE GG 4.55.05)**

Commentary: A hybrid mica-Ag composite sealing concept was validated and showed an 80 percent percent improvement relative to the FY 2004 baseline leakage target. Interconnect development has improved 66 percent (reduced to 1/3) for 500 hours duration to an area specific resistance (ASR) of 13 mohm-cm2. Anode development has improved sulfur tolerance 160 percent to 26ppm H2S. The latter two figures are far in excess of the 20 percent improvement in the annual target, and all three provide competitive solid oxide fuel cell concepts and focused R&D to meet SECA cost reduction and performance goals. Validation of improved sealing and interconnect performance increases the robustness of distributed generation and thereby lower vulnerability of the electricity grid by introducing prototypes. This is critical to the ultimate success of the SECA program.

Documentation: Details and presentations are available on the SECA website (http://www.seca.doe.gov), especially the Fuel Cell Annual Report 2005.

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

Program Goal: Near Zero Emissions Coal-Based Electricity and Hydrogen Production (con't)

G **Initiate 100 percent of the active industrial projects selected under the first round of the competitive Clean Coal Power Initiative (CCPI) solicitation and make project selections from the second round CCPI solicitation. (FE GG 4.55.06)**

Commentary: All active projects selected under the CCPI Round 1 solicitation were initiated; project selections for CCPI Round 2 were made in October 2004. The CCPI will develop advanced coal-based power generation technologies that: improve efficiency from 2002 baseline by 40-50 percent by 2010, with environmental and economic performance capable of achieving 90 percent Hg removal at a cost of 70 percent of current technology by 2010, 0.15 lb/MMBtu NOx at 75 percent of the cost of current technology (selective catalytic reactors), and lower capital costs for gasification technologies from $1,200 per kilowatt of capacity; co-produce heat, fuels, chemicals or other useful byproducts; and, provide a deployment-ready suite of advanced technologies that can produce substantial near-, mid-, and long-range economic and environmental public benefits.

Documentation: Copies of the cooperative agreements are available at NETL. Project selections for CCPI Round 2 were made in October 2004 and public notification was posted on the NETL website (www.netl.doe.gov) the same month.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

G **Complete analysis and continue compilation of data derived from hydrogen separations in a format that can be used as the basis for developing industry standards needed to design and operate commercial-scale separation technology. (FE GG 4.55.07)**

Commentary: The data obtained during FY 2005, and other on-going membrane research, was sufficient to update the Hydrogen-from-Coal RD&D Plan's technical targets for membrane technologies. Further, based on lack of progress made in developing dense ceramic membranes, it was decided to not pursue further development on that specific type of membrane. All other RD&D technical targets were also revised, based on progress made in storage and utililization and programmatic decisions to incorporate additional technologies in the Program. Developing industry standards for the design and operation of commercial-scale separation technology is a critical first step in the development of modules capable of co-producing hydrogen from coal at $30/barrel crude oil equivalent (no incentives or tax credits) when integrated with advanced coal power systems.

Documentation: Document available upon request from NETL.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

FY 05	FY 04	FY 03	FY 02
G	G	G	G

Program Goal: Natural Gas Technologies Provide technology and policy options capable of ensuring abundant, reliable, and environmentally sound gas supplies. (FE GG 4.56)

Commentary: The Natural Gas program has provided valuable new hardware, tools, data and research information that has helped the natural gas industry explore, devebp and produce more natural gas. New technology approaches developed under the DOE/NETL program will provide a higher probability of success in the finding and producing of U.S. natural gas resources.

FY 2005 Annual Targets

G **Complete four of the prototype near-term products or field tests from the following critical technology areas: advanced drilling, stripper-well enhancement, and gas storage. (FE GG 4.56.01)**

Commentary: Completed four prototype near-term products and field tests from the critical technology areas of advanced drilling and stripper-well enhancement. Several technologies were transferred to industry which benefit the stripper well enhancement and advanced drilling areas. Upon transferring of these technologies to industry, they may substantially reduce costs or increase efficiency in gas exploration and production.

Documentation: Milestones recorded in ProMIS

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

G **Conduct an ocean expedition to retrieve gas hydrate samples for laboratory analysis. (FE GG 4.56.02)**

Commentary: These efforts of retrieving gas hydrates were completed, representing the first time subsurface hydrate samples have been collected in the Gulf of Mexico using the specially instrumented pressure vessels developed under this program. These efforts of retrieving gas hydrate samples have provided valuable information and insight into the physical and production properties of producing natural gas from gas hydrates. Experimental results are beginning to provide unique data for numerical modeling the impact of core recovery on hydrate-bearing sediments. This advanced information will allow for a higher probability of success in providing additional gas supply from gas hydrates.

Documentation: ChevronTexaco GOM Gas Hydrate JIP Drilling Program Downhole Logging Program Report.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: G

FY 05	FY 04	FY 03	FY 02
G	G	Y	G

Program Goal: Oil Technologies Enhance U.S. energy security by managing and funding oil exploration and production (E&P) research and policy which results in development of domestic oil resources in an environmentally sound and safe manner. (FE GG 4.57)

Commentary: The long term goal of increasing economic recoverable resource base is supported by the successful field applications of the horizontal well projects, the Delaware sandstone work, initiation of the microhole applications, the 3-D seismic, new completion techniques, and produced gas handling.

FY 2005 Annual Targets

G **Develop technologies through four projects which will contribute to increasing domestic oil supplies in an environmentally friendly manner. (FE GG 4.57.01)**

Commentary: Technical success was achieved in 12 projects. This exceeds the expected success of four projects. The successful field applications support the goal of increasing economic recoverable resource base through horizontal well projects, the Delaware sandstone work, initiation of the microhole applications, the 3-D seismic, new completion techniques, and produced gas handling.

Documentation: Milestones recorded in ProMIS

Related Prior Year Target Performance: FY 2004: G FY 2003: Y FY 2002: G

FY 05	FY 04	FY 03	FY 02
G	G	Y	G

Program Goal: Petroleum Reserves Maintain operational readiness of the Strategic Petroleum Reserve (SPR) to drawdown at a sustained rate of 4.4 million barrels per day for 90 days, within 15 days notice by the President. Maintain a 2 million barrel reserve of home heating oil in the U.S. Northeast. Utilize Naval Petroleum Reserve (NPR) #3 as a testing and demonstration field for the Rocky Mountain Oil field Testing Center's ongoing research. Continue closeout and equity finalization activities related to NPR #1 and finalize settlement to the State of California with respect to its claim to be "school lands". (FE GG 4.58)

Commentary: During FY 2005, SPR maintained operational readiness through Quarterly Readiness Reviews and a triennial drawdown exercise. The Northeast Home Heating Oil Reserve continues to maintain a 2 million barrel reserve, which is verified monthly in terms quality and quantity. Research at Naval Petroleum Reserve #3 contributed to technologies that provide the opportunity to incrementally increase the domestic petroleum reserves. The equity decision related to the Naval Petroleum Reserve #1 Stevens Zone is being challenged by Chevron. When equity is finalized on all four zones, any remaining amount due to the State of California for "school lands" can be determined.

FY 2005 Annual Targets

G **Achieve an end of year crude oil inventory equal to 690 million barrels in SPR. (FE GG 4.58.01)**

Commentary: After responding to the President's direction to drawdown oil from SPR following the devestation of Hurricane Katrina, the Reserve's inventory at year-end was 693.2 MMB.

Documentation: Crude Oil Movement and Events Tracking System (COMETS)

Related Prior Year Target Performance: FY 2004: G FY 2003: Y FY 2002: G

FY 05	FY 04	FY 03	FY 02
Y	Y	G	Y

Program Goal: Electric Transmission and Distribution Lead the national effort to modernize and expand the Nation's electricity delivery system to ensure a more reliable and robust electricity supply, as well as economic and national security. (OE GG 4.12)

Commentary: Although the office failed to achieve two of its annual performance targets, both failures were due to temporary, short-term delays that did not impact significantly the progress toward the program goal. During FY 2005 the Office of Electric Transmission and Distribution was reorganized and expanded to include the Office of Energy Assurance. Through the expansion and new integrated mission, the office has made noteworthy progress in improving the reliability of the Nation's electric grid with a real time, wide area measurement system for the Eastern Interconnection, progress on high temperature superconductivity cable and battery systems for storage, the successful demonstration of load management technologies, as well as emergency response and energy restoration assistance in the aftermath of hurricanes Katrina and Rita.

FY 2005 Annual Targets

R **Complete the manufacture a 200m superconducting cable for American Electric Power (AEP). (OE GG 4.12.01)**

Commentary: All preparations were made on schedule, however due to a manufacturing delay the superconducting cable was not completed. The successful development of high temperature superconducting cable will improve the efficiency and reliability of electricity transmission, such as reducing costs of increasing power delivery and relieving bottlenecks in transmission and distribution networks.

Plan of Action: The manufacturer has committed to completing the cable by October 28th, 2005.

Documentation: Project Gantt chart maintained by Field Manager Paul Bakke, Golden Field Office.

Related Prior Year Target Performance: FY 2004: NA FY 2003: NA FY 2002: NA

G **Install four additional data concentrators at four different data archiving and analysis locations, achieving a prototype wide area measurement system in the Nation's Eastern Interconnect consisting of six fully functioning data archiving and analysis locations installed at six different utilities. (OE GG 4.12.02)**

Commentary: With the successful installation of four additional data concentrators at four different data archiving and analysis locations, DOE has helped lead the efforts to make the Nation's electric grid more reliable. These efforts result in improved real time monitoring of the flow of electricity and the information that would help operators prevent or mitigate serious problems that might result in blackouts.

Documentation: Pacific Northwest National Laboratory September 2005 Report for the Transmission Reliability Program.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

Program Goal: Electric Transmission and Distribution (con't)

R **Complete the manufacture of and factory testing on a 2MW / 2MWh zinc-bromine battery (ZBB) system (consisting of four 500kW / 500kWh units) for supplying extra power during peak load conditions at a utility substation. (OE GG 4.12.03)**

Commentary: Although manufacture of the first 500kW/500kWh unit is complete at the ZBB facility in Wisconsin, factory testing was not completed. Delays are due to technical problems in component supply and a change in the main funding partner's (California Energy Commission) delivery schedule. Successful development of electric storage technologies can significantly reduce transmission system congestions, help manage peak loads, make renewable electricity sources more dispatchable, and increase the reliability of the overall electric grid.

Plan of Action: Testing of the complete system is planned to be finished at the Wisconsin factory by May 2006 before it will be delivered to the testing facility in San Ramon, CA. While this delays installation, it will improve prospects for the success of the project.

Documentation: California Energy Commission – contract modification dated May 2005.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

G **Reduce by 10 percent the total time required by OE to complete its FY 2006 CFO, OMB and Congressional budget submissions as compared to its comparable FY 2005 budget submissions. (OE GG 4.12.04)**

Commentary: The program reduced by 10 percent the total time required by OE to complete its FY 2006 CFO, OMB and Congressional budget submissions as compared to its comparable FY 2005 budget submissions. The reduction in total time spent on completing the FY 2006 budget allows for a timely submission and redirection of time for other office projects.

Documentation: FY 2006 Budget Submissions and a log of man hours worked.

Related Prior Year Target Performance: FY 2004: NA FY 2003: NA FY 2002: NA

G **Complete field hardware installation at a cumulative total of at least 100 commercial, industrial and/or municipal customers participating in the demand response and load conservation network in Connecticut, and reduce peak demand (kilo watt hours) in real time by 5-8 percent on average (as compared to non-curtailed kilowatt hour consumption) for all participating customers. (OE GG 4.12.05)**

Commentary: With the achievement of the target and demonstration of real-time wireless electricity monitoring and load management technologies in commercial, industrial and municipal facilities to curtail peak demand and reduce unnecessary kilowatt hour consumption, the Department has shown the value of integrating demand resources into the overall electric utility system to improve overall system reliability, to reduce wholesale electric generation price volatility and to reduce congestion costs in energy constrained areas.

Documentation: Preliminary Connecticut Power Technologies Project Quarterly Technical Report, July 28, 2005.

Related Prior Year Target Performance: FY 2004: NA FY 2003: NA FY 2002: NA

FY 05	FY 04	FY 03	FY 02
G	G	G	Y

Program Goal: Southeastern Power Administration Ensure Federal hydropower is marketed and delivered while passing the North American Electric Reliability Council's (NERC) Control Compliance Ratings, meeting planned repayment targets, and achieving a recordable accident frequency rate at or below our safety performance standard. (PMA GG 4.51)

Commentary: Achievement of associated annual targets related to reliability, repayment of Federal investment and safety indicate that the program continues to meet its goal of efficiently and effectively marketing and delivery Federal hydropower, providing significant economic benefits to the affected region.

FY 2005 Annual Targets

G **Attain acceptable North American Electric Reliability Council (NERC) ratings for the following NERC Control Performance Standards (CPS) measuring the balance between power generation and load: 1) CPS1 which measures generation/load balance and support system frequency on one minute intervals (rating >100); and 2) CPS2 which limits any imbalance magnitude to acceptable levels (rating >90). (PMA GG 4.51.01)**

Commentary: For FY 2005, Southeastern achieved annual average CPS 1 and 2 measures of 207.98 and 99.85, respectively. Southeastern also achieved pass on all 6 monthly standards for 12 months. By achieving control performance standards within acceptable NERC standards Southeastern contributed to interconnected steady state frequency by balancing demand and supply in real time. Balanced supply and demand ensures safe and stable electric power grid operation.

Documentation: CPS 1 and CPS 2 reported to Southeastern Electricity Reliability Council Web Portal on Form P1T1.

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

G **Provide reliable service to customers each year by maintaining full compliance with North American Electric Reliability Council (NERC) and Southeastern Electric Reliability Council (SERC) operating policies and standards as a foundation for its operations reliability program. (PMA GG 4.51.02)**

Commentary: Maintaining full compliance with NERC and SERC operating policies demonstrates that Southeastern provides reliable customer service in accordance with industry standards. Each reliability standard supports one or more reliability principles, ensuring reliable system operation.

Documentation: SERC/NERC Compliance Reported to SERC Web Portal: Disturbance Control (Form P1T2); Compliance Issues (Form P2T1); Operator Training (Form P8T2).

Related Prior Year Target Performance: FY 2004: NA FY 2003: NA FY 2002: NA

Program Goal: Southeastern Power Administration (con't)

G **Repay 1 percent of the Federal investment each year. (PMA GG 4.51.03)**

Commentary: Preliminary results indicate that Southeastern will meet its FY 2005 planned repayment of $37 million (i.e., 1 percent of the Federal investment). On an annual basis, Southeastern repays the Federal debt and operating and maintenance expenses for the specific and joint costs allocated to power for 23 Federal water projects in the southeastern U.S. As a result of higher than expected rainfall in the third quarter of FY 2005, repayment is expected to be greater than the planned amount.

Documentation: Power Repayment Studies, Annual Report & Audited Financial Statements

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **R**

G **Provide $628 million in economic benefits to the region from the sale of hydroelectric power. (PMA GG 4.51.04)**

Commentary: Higher than expected rainfall in the third quarter of FY 2005 resulted in the greater than expected benefits. Economic benefits were approximately $707 million in FY 2005, which is greater than the forecast benefit of $628 million. Economic benefits are attributed to no fuel expenses and efficient dispatch into the power grid. Power values are based on operating parameters and the operating costs of alternative sources of power.

Documentation: Power Values: Corps of Engineers Hydropower Design Center, Portland, Oregon. Power Production: Corps of Engineers generating data from district offices.

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

FY 05	FY 04	FY 03	FY 02
G	G	Y	Y

Program Goal: Southwestern Power Administration Customers benefit from Federal power by purchasing and receiving low cost, reliable electricity from Federal multipurpose hydroelectric dams at cost-based rates that produce revenues sufficient to repay all power costs to the American taxpayers. (PMA GG 4.52)

Commentary: Achievement of associated annual targets related to reliability, repayment of the Federal investment, control of Southwestern's annual Operations and Maintenance costs, and economic benefits indicate that the program continues to meet its goal of efficiently and effectively marketing and delivering Federal hydropower.

FY 2005 Annual Targets

G **Meet industry averages for system reliability (CPS1: 171.64 and CPS2: 96.71). At a minimum, attain acceptable North American Electric Reliability Council (NERC) ratings for the following NERC Control Performance Standards (CPS) measuring the balance between power generation and load: 1) CPS1 which measures generation/load balance and support system frequency on one minute intervals (rating >100); and 2) CPS2 which limits any imbalance magnitude to acceptable levels (rating >90). (PMA GG 4.52.01)**

Commentary: Southwestern's average annual results for FY 2005 are 186.74 for CPS 1 and 99.40 for CPS 2. Southwestern achieved 6 out of 6 control compliance ratings. Achieving this target reflects Southwestern's ability to maintain acceptable power system operation for control area performance, thereby operating the power system efficiently and effectively.

Documentation: Monthly Resources Subcommittee CPS Reports (www.NERC.com/~filez/cpc.html)

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

G **Provide reliable service to customers annually under normal operations, by not allowing system voltage to fall below 95 percent of nominal (e.g. 161kV) for more than 30 minutes during any preventable condition. (PMA GG 4.52.02)**

Commentary: During FY 2005, Southwestern did not incur any violations where system voltage fell below 95 percent of nominal for more than 30 minutes of preventable condition. Achieving this target reflects Southwestern's ability to provide reliable service to customers each year, thereby maintaining power system reliability.

Documentation: Southwest Power Pool Outages Database, Southwestern's Official Supervisory Control And Data Acquisition (SCADA) Operational Logs.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

Program Goal: Southwestern Power Administration (con't)

G **Repay the Federal Investment within the required repayment period. (PMA GG 4.52.03)**

Commentary: Southwestern has achieved 100 percent, or $1,333,734, of required repayment of the Federal investment for FY 2005. Repayment of debt is a sound business practice in direct support of the program goal.

Documentation: Power Repayment Studies, Annual Report, Audited Financial Statements

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **Y** FY 2002: **G**

G **Provide power at the lowest possible cost by keeping average operation and maintenance cost per kilowatt-hour below the national average for hydropower. (PMA GG 4.52.04)**

Commentary: For FY 2005, Southwestern achieved $0.0109 cost per kilowatt-hour, which is less than the national industry average of $0.0126. Achieving this target reflects Southwestern's ability to control annual Operations and Maintenance costs, thereby providing power at the lowest possible cost.

Documentation: Southwestern's Financial Management System (Oracle Financials), U.S. Army Corps of Engineers Financial Data Reporting, Surveyed Utilities Financial Reporting to FERC.

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

G **Provide $457 million in economic benefits to the region from the sale of hydroelectric power (under average water conditions). (PMA GG 4.52.05)**

Commentary: During FY 2005, Southwestern achieved 106.8 percent, or $488 million, of the $457 million annual goal. Achieving this target reflects Southwestern's effort to provide economic benefits within its marketing area through the delivery of Federal hydropower, thereby advancing the President's commitment to provide both renewable and affordable energy to the nation, while reducing the nation's use of conventional fossil fueled energy.

Documentation: U.S. Army Corps of Engineers' (Corps) Greers Ferry Lake Reallocation Study (September 1997), Corps Hydropower Analysis Center Data, Corps Power Plant Reports, Southwestern's Annual Report, Southwestern's Marketing Plan.

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

FY 05	FY 04	FY 03	FY 02
G	G	G	G

Program Goal: Western Area Power Administration Ensure Federal hydropower is marketed and delivered while passing the North American Electric Reliability Council's (NERC) Control Compliance Ratings, meeting planned repayment targets, and achieving a recordable accident frequency rate at or below our safety performance standard. (PMA GG 4.53)

Commentary: Achievement of associated annual targets related to reliability, repayment of Federal investment and safety indicate that the program continues to meet its goal of efficiently and effectively marketing and delivering Federal hydropower.

FY 2005 Annual Targets

G **Attain acceptable North American Electric Reliability Council (NERC) ratings for the following NERC Control Performance Standards (CPS) measuring the balance between power generation and load: 1) CPS1 which measures generation/load balance and support sys tem frequency on one minute intervals (rating >100); and 2) CPS2 which limits any imbalance magnitude to acceptable levels (rating >90). (PMA GG 4.53.01)**

Commentary: For FY 2005, Western's CPS-1 and CPS-2 averages were 183.8 and 98.17, respectively. Achieving this target reflects Western's ability to maintain acceptable power system operation for control area performance, thereby operating the power system efficiently and effectively.

Documentation: Regional monthly compliance results are published on the NERC website (http://www.nerc.com/~filez/cpc.html)

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

G **Limit accountable customer and/or transmission element outages to not exceed the average number of outages for the past five years. (PMA GG 4.53.02)**

Commentary: Cumulative FY 2005 outages of 23 were within target, thus reliable customer service has been achieved.

Documentation: Performance standard and criteria for determining accountability developed internally as part of the Western Bonus Goal program (self-imposed reporting standard).

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

G **Maintain ratio of unanticipated repair work hours to total maintenance hours at 16 percent or less. (PMA GG 4.53.03)**

Commentary: Western's ratio of 7.1 percent is within the FY 2005 target of 16 percent or less. Thus, reliable customer service was achieved.

Documentation: Unanticipated repair work percentage is calculated using the "corrective and emergency maintenance" hours divided by the total maintenance hours recorded in Western's automated maintenance management system (MAXIMO).

Related Prior Year Target Performance: FY 2004: NA FY 2003: NA FY 2002: NA

Program Goal: Western Area Power Administration (con't)

G **Achieve a recordable accident frequency rate for recordable injuries per 200,000 hours worked of not greater than 3.3, or the latest published Bureau of Labor Statistics' industry rate, whichever is lower. (PMA GG 4.53.04)**

Commentary: Western's FY 2005 rate of 1.6 is below the annual targeted frequency rate of 3.3. Safety is a sound business practice toward achieving the program goal.

Documentation: Information is reported to DOE's Environment, Safety & Health Program Manager for Reporting Criteria on DOE Form 5484.4, Tabulation of Work Hours and Vehicle Usage & Property Valuation, and WAPA Form 5484.1, Individual Accident/Incident Report.

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

G **Ensure unpaid Federal Investment (UI) is equal to or less than the allowable unpaid investment (AUI). (PMA GG 4.53.05)**

Commentary: Collective repayment data for Western projects indicates that the ratio of UI to AUI is equal to or less than 1.00. Debt repayment is a sound business practice toward achieving the program goal.

Documentation: Long-term cumulative repayment performance is assessed twice annually (through project power repayment studies) as part of the power rate-setting process.

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

FY 05	FY 04	FY 03	FY 02
G	G	G	G

Program Goal: Bonneville Power Administration Ensure Federal hydropower is marketed and delivered while passing the North American Electric Reliability Council's (NERC) Control Compliance Ratings, meeting planned repayment targets, and achieving a recordable accident frequency rate at or below our safety performance standard. (PMA GG 4.54)

Commentary: Achieved annual reliability, repayment, safety, and heavy load hour availability targets indicating that the program continues to meet its goal of efficiently and effectively marketing and delivering Federal hydropower.

FY 2005 Annual Targets

G **Attain acceptable North American Electric Reliability Council (NERC) ratings for the following NERC Control Performance Standards (CPS) measuring the balance between power generation and load: 1) CPS1 which measures generation/load balance and support system frequency on one minute intervals (rating >100); and 2) CPS2 which limits any imbalance magnitude to acceptable levels (rating >90). (PMA GG 4.54.01)**

Commentary: Bonneville achieved pass ratings for CPS-1 in twelve of twelve months for an annual average of 196.6 percent and above the required threshold of 100 percent; and pass ratings for CPS-2 in eleven of twelve months for an annual average of 93.9 percent and above the required threshold of 90 percent. Meeting this performance target demonstrates Bonneville's continued focus on and commitment to delivering power reliably.

Documentation: Quarterly Findings Memo from the Bonneville Chief Operating Officer to the Bonneville Administrator.

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

G **Meet planned annual repayment of principal on Federal power investments. (PMA GG 4.54.02)**

Commentary: Bonneville made its annual Treasury payment in full and on time, with a FY 2005 Treasury principal amortization payment of $616 million, which included $303 million of planned principal amortization and $313 million of advanced principal amortization. Cumulative advanced amortization (principal repaid earlier than planned) at the end of FY 2005 totaled $1,459 million. For the 22nd straight year Bonneville has made its annual Treasury payment in full and on time, and meeting this performance target demonstrates Bonneville's commitment to meeting its obligations to U.S. taxpayers.

Documentation: Quarterly Findings Memo from the Bonneville Chief Operating Officer to the Bonneville Administrator.

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

Program Goal: Bonneville Power Administration (con't)

G **Achieve a recordable accident frequency rate (RAFR) of no more than 3.3 recordable injuries per 200,000 hours worked or the Bureau of Labor Statistics' industry rate, whichever is lower. (PMA GG 4.54.03)**

Commentary: Bonneville achieved its annual Recordable Accident Frequency Rate (RAFR) target with a RAFR of 2.5. Bonneville continues to strive for reduced injuries through a proactive safety program. Meeting this performance target demonstrates BPA's commitment to maintaining a safe work environment.

Documentation: Quarterly Findings Memo from the Bonneville Chief Operating Officer to the Bonneville Administrator.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **G**

G **Achieve 97 percent heavy load hour availability (HLHA) through efficient performance of Federal hydro-system processes and assets, including joint efforts of BPA, Army Corps of Engineers, and Bureau of Reclamation. (PMA GG 4.54.04)**

Commentary: Bonneville exceeded the 97 percent HLHA target and achieved a 100 percent HLHA result for the year. Meeting this performance target demonstrates Bonneville's commitment to efficiency and to improving the alignment of generation availability with water supply and market demand.

Documentation: Quarterly Findings Memo from the Bonneville Chief Operating Officer to the Bonneville Administrator.

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

FY 05	FY 04	FY 03	FY 02
G	G	G	G

Program Goal: Energy Information Administration (EIA) EIA's information program is relevant, reliable and consistent with changing industry structures, and EIA's products are accurate and timely. (EIA GG 4.61)

Commentary: EIA evaluates its progress toward meeting this goal by monitoring release schedules and customer satisfaction levels, and by conducting internal evaluations of its information accuracy and relevance. Successful completion of its corresponding annual targets indicates that EIA is achieving its program goal of informing sound policymaking, efficient energy markets and public understanding.

FY 2005 Annual Targets

G **Meet release date targets for 85 percent of EIA products. (EIA GG 4.61.01)**

Commentary: The program met release date targets for 90 percent of EIA products. Many energy markets rely on EIA data being available on a schedule, and by meeting these needs, EIA helps to promote efficient energy markets, and, to a lesser extent, sound policymaking and public understanding. Together, these help to promote a diverse supply and delivery of reliable, affordable, and environmentally sound energy, both now and in the future.

Documentation: EIA has selected products to track, covering weekly, monthly, quarterly, and annual products from all major offices, and is tracking the actual release dates.

Related Prior Year Target Performance: FY 2004: NA FY 2003: NA FY 2002: NA

G **Ensure 90 percent or more of customers rate themselves in customer surveys as satisfied or very satisfied with the quality of EIA information. (EIA GG 4.61.02)**

Commentary: 90 percent of customers rate themselves in customer surveys as satisfied or very satisfied with the quality of EIA information. EIA believes that the ratings and comments from our customers provide us with important insights into how our information is used, who the customers are, what they are looking for, and areas for future improvements. This feedback helps EIA to continue to provide high-quality and relevant information, which assists in the management of energy in the U.S. both now and in the future.

Documentation: American Customer Satisfaction Index (ASCI)

Related Prior Year Target Performance: FY 2004: NA FY 2003: NA FY 2002: NA

G **Ensure 70 percent of key EIA survey frames will have sufficient industry coverage to produce accurate supply, demand and price statistics. (EIA GG 4.61.03)**

Commentary: 86 percent of key EIA survey frames have sufficient industry coverage to produce accurate supply, demand and price statistics. By providing high-quality energy information, EIA contributes to sound policymaking, public understanding, and efficient energy markets. Providing high-quality data for emerging energy sources and changing usage patterns allows Congress and other branches of the department to accurately assess energy developments.

Documentation: On-going EIA team effort to address best practices for updating and documenting frames, and for providing greater efficiencies in sharing frame information among offices.

Related Prior Year Target Performance: FY 2004: NA FY 2003: NA FY 2002: NA

General Goal 5: Science

General Goal 5: World-Class Scientific Research Capacity

Provide world-class scientific research capacity needed to: ensure the success of Department missions in national and energy security; advance the frontiers of knowledge in physical sciences and areas of biological, medical, environmental, and computational sciences; or provide world-class research facilities for the Nation's science enterprise.

FY 2005 Annual Performance Targets

Green *(100%)*	Yellow *(=80%, <100%)*	Red *(<80%)*	Undetermined
25	0	2	0

FY 2005 Program Costs ($ in Millions): $3,565

FY05	FY04	FY03	FY02
Y	G	Y	Y

Program Goal: High Energy Physics (HEP) Understand the unification of fundamental particles and forces and the mysterious forms of unseen energy and matter that dominate the universe; search for possible new dimensions of space; and investigate the nature of time itself. (SC GG 5.19)

Commentary: Experiments at HEP accelerators are providing a better understanding of the origin of the universe and the relationship of fundamental forces. By studying the combining of particles and interactions into basic building blocks at high particle energies, we are increasing our knowledge of the forces that control the universe.

FY 2005 Annual Targets

G **Deliver at least 312 inverse picobarns (pb-1) of data to the CDF and D-Zero detectors at the Tevatron. (SC GG 5.19.01)**

Commentary: Delivered 598 pb-1 of data during FY 2005. Achieving this target produces experimental data that advances our knowledge of the nature of fundamental particles and the physical laws that govern matter, energy space and time.

Documentation: http://www-bdnew.fnal.gov/operations/lum/supertable.html This page, "Quarterly Performance Numbers," will list the number of inverse picobarns for each quarter of 2005.

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

G **Deliver at least 40 inverse femtobarns (fb-1) of data to the BABAR detector at the Stanford Linear Accelerator (SLAC) B-factory. (SC GG 5.19.02)**

Commentary: Delivered 53.5 fb-1 of data during FY 2005. Achieving this target produces experimental data that advances our knowledge of the nature of fundamental particles and the physical laws that govern matter, energy space and time.

Documentation: http://www.slac.standford.edu/grp/ad/PEPII_Run_Time_Statistics/PEP%20FY2003-5%20totals%20for%20DOE.pdf This page, "SLAC-PEPII Run Statistics," for the BABAR Detector and PEP-II B-factory, records its "data delivery" (in fb-1) and "unscheduled downtime."

Related Prior Year Target Performance: FY 2004: G FY 2003: R FY 2002: G

Program Goal: High Energy Physics (con't)

G **Maintain less than 10 percent cost-weighted mean percentage variances from established cost and schedule baselines for major construction, upgrade, or equipment procurement projects. (SC GG 5.19.03)**

Commentary: Annual cost-weighted percentage cost-variance for HEP projects was +2 percent. Annual cost-weighted percentage schedule-variance for HEP projects was -1 percent. Controlling project costs and meeting construction schedules enables the Department to conduct world-class scientific research across a wide-range of disciplines.

Documentation: Derived from Quarterly Project Reports to the Deputy Director for Science for the following projects: Neutrinos at the Main Injector (NuMI/MINOS); U.S. CMS; U.S. ATLAS; U.S. LHC Accelerator; Gamma-ray Large Area Space Telescope (GLAST/LAT).

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

R **Achieve 80 percent average operation time of the scientific user facilities (the Fermilab Tevatron and the Stanford Linear Accelerator (SLAC) B-factory (measured as a percentage of the total scheduled annual operating time). (SC GG 5.19.04)**

Commentary: Average operational time was 73 percent. Fermilab Tevatron operations met its goal, but the Stanford Linear Accelerator Center(SLAC) was shut down in early FY 2005 due to an accident which prevented operation of the B-Factory. This delayed optimal functionality of the facility in delivery of data to researchers.

The SLAC was the site of an unfortunate, yet avoidable, safety accident in October 2004. An electrician received serious burn injuries requiring hospitalization due to an electrical arc flash during installation of a circuit breaker. This incident resulted in a near fatality and immediate suspension of activities at SLAC. The HEP research activities involving SLAC were also frozen. After an extensive review and revision of safety procedures, the facility restarted operations in April 2005.

Action Plan: B-factory is now operational with uptime at an acceptable level; the program will continue facility operations into FY 2006 to meet operational uptime goal for FY 2006.

Documentation: Derived from letters from Lab Directors or designee. Fermi data are reported at http://www-bdnew.fnal.gov/operations/lum/supertable.html. SLAC data are reported at http://www.slac.standford.edu/grp/ad/PEPII_Run_Time_Statistics/PEP%20FY2003-5%20totals%20for%20DOE.pdf

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **G**

FY 05	FY 04	FY 03	FY 02
G	G	G	Y

Program Goal: Nuclear Physics (NP) Understand the evolution and structure of nuclear matter, from the smallest building blocks, quarks and gluons; to the elements in the universe created by stars; to unique isotopes created in the laboratory that exist at the limits of stability, possessing radically different properties from known matter. (SC GG 5.20)

Commentary: Experiments at Nuclear Physics Accelerator User Facilities substantially advance our understanding of nuclear matter and the early universe. They help the United States maintain a leading role in nuclear physics research, which has been central to the development of various technologies in the fields of nuclear energy, nuclear medicine, and national security. The highly trained scientific and technical personnel involved in fundamental nuclear physics are a valuable human resource for many applied fields.

FY 2005 Annual Targets

G **Record at least 20 and 2.4 billion events at the Argonne Tandem Linac Accelerator System (ATLAS) and Holifield Radioactive Ion Beam Facilities (HRIBF), respectively. (SC GG 5.20.01)**

Commentary: Achieved 28.1 billion events at ATLAS and 3.76 billion events at HRIBF during FY 2005. Achieving these high recording rates is accelerating scientific research in the areas of nuclear properties. Scientists accelerate and collide radioactive and stable beams on targets to investigate new regions of nuclear structure, studying interactions in nuclear matter like those occurring in neutron stars, and determining the reactions that created the nuclei of the chemical elements inside stars and supernovae.

Documentation: Official correspondence from Argonne National Laboratory and Oak Ridge National Laboratory management to NP Office reporting and certifying accuracy of recorded number of events at ATLAS and HRIBF.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

G **Record at least 2.3, 7.7, and 2.2 billion events through experiments in Hall A, Hall B, and Hall C, respectively, at the Continuous Electron Beam Accelerator Facility (CEBAF). (SC GG 5.20.02)**

Commentary: Recorded 2.83 billion events in Hall A; 8.06 billion events in Hall B; and 2.11 billion events in Hall C during FY 2005. Achieving this target allows scientists to study the structure of the nucleon and light nuclei. These accomplishments allow precise measurements of fundamental properties of the proton, neutron and simple nuclei for comparison with theoretical calculations to provide a quantitative understanding of the quark sub-structure.

Documentation: Official correspondence from Thomas Jefferson National Accelerator Facility management to NP Office reporting and certifying accuracy of recorded number of events in Hall A, B, C at CEBAF.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

Program Goal: Nuclear Physics (con't)

G **Sample at least 1300 million heavy-ion collision events by the PHENIX detector, and record at least 28 million heavy-ion collision events by the STAR detector at the Relativistic Heavy Ion Collider (RHIC). (SC GG 5.20.03)**

Commentary: Sampled 8600 million events in PHENIX and STAR recorded 116.8 million events during FY 2005. Achieving this target allows scientists to study heavy-ion collision events that create new forms of hot, dense nuclear matter and to probe their properties. These higher recording rates help the nation maintain its world-class position in this field of study.

Documentation: Official correspondence from Brookhaven National Laboratory management to NP Office reporting and certifying accuracy of recorded number of events by PHENIX and STAR at RHIC.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **G**

G **Achieve 80 percent average operation time of the scientific user facilities (measured as a percentage of the total scheduled annual operating time). (SC GG 5.20.04)**

Commentary: NP user facilities achieved 87 percent reliability of uptime/scheduled time during FY 2005. By achieving this target, scientists can optimally use the facilty's capability and optimize operation time studying nuclear physics. The level of reliability is a key characteristic of a "world-class" research facility.

Documentation: Official correspondence from Argonne National Laboratory (ATLAS), Brookhaven National Laboratory (RHIC), Oak Ridge National Laboratory (HRIBF), and Thomas Jefferson National Accelerator Facility (CEBAF) management to NP Office reporting and certifying annual achieved operation time of the user facility; NP program office worksheet showing subsequent calculation and compiled average of the achieved operation time as percent of total scheduled annual operating time.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **G**

FY 05	FY 04	FY 03	FY 02
Y	G	G	Y

Program Goal: Biological and Environmental Research (BER) Provide the biological and environmental discoveries necessary to clean and protect our environment, offer new energy alternatives, and fundamentally alter the future of medical care and human health. (SC GG 5.21)

Commentary: Manipulation of matter by BER at the micro, nano, and molecular scales fuels progress towards revealing the mechanisms and fundamental secrets of biological and environmental systems. This progress will allow modeling and prediction of biological and environmental interactions on a regional and global basis.

FY 2005 Annual Targets

G **Conduct two sets of field experiments to evaluate biological reduction of chromium and uranium by microorganisms and compare the results to laboratory studies to understand the long term fate and transport of these elements in field settings. (SC GG 5.21.01)**

Commentary: Determined the scalability of laboratory results through field experiments to evaluate biological reduction of chromium and uranium. Stimulated microbial reduction of uranium and chromium at field scale mirrors processes observed at the lab scale by substantially lowering soluble concentrations of these contaminants. Achieving this target allows evaluation of the long-term fate and transport of biologically reduced chromium and uranium by native microorganisms for subsequent use in bioremediation.

Documentation: Emails reporting the results and publication/availability of the results. The e-mails may be found at http://www.lbl.gov/NABIR/generalinfo/

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

G **Sequence at least 28 billion base pairs of high quality (less than one error in 10,000 bases) DNA microbial and model organism genomes. (SC GG 5.21.02)**

Commentary: Determined 33.61 billion base pairs of high quality DNA sequence during FY 2005. Achieving this target increases our body of knowledge to enable high-quality sequencing of DNA.

Documentation: Emails reporting the results and data availability. The e-mails may be found at http://www.jgi.doe.gov/sequencing/statistics.html

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: R

Program Goal: Biological and Environmental Research (con't)

G **Implement three separate component submodels (an interactive carbon cycle submodel, a secondary sulfur aerosol submodel, and an interactive terrestrial biosphere submodel) within a climate model and conduct 3-4 year duration climate simulation using the fully coupled model. (SC GG 5.21.03)**

Commentary: The program implemented a five year simulation of the complete coupled model, including a carbon cycle submodel, a secondary sulfur aerosol submodel, and an interactive terrestrial biosphere submodel. Achieving this target permits the implementation of climate models and moves the program closer to climate simulations that will help determine energy policy relative to global climate change.

Documentation: Emails reporting the results and publication/availability of the results. The e-mails may be found at http://asd.llnl.gov/asc/

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **Y**

G **Achieve greater than 90 percent average operation time of the (climate change) scientific user facilities (measured as a percentage of the total scheduled annual operating time). (SC GG 5.21.04)**

Commentary: BER scientific user facilities operated on schedule to achieve the FY 2005 target. Achieving this target ensures that the scientific user facilities achieve operating times consistent with the full use of the resources.

Documentation: Emails reporting the results and data availability. For ARM Climate Research Facilities, e-mails may be found at: http://www.arm.gov/acrf/opsstats.stm For Free Air Carbon Dioxide Enrichment (FACE) Facilities, e-mails may be found at: http://www.unlv.edu/Climate_Change_Research/NDFF/performance.htm (Nevada Test Site); http://www.esd.ornl.gov/facilities/ORNL-FACE/userfacility.html (Oak Ridge National Laboratory) http://face.env.duke.edu/performance.cfm (Duke); and http://aspenface.mtu.edu/performance.htm (Rhinelander, Wisconsin).

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **G**

G **Achieve greater than 90 percent average operation time of the (environment) scientific user facilities (measured as a percentage of the total scheduled annual operating time.) (SC GG 5.21.05)**

Commentary: The Environmental Molecular Sciences Laboratory (EMSL) operated for a total of 4355 hours (99.7 percent of available hours) during FY 2005. Achieving this target ensures that the scientific user facilities achieve operating times consistent with the full use of the resources.

Documentation: Emails reporting the results and data availability. The e-mails may be found at: http://www.emsl.pnl.gov/homes/hours.shtml (EMSL).

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **G**

Program Goal: Biological and Environmental Research (con't)

G **Achieve greater than 90 percent average operation time of the (life sciences) scientific user facilities (measured as a percentage of the total scheduled annual operating time). (SC GG 5.21.06)**

Commentary: During FY 2005, the Center for Comparative and Functional Genomics operated 3,536 hours, which is 100 percent of the goal for FY 2005. Achieving this target ensures that the scientific user facilities achieve operating times consistent with the full use of the resources.

Documentation: Emails reporting the results and data availability. The e-mails may be found at: http://www.ornl.gov/sci/mgrf/facilities.shtml (Center for Comparative and Functional Genomics); and http://www.jgi.doe.gov/sequencing/statistics.html (Production Genomics Facility).

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **G**

R **Complete fabrication of 60 microelectrode array for use as an artificial retina and insert prototype device into blind patient. (SC GG 5.21.07)**

Commentary: The fabrication of the 60 microelectrode array to be used as an artificial retina has been completed. However, Federal Drug Administration (FDA) approval to implant the prototype device into blind patients was not achieved as initially planned.

Action Plan: Discussions have been held with the FDA, and approval to insert 60 microelectrode arrays into patients is expected in the second quarter of FY 2006. Achieving this target will allow scientists to replicate human function and advance blind patient sight, spurring R&D for other prostheses/organs.

Documentation: Emails reporting results, publication, and availability of the results may be found at http://www.doemedicalsciences.org/abt/retina/retinas.shtml

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

FY 05	FY 04	FY 03	FY 02
G	G	G	G

Program Goal: Basic Energy Sciences (BES) Provide the scientific knowledge and tools to achieve energy independence, securing U.S. leadership and essential breakthroughs in basic energy sciences. (SC GG 5.22)

Commentary: Progress continues to be made towards understanding the behavior of large assemblies of interacting components and observing and manipulating matter at the molecular scale.

FY 2005 Annual Targets

G **Demonstrate an X-ray pulse of less than 100 femtoseconds in duration and containing more than 100 million photons per pulse. (SC GG 5.22.01)**

Commentary: 70 femtosecond pulses with 100 million photons per pulse were measured during FY 2005. Achieving this target improves how well scientists can "see" fast events, such as chemical reactions and the folding of proteins.

Documentation: Report(s) from the research performer(s) with references to the source documentation that contains the final results for this Annual Target reside in the files of the Office of Basic Energy Sciences, within the Department's Office of Science.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

G **Demonstrate first measurement of spatial resolutions for imaging in the hard and soft x-ray Regions (less than 100 and 18 nanometers, respectively), and spatial information limit for an electron microscope (less than 0.08 nanometers). (SC GG 5.22.02)**

Commentary: The following was achieved during FY 2005: Hard x-ray - 90 nanometers, Soft x-ray - 15 nanometers, Electron microscope - 0.078 nanometers. Achieving this target improves the clarity with which scientists can "see" very small objects such as viruses or even atoms, which have a size on the scale of nanometers.

Documentation: Report(s) from the research performer(s) with references to the source documentation that contains the final results for this Annual Target reside in the files of the Office of Basic Energy Sciences, within the Department's Office of Science.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

Program Goal: Basic Energy Sciences (con't)

G **Achieve greater than 10 reacting species and greater than 0.2 billion grid points in a three-dimensional combustion reacting flow computer simulation, as a part of the Scientific Discovery through Advanced Computing (SciDAC). (SC GG 5.22.03)**

Commentary: Eleven reacting species and 0.5 billion grid points were achieved during FY 2005. Achieving this target allows scientists to improve our ability to simulate real-world conditions for combustion. Understanding combustion and the ability to accurately conduct simulations is essential to developing more efficient and catalysis technologies.

Documentation: Report(s) from the research performer(s) with references to the source documentation that contain the final results for this Annual Target reside in the files of the Office of Basic Energy Sciences, within the Department's Office of Science.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

G **Achieve less than 10 percent cost-weighted mean percent variance from established cost and schedule baselines for major construction, upgrade, or equipment procurement projects. (SC GG 5.22.04)**

Commentary: During FY 2005, a +0.1 percent cost variance and a -1.2 percent schedule variance was achieved. Achieving this target improves our scientific efficiency and capability in major construction, upgrades, or equipment procurement. Controlling construction costs and meeting project schedules enables state-of-the-art research facilities to be available in time to maintain our world-leader status.

Documentation: Supporting documents reside in the Department's Office of Engineering and Construction Management's Project Assessment and Reporting System (PARS), and with Basic Energy Science's Division of Scientific User Facilities, within the Office of Science.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **G**

G **Achieve greater than 90 percent average operation time of the scientific user facilities (measured as a percentage of the total scheduled annual operating time). (SC GG 5.22.05)**

Commentary: During FY 2005, 97.7 percent average annual operating time at BES facilities as a percentage of planned scheduled time was achieved (i.e., 29,108 actual total hours delivered to users versus 29,800 total planned hours). Achieving this target ensures full use of the seven scientific user facilities and justifies investments in crucial, yet expensive, user facilities.

Documentation: Supporting documents consist of the required annual reports submitted to BES by all BES user facilities at the completion of each fiscal year. These final reports reside in the files of the Office of Basic Energy Sciences, within the Department's Office of Science.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **G**

FY 05	FY 04	FY 03	FY 02
G	Y	Y	G

Program Goal: Advanced Scientific Computing Research (ASCR) Deliver forefront computational and networking capabilities to scientists nationwide that enable them to extend the frontiers of science, answering critical questions that range from the function of living cells to the power of fusion energy. (SC GG 5.23)

Commentary: Progress continues to be made towards propelling scientific computing to the forefront of discovery. Scientific computing joins theory and experiment to enable researchers to make scientific progress.

FY 2005 Annual Targets

G **Achieve less than 10 percent within original baseline cost for completed procurements of major computer systems or network services, and achieve 10 percent within original performance baseline versus integrated performance over the life of the contracts. (SC GG 5.23.01)**

Commentary: National Energy Research Scientific Computing Center (NERSC) New Computational System (NCS) procurement was completed within 10 percent of baselines. Common Access Interface (CCS/LCC) procurement was completed on schedule per Baseline established. Achieving this target will ensure computer and network procurement and contract effectiveness, thus delivering state-of-the-art computing quickly to the scientist.

Documentation: Official correspondence from Lawrence Berkeley National Laboratory and Oak Ridge National Laboratory management to ASCR certifying progress against original baseline cost and performance profiles of: NERSC NCS procurement and ORNL CCS LCC procurement.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

G **Focus usage of the primary supercomputer at the National Energy Research Scientific Computing Center (NERSC) on capability computing. Achieve 40 percent of computing time used that is accounted for by computations that require at least one-eighth of the total resource. (SC GG 5.23.02)**

Commentary: During FY 2005, 67.5 percent of the computing time of NERSC was for jobs that required at least 512 processors (one-eighth of the total resource). Achieving this target will increase usage of the primary supercomputer for capability computing, and increase large-scale computations for Office of Science missions.

Documentation: Usage data is available at: https://athena.nersc.gov/SPdocs/ (userid and password required, to be provided upon request).

Related Prior Year Target Performance: FY 2004: R FY 2003: NA FY 2002: NA

Program Goal: Advanced Scientific Computing Research (ASCR) (con't)

G

Achieve greater than 50 percent average increase in the computational effectiveness (either by simulating the same problem in less time or simulating a larger problem in the same time) of a subset of application codes within the Scientific Discovery through Advanced Computing (SciDAC) effort. (SC GG 5.23.03)

Commentary: Five SciDAC applications were benchmarked to determine initial performance and current capability. Measured increases in code application effectiveness ranged from 54 percent to 81 percent with an average increase of approximately 65 percent. In two code applications significant new science was incorporated into the application codes with no increease in (computer) execution time. Achieving this target maximizes computational effectiveness in crucial areas, applying computational capabilities to other scientific endeavors within the Department and the SciDAC program.

Documentation: Results are documented in the October 6, 2005 report entitled, "Application Software Case Studies in FY 2005 for the Mathematical, Information and Computational Sciences Office of the U.S.," available from the Department's Office of Science.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

FY 05	FY 04	FY 03	FY 02
G	G	Y	G

Program Goal: Fusion Energy Research (FES) Answer the key scientific questions and overcome enormous technical challenges to harness the power that fuels a star, realizing by the middle of this century a landmark scientific achievement by bringing "fusion power to the grid." (SC GG 5.24)

Commentary: Progress in FES makes possible a science-based energy source that fuels a star and also powers our industries and homes. This momentous scientific achievement will be fusion energy.

FY 2005 Annual Targets

G

Measure plasma behavior in Alcator C-Mod with high-Z antenna guards and input power > 3.5 MW, contributing toward the predictive capability for burning plasmas and configuration optimization. (SC GG 5.24.01)

Commentary: During FY 2005, the program measured plasma behavior in Alcator C-Mod with high-Z antenna guards and input power > 3.5 MW. The improvements found in using all-metal walls over boron-nitride tiles were highly encouraging, and provide important data for a critical component of the ITER project. Scientists are now obtaining data on plasma behavior needed to eventually predict the performance of burning plasmas in ITER and beyond, thereby advancing the President's commitment to make ITER a success and to make science a national priority.

Documentation: http://www.ofes.fusion.doe.gov/ProgramTargets/ProgramTargets.htm

Related Prior Year Target Performance: FY 2004: NA FY 2003: NA FY 2002: NA

Program Goal: Fusion Energy Research (con't)

G **Simulate nonlinear plasma edge phenomena using extended magnetohydrodynamic (MHD) codes with a resolution equal to 20 torioidal modes. (SC GG 5.24.02)**

Commentary: During FY 2005, the program simulated nonlinear plasma edge phenomena using extended magnetohydrodynamic (MHD) codes with a resolution equal to 20 torioidal modes. This work has enabled new insights into the global dynamics of edge localized modes (ELMs) in tokamaks, and their interaction with plasma facing components. Achieving this target allows scientists to simulate nonlinear plasma edge phenomena for optimizing confinement and predicting the behavior of burning plasmas in ITER, thereby advancing the President's commitment to make science a national priority.

Documentation: http://www.ofes.fusion.doe.gov/ProgramTargets/ProgramTargets.htm

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

G **Achieve greater than 90 percent average operation time of the major national fusion facilities (DIII-D, Alcator C-Mod, NSTX) measured as a percentage of the total planned operation time. (SC GG 5.24.03)**

Commentary: During FY 2005, all FES scientific user facilities operated on schedule, completing a total of 52 run weeks, exceeding the planned operation time (48 weeks) and the annual target (43 weeks). Achieving this target optimizes the use and operation times in three major national fusion facilities, thereby enabling timely completion of fusion related experiments designed to answer key plasma confinement questions.

Documentation: http://www.ofes.fusion.doe.gov/ProgramTargets/ProgramTargets.htm

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **R** FY 2002: **G**

G **Achieve less than 10 percent cost-weighted mean percent variance from established cost and schedule baselines for major construction, upgrade, or equipment procurement projects. (SC GG 5.24.04)**

Commentary: The program achieved less than 10 percent cost-weighted mean percent variance from established cost and schedule baselines for major construction, upgrade, or equipment procurement projects. Achieving this target improves our scientific efficiency and capability in major construction, upgrades, or equipment procurement, thereby advancing the President's commitment to make science a national priority.

Documentation: http://www.ofes.fusion.doe.gov/ProgramTargets/ProgramTargets.htm

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **G**

General Goal 6: Environmental Management

General Goal 6: Environmental Management

Accelerate cleanup of nuclear weapons manufacturing and testing sites, completing cleanup of 108 contaminated sites by 2025.

FY 2005 Annual Performance Targets

Green *(100%)*	Yellow *(=80%, <100%)*	Red *(<80%)*	Undetermined
5	2	2	0

FY 2005 Program Costs ($ in Millions): $6,719

FY 05	FY 04	FY 03	FY 02
Y	R	Y	Y

Program Goal: Environmental Management Based on EM's accelerated risk reduction and site closure initiative, EM is targeting 89 and 100 geographic sites to be completed by the end of FY 2006 and FY 2012, respectively. (EM GG 6.18)

Commentary: EM's FY 2005 achievements include completing the packaging of all remaining plutonium metals, exceeding targets for packaging enriched uranium and high level waste for secure storage until disposition in a geologic repository, and exceeding targets for completing remediation work at nuclear facilities and release sites. These achievements demonstrate the focus of the EM program to deliver significant reduction in environmental, safety, and security risks. While EM was not successful in completing remediation at Amchitka Island in Alaska and the Laboratory for Energy-Related Health Research in California, or in meeting the targets for disposal of transuranic waste, closing liquid waste tanks, packaging plutonium and uranium residues for disposition, or completing remediation work at radioactive facilities, the EM program did ensure that its cleanup efforts across the Department's complex continue to be safe for workers and protective of the environment. EM is evaluating its schedule priorities for completing remediation work across the complex and will provide a schedule in the FY 2007 budget submittal to Congress.

FY 2005 Annual Targets

R **Dispose at the Waste Isolation Pilot Plant (WIPP) a cumulative total of 40,711 m3 of transuranic (TRU) waste. (EM GG 6.18.01)**

Commentary: Due to waste characterization delays at Idaho and Los Alamos National Laboratories, EM is currently behind its lifecycle schedule, having disposed of only 6,733 cubic meters in FY 2005 for a cumulative total of 27,875 cubic meters of TRU waste. However, EM achieved a major environmental accomplishment at the Rocky Flats site disposing of the last TRU waste from the site in the third quarter of FY 2005, demonstrating definite, measurable progress by EM in reducing risk and completing cleanup.

Plan of Action: EM has improved waste characterization procedures and has resumed sustained shipments of TRU waste from Los Alamos National Laboratory and Idaho National Laboratory. EM is evaluating its schedule priorities for disposing TRU waste from across the complex and will provide a schedule based on reestablished priorities in the FY 2007 budget submittal to Congress.

Documentation: Shipping manifests on file at applicable sites.

Related Prior Year Target Performance: FY 2004: **R** FY 2003: **G** FY 2002: **G**

Program Goal: Environmental Management (con't)

R **Close a cumulative total of 20 liquid waste tanks. (EM GG 6.18.02)**

Commentary: Treatment of liquid waste in tanks, and thereby closure of those tanks, at Hanford, Idaho, and Savannah River Site has been limited due to the Waste Incidental to Reprocessing (WIR) lawsuit decision in July 2003, resulting in no tanks closed in FY 2005 for a cumulative total of 2 tanks closed overall. Not accomplishing this measure as scheduled could result in the Department not meeting its goals for accelerated cleanup at these sites.

Plan of Action: Congress has provided legislative authority for DOE to make waste classification decisions at Savannah River Site and Idaho, allowing the treatment and disposal of liquid waste, and the eventual closure of tanks. The Savannah River Site has developed its first waste determination under the new legislation and has submitted it to the United States Nuclear Regulatory Commission for review and comment. EM is evaluating its schedule priorities for closing liquid waste tanks across the complex and will provide a schedule based on reestablished priorities in the FY 2007 budget submittal to Congress.

Documentation: Written documentation from State and Federal Regulators documenting approval of closed/emptied tanks, on file at applicable sites.

Related Prior Year Target Performance: FY 2004: **R** FY 2003: **R** FY 2002: **NA**

G **Package for disposition a cumulative total of 2,227 containers of high level waste. (EM GG 6.18.03)**

Commentary: The Defense Waste Processing Facility at the Savannah River Site continues to perform well by packaging for disposition 257 containers in FY 2005 for a cumulative total of 2,244 containers of high level waste. Completing this activity ahead of schedule results in a significant reduction in environmental, safety, and security risks.

Documentation: Quality Assurance Inspection records for waste packaging on file at applicable sites.

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **Y** FY 2002: **Y**

G **Package for disposition a cumulative total of 3,648 enriched uranium containers. (EM GG 6.18.04)**

Commentary: Schedule accelerations at Idaho, Hanford, and Savannah River have resulted in the Department packaging 2,313 containers in FY 2005 for a cumulative total of 5,541 enriched uranium containers. By exceeding its target for this activity ahead of schedule, EM has significantly reduced environmental, safety, and security risks.

Documentation: Shipping manifests and disposal records on file at applicable sites.

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **R** FY 2002: **NA**

Program Goal: Environmental Management (con't)

Y **Package for disposition a cumulative total of 107,989 kg of bulk plutonium and uranium residues. (EM GG 6.18.05)**

Commentary: Due to difficulties in processing materials at the Savannah River Site, EM was able to only package for disposition 51 kg in FY 2005 for a cumulative total of 107,790 kilograms of bulk plutonium and uranium residues. Failing to accomplish this measure on schedule could result in the Department not meeting its goals for accelerated site closure.

Plan of Action: Savannah River has been able to resolve its processing problems. EM is evaluating its schedule priorities for packaging bulk plutonium and uranium residues across the complex and will provide a schedule based on reestablished priorities in the FY 2007 budget submittal to Congress.

Documentation: Facility Inventory Process Ledgers on file at Savannah River Site.

Related Prior Year Target Performance: FY 2004: **R** FY 2003: **G** FY 2002: **G**

G **Complete remediation work at a cumulative total of 42 nuclear facilities. (EM GG 6.18.06)**

Commentary: Work is proceeding ahead of schedule at Idaho, Rocky Flats, and Ohio, resulting in completion of remediation at 25 nuclear facilities in FY 2005 for a cumulative total of 59 nuclear facilities overall. This demonstrates the ability of the EM program to deliver significant reduction in environmental, safety, and security risks.

Documentation: Facility Decommissioning Project Final Report or State and Federal regulator acceptance of facility completion report. Both on-file at applicable sites.

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **G** FY 2002: **NA**

Y **Complete remediation work at a cumulative total of 257 radioactive facilities. (EM GG 6.18.07)**

Commentary: In FY 2005, 45 radioactive facilities were completed for a cumulative total of 238 radioactive facilities overall; 19 facilities short of meeting EM's target. Failing to accomplish this measure on schedule could result in the Department not meeting its goals for accelerated site closure.

Plan of Action: EM is evaluating its schedule priorities for completing radioactive facilities across the complex and will provide a schedule based on reestablished priorities in the FY 2007 budget submittal to Congress.

Documentation: Facility Decommissioning Project Final Report or State and Federal regulator acceptance of facility completion report. Both on-file at applicable sites.

Related Prior Year Target Performance: FY 2004: **Y** FY 2003: **G** FY 2002: **NA**

Program Goal: Environmental Management (con't)

G **Complete remediation work at a cumulative total of 5,669 release sites. (EM GG 6.18.08)**

Commentary: Work is proceeding ahead of schedule at Rocky Flats, Lawrence Livermore, Pantex, and Nevada resulting in completion of remediation work at 369 release sites in FY 2005 for a cumulative total of 5,858 release sites overall. Completing this activity ahead of schedule results in a significant reduction in environmental, safety, and security risks.

Documentation: State and Federal regulator acceptance of Remedial Action Report on file at applicable sites.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **G**

FY 05	FY 04	FY 03	FY 02
G	G	NA	NA

Program Goal: Legacy Management Ensure that the Department's long-term agreements and legal commitments to environmental stewardship and to former contractor employees are satisfied. (LM GG 6.26)

Commentary: By managing the long-term surveillance and maintenance at sites where remediation has been completed, the Departmental is better able to concentrate efforts on continuing to accelerate cleanup and site closure resulting in reduced risks to human health and the environment and reduced landlord costs.

FY 2005 Annual Targets

G **Ensure continued effectiveness of cleanup remedies through surveillance and maintenance activities at 67 sites, including Pinellas and Maxey Flats, in accordance with legal agreements. (LM GG 6.26.01)**

Commentary: By completing the target number of inspections, the Office of Legacy Management is able to demonstrate that cleanup remedies remain effective in reducing risks to human health and the environment to safe levels. This directly supports the program goal of managing land, structures, and facilities in accordance with legal and regulatory commitments of the Department.

Documentation: Documentation of inspections is of file at the Department's Grand Junction Office.

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

General Goal 7: Nuclear Waste

General Goal 7: Nuclear Waste

License and construct a permanent repository for nuclear waste at Yucca Mountain and begin acceptance of waste.

FY 2005 Annual Performance Targets

Green *(100%)*	Yellow *(=80%, <100%)*	Red *(<80%)*	Undetermined
3	0	1	0

FY 2005 Program Costs ($ in Millions): $521

FY 05	FY 04	FY 03	FY 02
R	G	R	G

Program Goal: Nuclear Waste Disposal License and construct a permanent repository for nuclear waste at Yucca Mountain and begin acceptance of waste. (RW GG 7.25)

Commentary: The Department of Energy's Office of Civilian Radioactive Waste Management (OCRWM) made progress in FY 2005 in beginning to develop a transportation system for an operating permanent nuclear waste repository. However, due to some technical issues, but primarily legal and regulatory issues involving establishment of a radiation standard and the Licensing Support Network, the Department is behind schedule (which it is currently reassessing) in the process to obtain a license to construct a permanent repository for nuclear waste.

FY 2005 Annual Targets

R **Complete draft License Application documents incorporating improvements in safety analysis and design. (RW GG 7.25.01)**

Commentary: OCRWM decided that the draft license application should not be submitted until issues including fuel oxidation, the Environmental Protection Agency's (EPA) radiation standard, and the infiltration model have been resolved. While this decision resulted in the Department not meeting the target as scheduled, resolution of the issues will enable the Department to submit a defensible license application to construct and operate a permanent repository for nuclear waste.

Plan of Action: The fuel oxidation issue will be addressed through a revision to the design of the surface facilities while the infiltration model estimates will be addressed through replacement or revalidation of U.S. Geological Survey models, documents, and data. The issue of EPA's radiation standard is dependent on the issuance of a final rule by EPA and the Nuclear Regulatory Commission's incorporation of that standard into 10 CFR 63. While work has been initiated to demonstrate compliance with the draft rule, adjustments to the Department's approach may be required if the proposed standard changes upon final issuance. Schedules to accomplish this work are in development.

Documentation: Letter from contractor transmitting the draft License Application.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **Y** FY 2002: **G**

Program Goal: Nuclear Waste Disposal (con't)

G **Complete processing of documents and e-mails (dated January 1, 2005 or earlier) to be ready for the Licensing Support Network (LSN). (RW GG 7.25.02)**

Commentary: In response to a motion from the State of Nevada, the Nuclear Regulatory Commission's Pre-Application Presiding Officer Board ordered DOE to produce the draft license applications on the LSN. Therefore, while all documents and e-mails dated January 1, 2005, or earlier have been processed to DOE's website, the submission of DOE's LSN certification is on hold pending a ruling on DOE and NRC appeals to this order and on completion of internal verifications to ensure all requirements have been met. Submission of the LSN is a critical component of the process to obtain a license to construct and operate a permanent nuclear waste repository.

Documentation: Transmittal of documents and e-mails to the Department's website.

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

G **Submit the preliminary draft Environmental Impact Statement (EIS), prepared by the EIS contractor, for DOE internal review. (RW GG 7.25.03)**

Commentary: The Department began internal review of the preliminary draft Nevada Rail Line Environmental Impact Statement (EIS) subsequent to receiving it on August 5, 2005. This EIS is a necessary step in the development of a transportation system for operating the permanent nuclear waste repository.

Documentation: Letter from the EIS contractor to the Department submitting the preliminary Draft Rail Alignment EIS.

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

G **Reduce project management costs for the OCRWM management and operating contractor one percent annually from an FY 2003 level of 17 percent to a level of 15 percent in FY 2005; project management costs will not exceed 14 percent of the total costs by FY 2006. (RW GG 7.25.04)**

Commentary: Reducing overhead costs to 10 percent in FY 2005 helps OCRWM minimize overall project costs. These savings then become available for other OCRWM projects needed to reach the program goal. While OCRWM met the target, improvements to the management and operating contractor's cost and performance reporting systems and procedures are needed to ensure accuracy of data reported. It is important to be able to have accurate cost and schedule data so that management can better track progress of the project to construct the permanent waste repository.

Documentation: Monthly Cost and Performance Report for September 2005.

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

Status of Unmet FY 2004 Performance Targets

Goal 1: Nuclear Weapons Stewardship

Measure (PAR)	Description of Goal	FY 04 PAR (Page No.)	Crosswalk to FY 05 Program Goal
DP 1.27.3	Complete 95% of all PCD-scheduled activity. Finish 100% of all prior year non-completed scheduled evaluations.	84	NA 1.27

Status: MET. Seven Disassembly and Inspections (D&I) in unmet portion of target were rolled into a FY 2005 target as "prior year" and completed in FY 2005. The four W84 D&Is were not included in the FY 2005 schedule and cannot be separately tracked.

DP 1.27.5	Complete 75% of W76-1 Phase 6.3 (FY03 - 50%). Complete 10% of Phase 6.4 (FY03 - 0%).	85	NA 1.27

Status: MET. The Design Review and Acceptance Group met in the first quarter of FY 2005 and DoD provided design concurrence. The Full Scale Engineering Development schedule was approved in the first quarter of FY 2005. The unmet portion of the FY 2004 target (6%) was completed in FY 2005.

DP 1.27.6	Complete 70% of W80-3 Phase 6.3 (FY03 - 55%). Complete 10% of W80-3 Phase 6.4 (FY03 - 0%).	85	NA 1.27

Status: MET. Completed actions necessary for Phase 6.4 authorization, which was received in April 2005. Met target portions of Phase 6.4 activity in FY 2005.

DP 1.28.2	Complete 100% of the external technical review of required work on the Dual-Axis Radiographic Hydrotest (DARHT) facility and plans for completion of DARHT Second Axis.	88	NA 1.28

Status: MET. Unmet portion of target (DARHT External Review) was completed in the second quarter of FY 2005.

DP 1.28.4	Execute the planned hydrodynamic experiments on DARHT and Container Firing Facility (CFF)/Flash X-Ray (FXR) at Los Alamos and Lawrence Livermore National Laboratories.	89	NA 1.28

Status: MET. A corrective action plan was developed and approved. Unmet portion of FY 2004 target (3 shots) was completed in FY 2005.

DP 1.30.1	Complete 63% of progress towards creating and measuring extreme temperature and pressure conditions for the FY2010 nuclear stockpile stewardship requirements.	93	NA 1.30

Status: MET. Schedule was defined and approved. The unmet portion of target (1 milestone) was completed in the fourth quarter of FY 2005.

Measure (PAR)	Description of Goal	FY 04 PAR (Page No.)	Crosswalk to FY 05 Program Goal
DP 1.30.2	Complete 63% of progress towards demonstrating ignition (simulating fusion condition in a nuclear explosion) at the National Ignition Facility (NIF) to increase confidence in modeling weapons performance.	94	NA 1.30

Status: MET. Schedule was defined and approved. The unmet portion of FY 2004 target (1 milestone) was completed in the third quarter of FY 2005.

DP 1.30.4	Complete 16% (cumulative) of equipment fabricated to support ignition experiments at NIF.	94	NA 1.30

Status: MET. Revised schedule was implemented. The unmet portion of FY 2004 target (1 milestone - 4%) was completed in the second quarter of FY 2005.

DP 1.31.3	Achieve 40 TeraOPS (with 10 TeraBytes memory and 240 TeraBytes storage).	97	NA 1.31

Status: MET. The unmet portion of FY 2004 target (delivery and operation of Red Storm platform with 40 TeraOPS capability) was completed in the second quarter of FY 2005.

DP 1.31.5	Achieve an average cost of $8.15M/TeraOPS.	98	NA 1.31

Status: MET. With delivery of Red Storm platform, this target was achieved in the second quarter of FY 2005 ($8.15M/TeraOPS).

DP 1.32.1	Manufacture 6 (for total of 8) W88 pits.	99	NA 1.32

Status: MET. Rebaselining changed the target to the manufacture of 4 pits, of which 3 were completed in FY 2004. The actual unmet portion of FY 2004 target (1 pit) was completed in FY 2005.

DP 1.32.3	Complete 25% of major milestones, documented in the Pit Manufacturing and Certification Program Plan, completed on/ahead of schedule toward W88 pit certification.	100	NA 1.32

Status: MET. Schedule for revised project baseline was defined and approved. The unmet portion of FY 2004 target (5%) was completed in FY 2005.

DP 1.32.4	Complete 20% of the major milestones required for Critical Decision (CD)-1 approval.	101	NA 1.32

Status: MET. The unmet portion of FY04 target (3% of the major milestones) was completed in the first quarter of FY 2005.

DP 1.33.2	Complete 5 of 27 major manufacturing process milestones.	102	NA 1.33

Status: MET. The Integrated Pit Inspection System was successfully deployed in September 2005.

Measure (PAR)	Description of Goal	FY 04 PAR (Page No.)	Crosswalk to FY 05 Program Goal
DP 1.34.2	Reportable accidents are below National Bureau of Labor (BLS) standards of 6.4.	105	NA 1.34

Status: MET. The fourth quarter FY 2004 accident rate, obtained in November 2004, indicated a reportable accident rate of 1.9 per 200,000 work-hours, well below the BLS rate of 6.4.

DP 1.35.1	Initiate design (CD-1) on, or cancel for cause, 11 projects	106	NA 1.35

Status: MET. The Capability for Advanced Loading Missions Project at the Savannah River Site (SRS) was cancelled for cause in FY 2005; the Chemistry and Metallurgy Research Replacement Facility Project at Los Alamos National Laboratory (LANL) attained CD-1 in April 2005; and the Beryllium Capability Project at Y-12 attained CD-1 in June 2005.

DP 1.35.2	Initiate construction (CD-3) on, or cancel for cause, 8 projects.	107	NA 1.35

Status: MET. The eighth project was moved into the FY 2005 target and is being reported there.

DP 1.36.3	Produce 3 Safeguards Transporters (SGTs) for a total of 32 trailers.	109	NA 1.36

Status: MET. The target of 32 was an error; production of 3 SGTs was accomplished. The FY 2005 target includes SGTs 32 & 33.

DP 1.37.2	30% of identified Radiological Assistance Program (RAP) team members (80 of 216) qualified to provide technical assistance in managing and executing the response to a radiological or nuclear event.	111	NA 1.37

Status: MET. The missed FY 2004 target was included in the FY 2005 target and was completed during the first quarter of FY 2005.

DP 1.39.1	Reduce 30% of Protective Force staff unscheduled overtime.	115	NA 1.39

Status: UNMET/CLOSED. This was a point-in-time measure. We have identified lessons learned for future application. Additionally, the original measure was not acceptable to OMB during the PART review. This is not an effective high-level measure and was removed as a FY 2005 measure.

DP 1.39.2	Increase 80% of each of six physical security topical area reviews at the NNSA sites.	116	NA 1.39

Status: UNMET/CLOSED. In accordance with the action plan, DOE's Office of Independent Oversight and Performance Assurance (OA) reviews of Y-12 and Nevada did occur as planned in June 2005 and September 2005, respectively. However, increased Departmental security requirements described in the new Design Basis Threat (DBT) have required the program to rebaseline this measure. Current targets are 65% in FY 2005 (MET), 70% in FY 2006, 75% in FY 2007, 80% in FY 2008, 85% in FY 2009, and 90% in FY 2010.

Goal 2: Nuclear Non-Proliferation

Measure (PAR)	Description of Goal	FY 04 PAR (Page No.)	Crosswalk to FY 05 Program Goal
NN 2.40.8	40 % of all active R&D projects for which an independent R&D merit assessment has been completed within the last 3 years to determine the scientific quality and continued user and mission relevance.	124	NA 2.40

Status: UNMET/CLOSED. Because this is an annual point-in-time target, it could not be met in the subsequent year. However, lessons learned were identified for future years. Additionally, this performance measure has been revised to be more reflective of the entire program and not just one sub-program area.

NN 2.42.1	Complete 16 % of progress towards constructing a fossil plant in Seversk facilitating shut down of two weapons-grade plutonium production reactors.	127	NA 2.42

Status: MET. The missed FY 2004 target was included in the FY 2005 target of a cumulative 32% and has since been completed in FY 2005. In addition, the FY 2005 target reflects the corrected calculation formula based on the revised Seversk Total Project Cost (TPC). The approval of Critical Decision (CD) - 2/3 in November 2004 approved a $387.3 million baseline TPC that is used in the calculation.

NN 2.42.3	Complete 14% of safety upgrades to the three operating Russian plutonium production reactors.	128	NA 2.42

Status: CLOSED.

NN 2.44.1	Convert 42% of 98 targeted research and test reactor cores converted from high enriched uranium to low enriched uranium.	129	NA 2.44

Status: MET. The FY 2004 target is a cumulative total of 41 reactors converted; this was met in the fourth quarter of FY 2005.

NN 2.44.5	Purchase and deliver 177 kilograms of high enriched uranium.	131	NA 2.44

Status: UNMET/CLOSED. Because price and liability issues could not be resolved the project was cancelled in early 2005. The $20.5M of unused funds was recalled to Headquarters for a re-programming request for the Elimination of Weapons Grade Plutonium Production (EWGPP) program that went to Congress for approval in FY 2005.

NN 2.46.4	Convert 24% of 27 MTs of HEU converted to LEU.	136	NA 2.46

Status: MET/CLOSED. The FY 2004 target of 24% of 27 MTs converted is a cumulative 6.5 MTs converted. The missed target from FY 2004 was included in the FY 2005 target of a cumulative 7.5 MTs converted and was completed during FY 2005.

NN 2.46.6	Install equipment at 74 Second Line Defense (SLD) sites.	137	NA 2.46

Status: MET. Missed target from FY 2004 was included the FY 2005 target of 98 SLD sites and was completed during FY 2005.

Measure (PAR)	Description of Goal	FY 04 PAR (Page No.)	Crosswalk to FY 05 Program Goal
NN 2.46.7	Complete upgrades on 100% of the buildings scheduled for FY 2004.	138	NA 2.46

Status: MET. The two remaining buildings originally scheduled for completion in FY 2004 were completed during the first quarter of FY 2005.

NN 2.47.1	Complete 85% of the detailed design and construction of Pit Disassembly and Conversion Facility (PDCF).	139	NA 2.47

Status: MET. The FY 2004 target of 85% of the PDCF design completed was met in the second quarter of FY 2005.

NN 2.47.3	Complete 100% of the detailed design and construction of MOX Fuel Fabrication Facility.	139	NA 2.47

Status: MET. The FY 2004 target of 100% of MOX design completed was met in the second quarter of FY 2005.

NN 2.47.6	Complete 60% of the Russianization of the MOX Fuel Facility design.	141	NA 2.47

Status: UNMET/OPEN. Progress had been further delayed as a result of the liability issue. Interim arrangements with France were cancelled due to unreasonable French demands. The FY 2004 target was fully incorporated into the FY 2005 target and it is being worked by U.S. interagency teams.

General Goal 4: Energy Security

Measure (PAR)	Description of Goal	FY 04 PAR (Page No.)	Crosswalk to FY 05 Program Goal
EE 4.01.a	Complete research for natural gas to hydrogen production and dispensing component development.	184	EE 4.01

Status: MET. R&D and engineering for natural gas to hydrogen production system components have been completed. Research for the hydrogen production system (reformer) is done and detailed engineering and safety and operability reviews are underway. The autothermal cyclic reforming system was started and is undergoing testing at UC Davis in California by General Electric. Another natural gas to hydrogen production system, steam methane reforming system, will be ready for start-up and testing by the fourth quarter of FY 2005 at Pennsylvania State University by Air Products & Chemicals Inc.

EE 4.02.3	Complete Light Truck activity with 35 percent fuel efficiency improvement over a gasoline powered light truck and Tier 2 emissions levels. Demonstrate 45 percent thermal efficiency for heavy duty diesel engines while meeting EPA 2007 emission standards (1.2 g/bhp/hr Nox).	192	EE 4.02

Status: MET. Cummins Engine Company reported at the end of 2004 that an alternative approach to cool the intake manifold demonstrated that the engine could reach 45 percent efficiency while meeting the 2007 emissions standards.

EE 4.04.7	*(For EERE's Building Technologies Program)* Contribute proportionately to EERE's corporate goal of reducing corporate and program uncosteds to a range of 20-25% by reducing program annual uncosteds by 10% in 2004 relative to the program uncosted baseline (2003)	200	EE 4.04

Status: CLOSED. This metric was tracked as part of the FY 2005 annual performance measures. The current status for this metric is reported in the Performance Results Section under General Goal 4 as EE GG 4.04.13.

EE 4.07.1	Create an Enhanced Geothermal System (EGS) with an industry partner and test associated technology needed to operate and monitor the system.	205	EE 4.07

Status: UNMET/OPEN. The activity to complete massive hydraulic fracturing experiment that would create a reservoir at an EGS was delayed into FY 2005. In February 2005, DOE's partner, Coso Operating Company (COC), encountered a massive lost circulation (open) zone at a depth of 8785 feet in the process of redrilling the well targeted for the stimulation experiment. The open zone renders the well useless for a stimulation experiment. **Plan of Action:** COC, U.S. Navy, and Univ. of Utah have identified another well at Coso for the stimulation experiment. With commitments of monetary and technical support from its partners, the program has decided to proceed with the experiment at the new well site and the project is expected to be completed by end of FY 2006.

Measure (PAR)	Description of Goal	FY 04 PAR (Page No.)	Crosswalk to FY 05 Program Goal
EE 4.07.2	*(For EERE's Geothermal Technologies Program)* Contribute proportionately to EERE's corporate goal of reducing corporate and program uncosteds to a range of 20-25% by reducing program annual uncosteds by 10% in 2004 relative to the program uncosted baseline (2003)	206	EE 4.07

Status: CLOSED. This metric was tracked as part of the FY 2005 annual performance measures. The current status for this metric is reported in the Performance Results Section under General Goal 4 as EE GG 4.07.2.

EE 4.08.c	*(For EERE's Biomass and Biorefinery Systems R&D Program)* Contribute proportionately to EERE's corporate goal of reducing corporate and program uncosteds to a range of 20-25% by reducing program annual uncosteds by 10% in 2004 relative to the program uncosted baseline (2003)	208	EE 4.08

Status: CLOSED. This metric was tracked as part of the FY 2005 annual performance measures. The current status for this metric is reported in the Performance Results Section under General Goal 4 as EE GG 4.08.2.

EE 4.11.3	Clean Cities will conduct 7 major workshops, award $6 million in special project funding, and report a total of 180,000 alternative fuel vehicles in operation.	215	EE 4.11

Status: CLOSED. Clean cities is now focusing on other petroleum displacement technologies, in addition to alternative fuel vehicles (AFV). Due to many of the major manufacturers pulling out of the alternative fuel vehicles market and focusing on hybrids the goal of number of AFVs in operation is more difficult. Clean Cities has initiated a strategy for increasing petroleum displacement with an expanded portfolio of transportation technologies including idle reduction, biofuels, blends and hybrids.

EE 4.11.4	Recruit 500 additional retail stores, five additional utilities and 10 additional manufacturers. Add domestic hot water heaters to the program. Begin work on a Commercial Window specification. Expand room air-conditioner program to include heating cycle. Continue outreach to non-English speaking communities and Weatherization activities.	216	EE 4.11

Status: CLOSED. The ENERGY STAR program had a change in direction in late 2004 and is no longer pursuing development of a commercial windows specification or criteria for domestic hot water heaters. Rather, the program is now taking a whole building approach. The ENERGY STAR program did meet or exceed other elements of the target in FY 2004 by recruiting 3,300 retail stores, 5 additional utilities and 10 additional manufacturers.

EE 4.11.5	This target was to decrease the program's end-of-quarter Adjusted obligated-but-uncosted balances by 10 percent on a dollar basis, relative to the same quarter a year ago.	217	EE 4.11

Status: CLOSED. This metric was tracked as part of the FY 2005 annual performance measures. The current status for this metric is reported in the Performance Results Section under General Goal 4 as EE GG 4.11.4.

Measure (PAR)	Description of Goal	FY 04 PAR (Page No.)	Crosswalk to FY 05 Program Goal
EE 4.11.6	Tribal Energy will conduct 6 technical and policy development workshops.	217	EE 4.11

Status: MET. The two remaining workshops (of the four planned in FY 2004) were completed in FY 2005. A workshop on financing was conducted at the Umatilla Tribes on November 16-17, 2004 and a Deal Structuring workshop was held on December 2-3, 2004 for the Fort Mojave Tribes.

EE 4.13.b	*(For EERE's Federal Energy Management Program)* Contribute proportionately to EERE's corporate goal of reducing corporate and program uncosteds to a range of 20-25% by reducing program annual uncosteds by 10% in 2004 relative to the program uncosted baseline (2003)	220	EE 4.13

Status: CLOSED. This metric was tracked as part of the FY 2005 annual performance measures. The current status for this metric is reported in the Performance Results Section under General Goal 4 as EE GG 4.13.2.

EE 4.13.c	Achieve between $35 and $55 million in private sector investment through Super Energy Savings Performance Contracts (ESPCs).	221	EE 4.13

Status: MET. The legal authority for implementing Super ESPCs had expired in September 2003, but was reinstated for two years starting in November 2004. This 13 month lapse caused some delays but the program was able to achieve private sector investments in FY 2005.

EE 4.59.5	*(For EERE's Distributed Energy Program)* Contribute proportionately to EERE's corporate goal of reducing corporate and program uncosteds to a range of 20-25% by reducing program annual uncosteds by 10% in 2004 relative to the program uncosted baseline (2003)	226	EE 4.59

Status: CLOSED. This metric was tracked as part of the FY 2005 annual performance measures. The current status for this metric is reported in the Performance Results Section under General Goal 4 as EE GG 4.59.12.

OE 4.12.1	Complete testing of 10 MVA superconducting transformer in operation on the Wisconsin Electric Power Company grid.	230	OE 4.12

Status: UNMET/OPEN. Dielectric studies were initiated and are on-going with national laboratory, industry and university involvement. Superior superconducting wire is becoming available that will benefit future transformer design. An International Energy Workshop on dielectrics was held that showed promising dielectric materials are being developed. **Plan of Action:** A DOE workshop on dielectrics will be held this winter to select the most promising materials and plan the necessary tests to fully qualify the materials. Small scale component testing by the transformer team will be conducted to verify that solutions to previous problems have been identified. A schedule for meeting the FY 2004 target will be developed.

Measure (PAR)	Description of Goal	FY 04 PAR (Page No.)	Crosswalk to FY 05 Program Goal
NE 4.14.2	Award one or more contracts for the Next Generation Nuclear Plant (NGNP) pre-conceptual design.	174	NE 4.14

Status: UNMET/CLOSED. Before making a decision on whether to proceed with a full-scale demonstration of the Next Generation Nuclear Plant (NGNP), the Department will further investigate the challenges and risks of Generation IV design concepts, including waste products, from a technical and economic viewpoint. The Department will focus on fundamental R&D required to prove the viability of the GEN IV concepts. **Plan of Action:** Focus GEN-IV Program on fundamental R&D.

FE 4.55.2.1	Complete Ion Transport Membrane (ITM) designs with target oxygen production of 95% purity, to obtain engineering data for further technology scale-up, ultimately leading to cost Reductions of $75-$100/KW and efficiency improvement of 1-2 points.	155	FE 4.55

Status: MET. In the first quarter of FY 2005, APCI and its subcontractors completed the design of the subscale engineering prototype (SEP) facility and began purchase of components and parts for fabrication. In addition, it was determined that there are no long-lead items that require detail design during Phase II of the project. These accomplishments were documented via E-mail. On June 28, 2005, APCI completed construction of major equipment items for the SEP facility for testing full-size ITM modules for producing 1 to 5 TPD oxygen at 95% purity. This skid mounted unit was delivered to the test site during the fourth quarter of FY 2005.

FE 4.55.2.3	Complete at least 250 hours of high efficiency desulfurization process units operating with coal-derived synthesis gas.	157	FE 4.55

Status: UNMET/OPEN. For the High Temperature Desulfurization System and Direct Sulfur Recovery Process (HTDS/DSRP), a new location (Eastman Chemical Plant in Kingsport, TN) has been selected for testing on coal-derived syngas. Two shake-down, long-duration tests of the DSRP have been completed at the performer's lab with Eastman personnel in attendance. Full installation at Eastman Chemical's gasifier was completed during the fourth quarter of FY 2005. The Wabash plant slipstream field test of bulk sulfur removal and polishing has been rescheduled with the initial restart of the plant in June 2005. Laboratory testing of candidate sulfur sorbents is complete and the Nucon test unit has been installed at Wabash. The Conoco-Phillips S-sorb unit was installed in September 2005. Testing of the Nucon polishing unit began in late August 2005 and continued for 2-3 weeks. **Plan of Action:** In conjunction with Eastman Chemical, a detailed operations schedule and test plan have been developed. The proven, reliable operations of the Eastman gasifier, trained plant operators, and longer-duration tests enhance the probability of success of this first-of-a-kind test program. Initial testing of the HTDS/DSRP is expected to be completed during the first quarter of FY 2006. For the Wabash plant slipstream field test the DOE cooperative agreement has been novated to Conoco-Phillips from the former plant owner/operator. This will focus efforts to maintain scope and schedule for DOE's gas cleanup testing. Current plans are to conduct tests during the first quarter of FY 2005 to the next scheduled outage.

General Goal 5: World-Class Scientific Research Capacity

Measure (PAR)	Description of Goal	FY 04 PAR (Page No.)	Crosswalk to FY 05 Program Goal
SC 5.23.2	50% of the NERSC computing time is used for by computations that require at least 1/8 of the total resource (512 processors).	268	SC 5.23

Status: CLOSED. A number of critical computationally intensive, large-scale research projects, such as global climate, could not make effective use of 512 or more processors during most of FY 2004. In June 2004, ASCR began charging for only 50% of the hours used for large scale projects as an incentive to attract researchers. This action lead to 66% of the NERSC usage during the fourth quarter of FY 2004 being for large scale projects. However, the overall result of 47% was not enough to achieve the annual target. Beginning in FY 2005, the goal for this target was changed from 50% to 40% of the computing runs using more than 512 processors. This goal was met in FY 2005.

General Goal 6: Environmental Management

Measure (PAR)	Description of Goal	FY 04 PAR (Page No.)	Crosswalk to FY 05 Program Goal
EM 6.18.2	Package 254 kilograms of bulk plutonium or uranium residues for disposition, bringing the total kilograms packaged to 107,913.	275	EM 6.18

Status: CLOSED. With completion of all scheduled lifecycle work in FY 2003, the representation in Joule of a FY 2004 first quarter milestone of 176 for Hanford was no longer accurate and stated the amount of work EM planned to do in FY 2004. EM's annual target of packaging 78 kg of bulk plutonium or uranium residues at Savannah River Site was accomplished in FY 2004.

EM 6.18.3	Close 9 liquid waste tanks, bringing the total number of tanks closed to 11.	276	EM 6.18

Status: CLOSED. This metric was tracked as part of the FY 2005 annual performance measures. The current status for this metric is reported in the Performance Results Section under General Goal 6 as EM GG 6.18.2

EM 6.18.5	Ship 12,952 cubic meters of transuranic (TRU) waste for disposition, bringing the total number of cubic meters shipped to 27,044.	277	EM 6.18

Status: CLOSED. This metric was tracked as part of the FY 2005 annual performance measures. The current status for this metric is reported in the Performance Results Section under General Goal 6 as EM GG 6.18.1

EM 6.18.7	Complete 45 radioactive facilities, bringing the total number of facilities completed to 193.	279	EM 6.18

Status: CLOSED. This metric was tracked as part of the FY 2005 annual performance measures. The current status for this metric is reported in the Performance Results Section under General Goal 6 as EM GG 6.18.7

Financial Results

MESSAGE FROM THE CHIEF FINANCIAL OFFICER

The Department is continuing to make progress in achieving measurable improvements in its financial management practices. With the submission of this report we have successfully met, for the second year in a row, the Office of Management and Budget's accelerated due date for issuing our Performance and Accountability Report within 45 days after the close of the fiscal year.

During the year we made progress in a number of significant management improvement initiatives. For example, after conducting a competitive sourcing, we made a decision for a joint venture of Federal workers and private sector companies to manage the Department's information technology services. The contract, anticipated for implementation in early 2006, is expected to achieve over $300 million in savings and cost avoidance over seven years.

The Department's fiscal year 2005 financial statements provided in this report have been reviewed by independent auditors and received a disclaimer of opinion with a reported material weakness in financial management and reporting controls. We anticipated the challenges of implementing a new Department-wide financial services organization in addition to a new core financial management system and successfully resolved many of the initial issues. However, we still have work to do in accomplishing our goals for financial excellence in this area.

The Department continues to work on key accounting reconciliations to ensure system data integrity and to resolve issues with converting data from the Department's legacy accounting system. When fully functional, the new accounting organization and system will serve as cornerstones for enhanced integration of financial and performance information, increased data integrity and internal controls, and improved access to financial information. We expect these financial control and reporting challenges to be fully resolved during fiscal year 2006. We are also making progress in addressing the reportable condition related to unclassified network security.

Our commitment to the American people is to manage their resources wisely and effectively. I believe you will find this Performance and Accountability Report demonstrates that the Department of Energy takes this responsibility seriously and, through a sustained focus on results, is working diligently to ensure that taxpayers' dollars are well managed. We look forward to continued improvement in meeting our commitment to the American people in the years to come.

Susan J. Grant
November 15, 2005

CONSOLIDATED & COMBINED FINANCIAL STATEMENTS

The Department's financial statements have been prepared to report the financial position and results of operations of the Department of Energy, pursuant to the requirements of the Chief Financial Officers Act of 1990, the Government Management Reform Act of 1994, and the Office of Management and Budget's (OMB) Circular A-136, "Financial Reporting Requirements."

The responsibility for the integrity of the financial information included in these statements rests with the management of the Department of Energy. An independent certified public accounting firm selected by the Department's Office of Inspector General was engaged to perform an audit of the Department's principal financial statements. The report issued by the independent accountants is included in this report.

The following provides a brief description of the nature of each required financial statement.

The *Consolidated Balance Sheets* describe the assets, liabilities, and net position components of the Department.

The *Consolidated Statements of Net Cost* summarize the Department's operating costs by the seven long-term general goals identified in the Department's FY 2003 Strategic Plan.

All operating costs reported reflect full costs, including all direct and indirect costs, consumed by a program or responsibility segment. The full costs are reduced by earned revenues to arrive at net costs. The Net Cost of Operations is reported on the *Consolidated Statements of Net Cost* and also on the *Consolidated Statements of Financing*.

The *Consolidated Statements of Changes in Net Position* identify appropriated funds used as a financing source for goods, services, or capital acquisitions. This statement presents the accounting events that caused changes in the net position section of the *Consolidated Balance Sheets* from the beginning to the end of the reporting period.

The *Combined Statements of Budgetary Resources* identify the Department's budget authority. Budget authority is the authority that Federal law gives to agencies to incur financial obligations that will eventually result in outlays or expenditures. Specific forms of budget authority that the Department receives are appropriations, borrowing authority, contract authority, and spending authority from offsetting collections. The *Combined Statements of Budgetary Resources* provides information on budgetary resources available to the Department during the year and the status of those resources at the end of the year. Detail on the amounts shown in the *Combined Statements of Budgetary Resources* is included in the Required Supplementary Information section on the schedule *Budgetary Resources by Major Account*.

The *Consolidated Statements of Financing* reconcile the obligations incurred to finance operations with the net cost of operations. Obligations incurred include amounts of orders placed, contracts awarded, services received, and similar transactions that require payment during the same or future period.

The *Consolidated Statements of Custodial Activities* identify revenues collected by the Department on behalf of others. These revenues primarily result from power marketing administrations that sell power generated by hydroelectric facilities owned by the Corps of Engineers and the Bureau of Reclamation.

U. S. Department of Energy
Consolidated Balance Sheets
As of September 30, 2005 and 2004
($ in millions)

	FY 2005 (unaudited)	FY 2004
ASSETS (Note 2)		
Intragovernmental		
Fund Balance with Treasury (Note 3)	$ 15,634	$ 15,606
Investments, Net (Note 4)	22,197	20,532
Accounts Receivable, Net (Note 5)	652	563
Regulatory Assets (Note 6)	4,536	4,613
Other	21	13
Total Intragovernmental	$ 43,040	$ 41,327
Investments, Net (Note 4)	230	256
Accounts Receivable, Net (Note 5)	3,990	4,062
Inventory, Net (Note 7)		
Strategic Petroleum and Northeast Home Heating Oil Reserves	19,314	18,148
Nuclear Materials	21,285	21,722
Other	444	436
General Property, Plant, and Equipment, Net (Note 8)	23,190	22,333
Regulatory Assets (Note 6)	5,653	5,741
Other Non-Intragovernmental Assets (Note 9)	4,591	5,283
Total Assets	$ 121,737	$ 119,308
LIABILITIES (Note 10)		
Intragovernmental		
Accounts Payable	$ 56	$ 101
Debt (Note 11)	9,958	10,468
Deferred Revenues and Other Credits (Note 12)	125	149
Other Liabilities (Note 13)	169	262
Total Intragovernmental	$ 10,308	$ 10,980
Accounts Payable	3,883	3,383
Debt Held by the Public (Note 11)	6,574	6,531
Deferred Revenues and Other Credits (Note 12)	21,592	20,235
Environmental and Disposal Liabilities (Note 14)	189,710	181,742
Pension and Other Actuarial Liabilities (Note 15)	11,727	10,530
Other Liabilities (Note 13)	3,664	4,367
Contingencies and Commitments (Note 16)	5,058	1,943
Total Liabilities	$ 252,516	$ 239,711
NET POSITION		
Unexpended Appropriations	$ 8,978	$ 8,784
Cumulative Results of Operations	(139,757)	(129,187)
Total Net Position	$ (130,779)	$ (120,403)
Total Liabilities and Net Position	$ 121,737	$ 119,308

The accompanying notes are an integral part of these statements

U. S. Department of Energy
Consolidated Statements of Net Cost
For Years Ended September 30, 2005 and 2004
($ in millions)

	FY 2005 (unaudited)	FY 2004
STRATEGIC GOALS:		
Defense		
Nuclear Weapons Stewardship:		
Total Program Costs	$ 6,779	$ 6,220
Nuclear Nonproliferation:		
Total Program Costs	$ 1,191	$ 1,101
Naval Reactors:		
Program Costs	810	740
Less: Earned Revenues (Note 17)	(18)	(8)
Net Cost of Naval Reactors	$ 792	$ 732
Net Cost of Defense	$ 8,762	$ 8,053
Energy		
Program Costs	6,617	6,378
Less: Earned Revenues (Note 17)	(4,120)	(4,089)
Net Cost of Energy	$ 2,497	$ 2,289
Science		
Total Program Costs	$ 3,565	$ 3,196
Environment		
Environmental Management:		
Program Costs	6,719	6,283
Less: Earned Revenues (Note 17)	(151)	(153)
Net Cost of Environmental Management	$ 6,568	$ 6,130
Nuclear Waste:		
Program Costs	521	530
Less: Earned Revenues (Note 17)	(321)	(322)
Net Cost of Nuclear Waste	$ 200	$ 208
Net Cost of Environment	$ 6,768	$ 6,338
Net Cost of Strategic Goals	$ 21,592	$ 19,876
OTHER PROGRAMS:		
Reimbursable Programs:		
Program Costs	3,314	2,738
Less: Earned Revenues (Note 17)	(3,251)	(2,757)
Net Cost of Reimbursable Programs	$ 63	$ (19)
Other Programs: (Note 18)		
Program Costs	667	758
Earned Revenues (Note 17)	(297)	(303)
Net Cost of Other Programs	$ 370	$ 455
Costs Applied to Reduction of Legacy Environmental Liabilities (Note 19)	$ (6,637)	$ (6,667)
Costs Not Assigned (Note 20)	25,499	8,277
Net Cost of Operations	$ 40,887	$ 21,922

The accompanying notes are an integral part of these statements

U. S. Department of Energy
Consolidated Statements of Changes in Net Position

For Years Ended September 30, 2005 and 2004
($ in millions)

	FY 2005 (unaudited)	FY 2004
CUMULATIVE RESULTS OF OPERATIONS:		
Beginning Balance	$ (129,187)	$ (132,162)
Budgetary Financing Sources:		
Appropriations Used	23,711	23,109
Nonexchange Revenues	35	13
Donations, Financial	13	1
Transfers - In/(Out) Without Reimbursement, Budgetary	(154)	(260)
Other Financing Sources:		
Donations	340	-
Transfers - In/(Out) Without Reimbursement, Nonbudgetary	2,132	1,031
Imputed Financing from Costs Absorbed by Others	4,279	1,011
Other Gains and Losses	(39)	(8)
Total Financing Sources	$ 30,317	$ 24,897
Net Cost of Operations	(40,887)	(21,922)
Net Change	$ (10,570)	$ 2,975
Ending Balance - Cumulative Results of Operations	$ (139,757)	$ (129,187)
UNEXPENDED APPROPRIATIONS:		
Beginning Balance	$ 8,784	$ 8,900
Budgetary Financing Sources Related to Appropriations:		
Appropriations Received (Note 22)	23,782	23,173
Appropriations Transferred - In/(Out)	312	11
Other Adjustments	(189)	(191)
Appropriations Used	(23,711)	(23,109)
Total Financing Sources Related to Appropriations	$ 194	$ (116)
Ending Balance - Unexpended Appropriations	$ 8,978	$ 8,784

The accompanying notes are an integral part of these statements

U. S. Department of Energy
Combined Statements of Budgetary Resources

For Years Ended September 30, 2005 and 2004
($ in millions)

	FY 2005 (unaudited)	FY 2004
BUDGETARY RESOURCES		
Budget Authority		
Appropriations Received (Note 22)	$ 25,062	$ 24,190
Borrowing and Contract Authority	1,333	1,681
Net Transfers	167	(85)
Unobligated Balance		
Beginning of Period (Note 22)	4,036	3,576
Net Transfers, Actual	2	(2)
Spending Authority from Offsetting Collections		
Earned		
Collected	7,224	7,003
Receivable from Federal Sources	131	23
Change in Unfilled Customer Orders		
Advances received	30	(40)
Without Advances from Federal Sources	212	985
Recoveries of Prior Year Obligations		
Actual	34	32
Authority Temporarily Not Available	(266)	(101)
Authority Permanently Not Available	(1,848)	(739)
Total Budgetary Resources (Note 22)	$ 36,117	$ 36,523
STATUS OF BUDGETARY RESOURCES		
Obligations Incurred		
Direct	$ 24,879	$ 23,878
Exempt from Apportionment	3,253	4,547
Reimbursable	3,744	4,062
Total Obligations Incurred (Note 22)	$ 31,876	$ 32,487
Unobligated Balances Available		
Apportioned Available	2,588	2,538
Exempt from Apportionment	24	12
Unobligated Balances Not Available (Note 22)	1,629	1,486
Total Status of Budgetary Resources	$ 36,117	$ 36,523
RELATIONSHIP OF OBLIGATIONS TO OUTLAYS		
Obligated Balance - Beginning of Period	$ 12,903	$ 11,506
Obligated Balance - End of Period		
Accounts Receivable	$ (766)	$ (636)
Unfilled Customer Orders from Federal Sources	(3,921)	(3,708)
Undelivered Orders	10,577	10,361
Accounts Payable	6,655	6,886
	$ 12,545	$ 12,903
Outlays		
Disbursements	$ 31,856	$ 30,050
Collections	(7,253)	(6,963)
Subtotal	$ 24,603	$ 23,087
Less: Offsetting Receipts	(3,236)	(3,161)
Net Outlays	$ 21,367	$ 19,926

The accompanying notes are an integral part of these statements

U. S. Department of Energy
Consolidated Statements of Financing
For Years Ended September 30, 2005 and 2004
($ in millions)

	FY 2005 (unaudited)	FY 2004
RESOURCES USED TO FINANCE ACTIVITIES:		
Budgetary Resources Obligated:		
Obligations Incurred	$ 31,876	$ 32,487
Less: Spending Authority from Offsetting Collections and Recoveries	(7,631)	(8,003)
Obligations, Net of Offsetting Collections and Recoveries	$ 24,245	$ 24,484
Offsetting Receipts	(3,236)	(3,161)
Net Obligations	$ 21,009	$ 21,323
Other Resources:		
Donations	$ 1	$ -
Imputed Financing from Costs Absorbed by Others	4,279	1,011
Transfers-In/(Out)	2,132	1,031
Nuclear Waste Fund Offsetting Receipts, Deferred (Note 21)	2,095	2,095
Other	13	(8)
Net Other Resources Used to Finance Activities	$ 8,520	$ 4,129
Total Resources Used to Finance Activities	$ 29,529	$ 25,452
RESOURCES USED TO FINANCE ITEMS NOT PART OF THE NET COST OF OPERATIONS:		
Change in Resources Obligated for Goods/Services/Benefits Ordered But Not Yet Provided	$ 72	$ 506
Resources that Finance the Acquisition of Assets	(5,750)	(4,436)
Resources that Fund Expenses Recognized in Prior Periods	(6,464)	(7,298)
Budgetary Offsetting Collections and Receipts that Do Not Affect the Net Cost of Operations	175	87
Other Resources and Adjustments	(410)	(1,813)
Total Resources Used to Finance Items Not Part of the Net Cost of Operations	$ (12,377)	$ (12,954)
Total Resources Used to Finance the Net Cost of Operations	$ 17,152	$ 12,498
NET COST OF ITEMS THAT DO NOT REQUIRE OR GENERATE RESOURCES IN CURRENT PERIOD:		
Components Requiring or Generating Resources in Future Periods:		
Increase in Unfunded Liability Estimates (Note 23)	$ 21,200	$ 7,557
Increase in Exchange Revenue Receivable from the Public	2	3
Total Components Requiring or Generating Resources in Future Periods	$ 21,202	$ 7,560
Components Not Requiring or Generating Resources:		
Depreciation and Amortization	$ 1,818	$ 1,539
Revaluation of Assets and Liabilities	(194)	(161)
Other	909	486
Total Components Not Requiring or Generating Resources	$ 2,533	$ 1,864
Total Net Cost of Items that Do Not Require or Generate Resources in Current Period	$ 23,735	$ 9,424
NET COST OF OPERATIONS	$ 40,887	$ 21,922

The accompanying notes are an integral part of these statements

U. S. Department of Energy
Consolidated Statements of Custodial Activities

For Years Ended September 30, 2005 and 2004
($ in millions)

	FY 2005 (unaudited)	FY 2004
SOURCES OF COLLECTIONS		
Cash Collections (Note 24)		
Interest	$ 20	$ 3
Federal Energy Regulatory Commission	53	75
Power Marketing Administration Custodial Revenue	657	624
Other Custodial Revenue	3	-
Total Cash Collections	$ 733	$ 702
Accrual Adjustment	(19)	4
Total Revenue	$ 714	$ 706
DISPOSITION OF REVENUE		
Transferred to Others		
Department of the Treasury	(624)	(521)
Army Corps of Engineers	(5)	(7)
Bureau of Reclamation	(79)	(144)
Others	(3)	(9)
Decrease in Amounts to be Transferred	(3)	(25)
Net Custodial Activity	$ -	$ -

The accompanying notes are an integral part of these statements

Notes to the Consolidated & Combined Financial Statements

1. Summary of Significant Accounting Policies

A. Basis of Presentation

These consolidated and combined financial statements have been prepared to report the financial position and results of operations of the U.S. Department of Energy (the Department). The statements were prepared from the books and records of the Department in accordance with generally accepted accounting principles applicable to Federal entities.

B. Description of Reporting Entity

The Department is a cabinet level agency of the Executive Branch of the U.S. Government. The Department is not subject to Federal, state, or local income taxes. The Department's headquarters organizations are located in Washington, D.C., and Germantown, Maryland, and consist of an executive management structure that includes the Secretary; the Deputy Secretary; the Under Secretary for Energy, Science and Environment; the Under Secretary for Nuclear Security/Administrator for National Nuclear Security Administration; Secretarial staff organizations; and program organizations that provide technical direction and support for the Department's principal programmatic missions. The Department also includes the Federal Energy Regulatory Commission, which is an independent regulatory organization responsible for setting rates and charges for the transportation and sale of natural gas and for the transmission and sale of electricity and the licensing of hydroelectric power projects.

The Department has a complex field structure comprised of operations offices, field offices, power marketing administrations (Bonneville Power Administration, Southeastern Power Administration, Southwestern Power Administration, and Western Area Power Administration), laboratories, and other facilities. The majority of the Department's environmental cleanup, energy research and development, and testing and production activities are carried out by major contractors. These contractors operate, maintain, or support the Department's Government-owned facilities on a day-to-day basis and provide other special work under the direction of DOE field organizations. The Department indemnifies these contractors against financial responsibility from nuclear accidents under the provisions of the Price-Anderson Act.

These contractors have unique contractual relationships with the Department. In most cases, their charts of accounts and accounting systems are integrated with the Department's accounting system through a home office-branch type of arrangement. Additionally, the Department is responsible for funding certain defined benefit pension plans, as well as postretirement benefits such as medical care and life insurance, for the employees of these contractors. As a result, the Department's financial statements reflect not only the costs incurred by these contractors, but also include certain contractor assets (e.g., employee advances and prepaid pension costs) and liabilities (e.g., accounts payable, accrued expenses including payroll and benefits, and pension and other actuarial liabilities) that would not be reflected in the financial statements of other Federal agencies that do not have these unique contractual relationships.

C. Basis of Accounting

Transactions are recorded on an accrual accounting basis and a budgetary basis. Under the accrual method, revenues are recognized when earned, and expenses are recognized when liabilities are incurred, without regard to receipt or payment of cash. Budgetary accounting facilitates compliance with legal constraints and controls over the use of Federal funds. All material intra-departmental balances and transactions have been eliminated in the *Consolidated Balance Sheets, Consolidated Statements of Net Cost, Consolidated Statements of Changes in Net Position, Consolidated Statements of Financing, and Consolidated Statements of Custodial Activities.* The *Combined Statements of Budgetary Resources* are prepared on a combined basis and do not include intra-departmental eliminations.

D. Fund Balance with Treasury

Funds with the Department of the Treasury (Treasury) primarily represent appropriated and revolving funds that are available to pay current liabilities and finance authorized purchases. Disbursements and receipts are processed by Treasury, and the Department's records are reconciled with those of Treasury (see Note 3).

E. Investments, Net

All investments are reported at cost net of amortized premiums and discounts as it is the Department's intent to hold the investments to maturity. Premiums and discounts are amortized using the effective interest yield method (see Note 4).

F. Accounts Receivable, Net

The amounts due for non-intragovernmental (non-Federal) receivables are stated net of an allowance for uncollectable accounts. The estimate of the allowance is based on past experience in the collection of receivables and an analysis of the outstanding balances (see Note 5).

G. Inventory, Net

Stockpile materials are recorded at historical cost in accordance with SFFAS No. 3, *Accounting for Inventory and Related Property*, except for certain nuclear materials identified as surplus or excess to the Department's needs. These nuclear materials are recorded at their net realizable value (see Note 7).

H. General Property, Plant, and Equipment, Net

Property, plant, and equipment that are purchased, constructed, or fabricated in-house, including major modifications or improvements, are capitalized at cost. The Department's property, plant, and equipment capitalization threshold is $25,000, except for the power marketing administrations, which use thresholds ranging from $5,000 to $10,000. The capitalization threshold for internal use software is $750,000, except for the power marketing administrations, which use thresholds ranging from $5,000 to $100,000 (see Note 8).

Costs of construction are capitalized as construction work in process. Upon completion or beneficial occupancy or use, the cost is transferred to the appropriate property account. Property, plant, and equipment related to environmental management facilities storing and processing the Department's environmental legacy wastes are not capitalized.

Depreciation expense is generally computed using the straight line method. The units of production method is used only in special cases where applicable, such as depreciating automotive equipment on a mileage basis and construction equipment on an hourly use basis. The ranges of service lives are generally as follows:

- Structures and Facilities 25 - 50 years
- ADP Software 3 - 7 years
- Equipment 5 - 40 years
- Land and land rights - duration of period or 50 years, whichever is less

I. Liabilities

Liabilities represent amounts of monies or other resources likely to be paid by the Department as a result of a transaction or event that has already occurred. However, no liability can be paid by the Department absent an authorized appropriation. Liabilities for which an appropriation has not been enacted are, therefore, classified as not covered by budgetary resources (see Note 10), and there is no certainty that the appropriations will be enacted. Also, liabilities of the Department arising from other than contracts can be abrogated by the Government acting in its sovereign capacity.

J. Accrued Annual, Sick, and Other Leave

Federal employees' annual leave is accrued as it is earned, and the accrual is reduced annually for actual leave taken. Each year, the accrued annual leave balance is adjusted to reflect the latest pay rates. To the extent that current or prior year appropriations are not available to fund annual leave earned but not taken, funding will be obtained from future financing sources. Sick leave and other types of nonvested leave are expensed as taken.

K. Retirement Plans

Federal Employees

There are two primary retirement systems for Federal employees. Employees hired prior to January 1, 1984, may participate in the Civil Service Retirement System (CSRS). On January 1, 1984, the Federal Employees Retirement System (FERS) went into effect pursuant to Public Law 99-335. Most employees hired after December 31, 1983, are automatically covered by FERS and Social Security. Employees hired prior to January 1, 1984, elected to either join FERS and Social Security or remain in CSRS. A primary feature of FERS is that it offers a savings plan to which the Department automatically contributes one percent of pay and matches any employee contribution up to an additional four percent of pay. For most employees hired since December 31, 1983, the Department also contributes the employer's matching share for Social Security. The Department does not report CSRS or FERS assets, accumulated plan benefits, or unfunded liabilities, if any, applicable to its employees. Reporting such amounts is the responsibility of the Office of Personnel Management and the Federal Employees Retirement System. The Department does report, as an imputed financing source and a program expense, the difference between its contributions to Federal employee pension and other retirement benefits and the estimated actuarial costs as computed by the Office of Personnel Management.

Contractor Employees

Most of the Department's contractors maintain a defined benefit pension plan under which they promise to pay employees specified benefits, such as a percentage of the final average pay for each year of service. The Department's cost under the contracts includes reimbursement of annual employer contributions to the pension plans.

Each year an amount is calculated for employers to contribute to the pension plan to ensure the plan assets are sufficient to provide for the full accrued benefits of contractor employees in the event that the plan is terminated. The level of contributions is dependent on actuarial assumptions about the future, such as the interest rate, employee turnover and deaths, age of retirement, and salary progression. The Department reports assets and liabilities of these pension plans as if it were the plan sponsor (see Note 15).

L. Net Cost of Operations

Program costs are summarized in the *Consolidated Statements of Net Cost* by the seven long-term general goals identified in the Department's September 30, 2003 Strategic Plan. Program costs reflect full costs including all direct and indirect costs consumed by these general goals. Full costs are reduced by exchange (earned) revenues to arrive at net operating cost (see Notes 17 and 18). The general goals are summarized below.

- Nuclear Weapons Stewardship – Ensure that our nuclear weapons continue to serve their essential deterrence role by maintaining and enhancing the safety, security, and reliability of the U.S. nuclear weapons stockpile.
- Nuclear Nonproliferation – Provide technical leadership to limit or prevent the spread of materials, technology, and expertise relating to weapons of mass destruction; advance the technologies to detect the proliferation of weapons of mass destruction worldwide; and eliminate or secure inventories of surplus materials and infrastructure usable for nuclear weapons.
- Naval Reactors – Provide the Navy with safe, militarily effective nuclear propulsion plants and ensure their continued safe and reliable operation.
- Energy Security – Improve energy security by developing technologies that foster a diverse supply of reliable, affordable, and environmentally sound energy by providing for reliable delivery of energy, guarding against energy emergencies, exploring advanced technologies that make a fundamental improvement in our mix of energy options, and improving energy efficiency.
- World-Class Scientific Research Capacity – Provide world-class scientific research capacity needed to: ensure the success of Department missions in national and energy security; advance the frontiers of knowledge in physical sciences and areas of biological, medical, environmental, and computational sciences; or provide world-class research facilities for the Nation's science enterprise.
- Environmental Management – Accelerate cleanup of nuclear weapons manufacturing and testing sites, completing cleanup of 114 contaminated sites by 2035.
- Nuclear Waste – License and construct a permanent repository for nuclear waste at Yucca Mountain.

M. Revenues and Other Financing Sources

The Department receives the majority of the funding needed to perform its mission through Congressional appropriations. These appropriations may be used, within statutory limits, for operating and capital expenditures. In addition to appropriations, financing sources include exchange and non-exchange revenues, imputed financing sources, and custodial revenues.

Exchange and Non-Exchange Revenues: In accordance with Federal Government accounting standards, the Department classifies revenues as either exchange (earned) or non-exchange. Exchange revenues are those that derive from transactions in which both the Government and the other party receive value (see Note 17). Non-exchange revenues derive from the Government's sovereign right to demand payment, including fines and penalties. These revenues are not considered to reduce the cost of the Department's operations and are reported on the *Consolidated Statements of Changes in Net Position.*

Imputed Financing Sources: In certain instances program costs of the Department are paid out of funds appropriated to other Federal agencies. For example, certain costs of retirement programs are paid by the Office of Personnel Management, and certain legal judgments against the Department are paid from the Judgment Fund maintained by Treasury. When costs that are directly attributable to the Department's operations are paid by other agencies, the Department recognizes these amounts on the *Consolidated Statements of Net Cost.* In addition, these amounts are recognized as imputed financing sources on the *Consolidated Statements of Changes in Net Position* and the *Consolidated Statements of Financing.*

Custodial Revenues: The Department collects certain revenues on behalf of others which are designated as custodial revenues. The Department incurs virtually no costs to generate these revenues, nor can it use these revenues to finance its operations. These revenues are returned to Treasury and others and are reported on the Consolidated Statements of Custodial Activities (see Note 24).

N. Use of Estimates

The Department has made certain estimates and assumptions relating to the reporting of assets and liabilities and the disclosure of contingent assets and liabilities to prepare these consolidated financial statements. Actual results could differ from these estimates.

O. Comparative Data

Certain FY 2004 amounts have been reclassified to conform to the FY 2005 presentation.

2. Non-Entity Assets

(in millions)

	FY 2005 (unaudited)	FY 2004
Intragovernmental		
Fund balance with Treasury		
Naval Petroleum Reserve Deposit Fund (Note 13)	$ 323	$ 323
Elk Hills School Land Fund (Note 13)	82	118
Investments - Petroleum Pricing Violation Escrow Fund (Notes 4 and 13)	280	251
Subtotal	$ 685	$ 692
Investments - Petroleum Pricing Violation Escrow Fund (Notes 4 and 13)	230	256
Accounts receivable - Petroleum Pricing Violation Escrow Fund (Notes 5 and 13)	1	16
Inventories - Department of Defense stockpile oil (Notes 7 and 13)	106	106
Other	9	3
Total non-entity assets	$ 1,031	$ 1,073
Total entity assets	120,706	118,235
Total assets	**$ 121,737**	**$ 119,308**

Assets in the possession of the Department that are not available for its use are considered non-entity assets.

Naval Petroleum Reserve Deposit Fund

The balance in this fund represents proceeds from the sale of the Naval Petroleum Reserve at Elk Hills that are being held until final disposition in accordance with the Decoupling Agreement. Approximately $288 million is being held for a contingency payment to Chevron, Inc., pending the outcome of equity finalization. The remaining $35 million is reserved for anticipated adjustments to Occidental's final payment and for possible reimbursement to the investment banker for an advance on its commission.

Petroleum Pricing Violation Escrow Fund

The Petroleum Pricing Violation Escrow Fund represents custodial receipts collected as a result of agreements or court orders with individuals or firms that violated petroleum pricing and allocation regulations during the 1970s. These receipts are invested in Treasury securities and certificates of deposit at minority-owned financial institutions pending determination by the Department as to how to distribute the fund balance.

3. Fund Balance With Treasury

(in millions)

September 30, 2005 (unaudited)	Appropriated Funds	Revolving Funds	Special Funds	Other Funds	Total
Unobligated budgetary resources					
Available	$ 2,382	$ 95	$ 135	$ -	$ 2,612
Unavailable (Note 22)	240	1,388	1	-	1,629
Obligated balance not yet disbursed					
Undelivered orders	10,215	38	319	5	10,577
Unfilled customer orders	(3,917)	-	(4)	-	(3,921)
Receivables for reimbursements earned	(461)	(296)	(9)	-	(766)
Accounts payable and deposit fund liabilities	4,535	1,916	192	402	7,045
Other adjustments					
Appropriations temporarily not available pursuant to law, and contract authority	257	(1,018)	-	-	(761)
Unavailable receipt accounts	-	-	963	-	963
Budgetary resources invested in Treasury securities					
Nuclear Waste Fund	-	-	(284)	-	(284)
Uranium Enrichment D&D Fund	-	-	(68)	-	(68)
Pajarito Plateau Homesteaders Fund	-	-	(8)	-	(8)
U.S. Enrichment Corporation revolving fund	-	(1,384)	-	-	(1,384)
Total FY 2005 fund balance with Treasury	**$ 13,251**	**$ 739**	**$ 1,237**	**$ 407**	**$ 15,634**

September 30, 2004					
Unobligated budgetary resources					
Available	$ 2,348	$ 97	$ 105	$ -	$ 2,550
Unavailable (Note 22)	132	1,354	-	-	1,486
Obligated balance not yet disbursed					
Undelivered orders	9,980	43	333	5	10,361
Unfilled customer orders	(3,702)	-	(6)	-	(3,708)
Receivables for reimbursements earned	(380)	(249)	(7)	-	(636)
Accounts payable and deposit fund liabilities	4,615	2,086	185	402	7,288
Other adjustments					
Appropriations temporarily not available pursuant to law, and contract authority	97	(1,201)	-	-	(1,104)
Unavailable receipt accounts	-	-	1,000	-	1,000
Budgetary resources invested in Treasury securities					
Nuclear Waste Fund	-	-	(159)	-	(159)
Uranium Facilities Maintenance and Remediation	-	-	(122)	-	(122)
U.S. Enrichment Corporation revolving fund	-	(1,350)	-	-	(1,350)
Total FY 2004 fund balance with Treasury	**$ 13,090**	**$ 780**	**$ 1,329**	**$ 407**	**$ 15,606**

4. Investments, Net

(in millions)

Pursuant to statutory authorizations, the Department invests monies in Treasury securities and commercial certificates of deposit that are secured by the Federal Deposit Insurance Corporation. The Department's investments primarily involve the Nuclear Waste Fund (NWF) and the Uranium Enrichment Decontamination and Decommissioning (D&D) Fund. Fees paid by owners and generators of spent nuclear fuel and high-level radioactive waste and fees collected from domestic utilities are deposited into the respective funds.

Funds in excess of those needed to pay current program costs are invested in Treasury securities.

Upon privatization of the United States Enrichment Corporation (USEC) on July 28, 1998, OMB and Treasury designated the Department as successor to USEC for purposes of disposition of balances remaining in the USEC Fund. Funds in excess of those needed to liquidate USEC liabilities are invested in Treasury securities.

	Face	Unamortized Premium (Discount)	Investments Net	Unrealized Market Gains (Losses)	Market Value
September 30, 2005 (unaudited)					
Intragovernmental Non-Marketable					
Nuclear Waste Fund	$ 33,549	$ (17,037)	$ 16,512	$ 2,008	$ 18,520
D&D Fund	3,891	122	4,013	(46)	3,967
U.S. Enrichment Corporation	1,387	(3)	1,384	1	1,385
Petroleum Pricing Violation Escrow Fund	281	(1)	280	-	280
Pajarito Plateau Homesteaders Comp. Fund	8	-	8	-	8
Subtotal	$ 39,116	$ (16,919)	$ 22,197	$ 1,963	$ 24,160
Non-intragovernmental Marketable Securities					
Petroleum Pricing Violation Escrow Fund	230	-	230	-	230
Total FY 2005 investments	**$ 39,346**	**$ (16,919)**	**$ 22,427**	**$ 1,963**	**$ 24,390**
September 30, 2004					
Intragovernmental Non-Marketable					
Nuclear Waste Fund	$ 30,518	$ (15,342)	$ 15,176	$ 1,553	$ 16,729
D&D Fund	3,657	98	3,755	57	3,812
U.S. Enrichment Corporation	1,350	-	1,350	1	1,351
Petroleum Pricing Violation Escrow Fund	252	(1)	251	-	251
Subtotal	$ 35,777	$ (15,245)	$ 20,532	$ 1,611	$ 22,143
Non-intragovernmental Marketable Securities					
Petroleum Pricing Violation Escrow Fund	256	-	256	-	256
Total FY 2004 investments	**$ 36,033**	**$ (15,245)**	**$ 20,788**	**$ 1,611**	**$ 22,399**

5. Accounts Receivable, Net

(in millions)

	FY 2005 (unaudited)			FY 2004		
	Receivable	Allowance	Net	Receivable	Allowance	Net
Intragovernmental	$ 652	$ -	$ 652	$ 563	$ -	$ 563
Non-intragovernmental						
Nuclear Waste Fund	3,024	-	3,024	2,955	-	2,955
Uranium Enrichment D&D Fund	375	-	375	563	-	563
Power marketing administrations	465	(40)	425	483	(74)	409
Petroleum Pricing Violation Escrow Fund	1	-	1	2,074	(2,058)	16
Credit programs	54	(26)	28	55	(26)	29
Other	178	(41)	137	185	(95)	90
Subtotal	$ 4,097	$ (107)	$ 3,990	$ 6,315	$ (2,253)	$ 4,062
Total accounts receivable	**$ 4,749**	**$ (107)**	**$ 4,642**	**$ 6,878**	**$ (2,253)**	**$ 4,625**

Intragovernmental accounts receivable primarily represent amounts due from other Federal agencies for reimbursable work performed pursuant to the Economy Act, Atomic Energy Act, and other statutory authority, as well as interest earned on investments held in Treasury securities.

Non-intragovernmental receivables primarily represent amounts due for NWF and D&D Fund fees. NWF receivables are supported by contracts and agreements with owners and generators of spent nuclear fuel and high-level radioactive waste that contribute resources to the fund. D&D Fund receivables from public utilities are supported by public law. Other receivables due from the public include reimbursable work billings and other amounts related to trade receivables, and other miscellaneous receivables.

The Petroleum Pricing Violation Escrow Fund receivables resulted from agreements or court orders with individuals or firms that violated petroleum pricing and allocation regulations during the 1970s. The majority of these receivables were with individuals or firms that were in bankruptcy, or collection action was being taken by the Department of Justice. Allowance accounts were established to reflect the realistic potential for recovery of amounts owed through an intensive analysis of each case. The allowance account included interest receivable of $1,540 million as of September 30, 2004. During FY 2005 (unaudited), the Department reviewed these receivables and determined that collection was highly unlikely and wrote off the estimated uncollectable balance.

6. Regulatory Assets

(in millions)

	FY 2005 (unaudited)	FY 2004
Intragovernmental		
Appropriation refinancing asset	$ 4,536	$ 4,613
Non-intragovernmental		
Non-operating regulatory assets	3,955	3,990
Investor owned utilities (IOU) exchange benefits	964	988
Conservation and fish and wildlife projects	412	453
Other regulatory assets	322	310
Subtotal	$ 5,653	$ 5,741
Total regulatory assets	**$ 10,189**	**$ 10,354**

The Department's power marketing administrations record certain amounts as assets in accordance with Statement of Financial Accounting Standards (SFAS) No. 71, *Accounting for the Efects of Certain Types of Regulation.* The provisions of SFAS No. 71 require that regulated enterprises reflect rate actions of the regulator in their financial statements, when appropriate. These rate actions can provide reasonable assurance of the existence of an asset, reduce or eliminate the value of an asset, or impose a liability on a regulated enterprise.

In order to defer incurred costs under SFAS No. 71, a regulated entity must have the statutory authority to establish rates that recover all costs. Rates so established must be charged to and collected from customers.

Appropriation Refinancing Asset

The BPA Appropriations Refinancing Act of 1996, 16 U.S.C. 8381, required that historic interest rates set on the Federal Columbia River Power System (FCRPS) capital appropriations, which BPA is obligated to set rates to recover, be reset and assigned prevailing market rates and the unpaid balance as of September 30, 1996 be reduced by a matching amount. These appropriations include the unpaid balance of capital appropriations of the power generating assets of the Corps of Engineers (Corps) and the Bureau of Reclamation associated with the FCRPS. The Corps and the Bureau of Reclamation continue to own and operate these assets, with BPA having the responsibility to recover the costs of the assets from power ratepayers. BPA established an intragovernmental regulatory asset representing the repayment amount of the transmission and power generating assets that will be recovered in BPA rates. This regulatory asset is being amortized over 68 years. BPA recognized annual amortization costs of $77 million in FY 2005 (unaudited) and FY 2004. The *Consolidated Balance Sheets* include a regulatory asset and an offsetting related debt.

Non-Operating Regulatory Assets

BPA has acquired all or part of the potential generating capability of four terminated nuclear power plants. The Government's contracts require BPA to pay all or part of the annual proj ects' budgets, including debt service of the terminated plants. These projects' current and future costs are recovered through BPA's rates. The *Consolidated Balance Sheets* include a regulatory asset and an offsetting related debt.

Investor Owned Utilities (IOU) Exchange Benefits

The IOU Exchange Benefits consist of future payments to be made to BPA's IOUs to be passed on to the utilities' qualified small-farm and residential customers. The regulatory asset offsets the liability on the balance sheet (see Note 12) as these amounts will be collected in future rates. It is possible that the agreements for these future payments may be revised in connection with legal challenges that have been filed with the U.S. Court of Appeals for the Ninth Circuit Court, which could result in a remand and potential changes to the IOU Exchange Benefit Amounts to be provided to the IOU customers. BPA believes it is likely that the agreements will be sustained.

Conservation and Fish and Wildlife Projects

The conservation projects consist of BPA power resource acquisitions resulting from funded customer investment in conservation measures. The fish and wildlife projects consist of facilities funded by BPA for the protection of fish and wildlife, and the mitigation of losses attributed to the development and operation of hydroelectric projects on the Columbia River and its tributaries pursuant to Section 4(h) of the Pacific Northwest Electric Power Planning and Conservation Act, 16 U.S.C. 839. BPA pays for the facilities and recovers the costs in rates but does not retain ownership of the facilities. Amortization of capitalized conservation and fish and wildlife costs is computed on a straight-line method based on estimated service lives, which are up to 20 years for conservation and 15 years for fish and wildlife.

Other Regulatory Assets

Other regulatory assets consist of settlement agreements resulting from terminated power purchase and sale contracts for which costs will be recovered in power rates; bond premiums amortized over the life of the new debt instruments; deferred contributions for under-funded post retirement benefit programs; and intangible conservation measures for which there is an offsetting liability on the balance sheet as these amounts will be collected in future rates.

7. Inventory, Net

Inventory includes stockpile materials consisting of crude oil held in the Strategic Petroleum Reserve, the Northeast Home Heating Oil Reserve, nuclear materials, highly enriched uranium, and other inventory consisting primarily of operating materials and supplies.

Strategic Petroleum Reserve

The Strategic Petroleum Reserve consists of crude oil stored in salt domes, terminals, and pipelines. As of September 30, 2005 and September 30, 2004, the Reserve contained crude oil with a historical cost of $19,237 million (unaudited) and $18,071 million, respectively. The reserve provides a deterrent to the use of oil as a political instrument and provides an effective response mechanism should a disruption occur. Oil from the reserve may be sold only with the approval of Congress and the President of the United States. Included in the Strategic Petroleum Reserve is crude oil held for future Department of Defense (DOD) use. The FY 1993 Defense Appropriations Act authorized the Department to acquire, transport, store, and prepare for ultimate drawdown of crude oil for DOD. The crude oil purchased with DOD funding is commingled with the Department's stock and is valued at its historical cost of $106 million as of September 30, 2005 (unaudited) and 2004 (see Notes 2 and 13).

In August 2005, Hurricane Katrina hit the Gulf Coast near the Louisiana/Mississippi border. Although the Strategic Petroleum Reserve storage facilities were unaffected, its leased office facilities in the New Orleans area were evacuated and remained inactive until October 2005. Because of the disruption to crude oil supplies, the Department responded by entering into exchange agreements for the delivery of crude oil to affected companies. To further address the supply disruption, the President ordered a drawdown of the Reserve, resulting in the competitive sale of 11 million barrels in September 2005 (unaudited).

Northeast Home Heating Oil Reserve

The Northeast Home Heating Oil Reserve was established in FY 2000 pursuant to the Energy Policy and Conservation Act. As of September 30, 2005 (unaudited) and 2004, the reserve contained petroleum distillate in the New England, New York, and New Jersey geographic area valued at its historical cost of $77 million.

Nuclear Materials

Nuclear materials include weapons and related components, including those in the custody of the Department of Defense under Presidential Directive, and materials used for research and development purposes. Certain surplus plutonium carried at zero value (a provision for disposal is included in environmental liabilities) has significant arms control and nonproliferation value and is instrumental to the U.S in ensuring that Russia continues toward the disposition of its weapons grade plutonium.

The Office of Nuclear Energy, Science and Technology has inventories amounting to a total of 18,850 (unaudited) metric tons of uranium hexafluoride. This total is segmented into three separate stockpiles. First, the Department in 1996 received from USEC a transfer of 5,521 metric tons of uranium associated with the natural uranium component of low-enriched uranium delivered under the U.S. and Russia HEU Agreement in 1995 and 1996. Only 2,388 (unaudited) metric tons remain in the Department's inventories because 2,228 metric tons were transferred consistent with section 3112 of the USEC Privatization Act between 1996 and 2001, and 905 (unaudited) metric tons were transferred to USEC for sale in FY 2005.

The second stockpile of uranium, amounting to 11,000 metric tons, was purchased from Russia for $325 million consistent with P.L. 105-277. This material is the natural uranium component of low enriched uranium delivered under the U.S. and Russia HEU Agreement in 1997 and 1998. Final disposition of the material will not occur until after 2009 based upon an international agreement between the U.S. and Russia that requires the Department to maintain a 22,000 metric ton stockpile, and restricts the entry of the uranium into the commercial market until 2009. The remaining uranium inventory stockpile of 5,462 (unaudited) metric tons is also restricted from sale into the commercial market until 2009. Sampling and analysis indicates that a portion of the Department's stockpile of uranium hexafluoride may have technetium exceeding nuclear fuel specifications. Based on current market data, the carrying value of this material is not impaired as of September 30, 2005 (unaudited).

The nuclear materials inventory includes numerous items for which future use and disposition decisions have not been made. Decisions for most of these items will be made through analysis of the economic benefits and costs, and the environmental impacts of the various use and disposition alternatives. The carrying value of these items is not significant to the nuclear materials stockpile inventory balance. The Department will recognize disposition liabilities and record the material at net realizable value when disposal as waste is identified as the most likely alternative and disposition costs can be reasonably estimated. Inventory values are reduced by costs associated with decay or damage.

Highly Enriched Uranium

The Nuclear Weapons Council declared in December 1994, leading to the Secretary of Energy's announcement in February 1996, that 174.3 metric tons of the Department's highly enriched uranium (HEU) were excess to national security

needs. Most of this material will be blended for sale as low-enriched uranium (LEU) and used over time as commercial nuclear reactor fuel to recover its value. The remaining portion of the material is already in the form of irradiated fuel or other waste forms, which require no processing prior to disposal. A provision for disposal of irradiated fuel is included in environmental liabilities. The carrying value of HEU for which the LEU blending product will have levels of contamination exceeding nuclear fuel specifications has been reduced to zero. A disposition liability for the estimated costs to process this "off-spec" material is included in environmental liabilities. Most of the "off-spec" material will be blended to LEU for use in Tennessee Valley Authority nuclear power reactors. Estimates of revenues and processing costs for surplus HEU were updated during FY 2005 (unaudited). Net revenues from sales of the remaining surplus HEU are expected to exceed the carrying value of the surplus HEU.

8. General Property, Plant and Equipment, Net

(in millions)

	FY 2005 (unaudited)			FY 2004		
	Acquisition Costs	Accumulated Depreciation	Net Book Value	Acquisition Costs	Accumulated Depreciation	Net Book Value
Land and land rights	$ 1,506	$ (729)	$ 777	$ 1,530	$ (758)	$ 772
Structures and facilities	33,543	(21,937)	11,606	32,402	(21,736)	10,666
Internal use software	419	(149)	270	381	(130)	251
Equipment	15,203	(10,322)	4,881	14,496	(9,928)	4,568
Natural resources	65	(9)	56	65	(9)	56
Construction work in process	5,600	-	5,600	6,020	-	6,020
Total property, plant and equipment	**$ 56,336**	**$ (33,146)**	**$ 23,190**	**$ 54,894**	**$ (32,561)**	**$ 22,333**

9. Other Non-Intragovernmental Assets

(in millions)

	FY 2005 (unaudited)	FY 2004
Purchased generating capability	$ 2,389	$ 2,368
Prepaid pension plan costs (Note 15)	1,260	1,892
Oil due from others	224	200
Prepayments	321	331
Other	397	492
Total other non-intragovernmental assets	**$ 4,591**	**$ 5,283**

Purchased Generating Capability

Through contracts, BPA has acquired all or part of the generating capability of a nuclear power plant and several hydroelectric projects. The contracts require BPA to pay operating expenses and debt service for these facilities. The *Consolidated Balance Sheets* include an offsetting related debt for these amounts.

Oil Due from Others

The Department has a Royalty-In-Kind exchange arrangement with the Department of the Interior's Mineral Management Service (MMS) to receive crude oil from Gulf of Mexico Federal offshore leases. The oil from the MMS offshore leases was exchanged for other crude oil (exchange oil) of differing quality to be delivered to the Strategic Petroleum Reserve. As a result of companies deferring the delivery of some of the exchange oil, the Department earned additional oil as a premium. All Royalty-In-Kind exchange oil has been received as of September 30, 2005 (unaudited).

Due to Hurricane Katrina, the Strategic Petroleum Reserve contracted with six oil companies to loan oil in exchange for the return of contracted plus premium barrels related to the exchange. As of September 30, 2005 (unaudited), oil valued at $196 million has been delivered. The value of the premium barrels due was $19.3 million as of September 30, 2005 (unaudited).

10. Liabilities Not Covered By Budgetary Resources

(in millions)

	FY 2005 (unaudited)	FY 2004
Intragovernmental		
Debt (Note 11)	$ 9,958	$ 10,468
Other	15	15
Total intragovernmental	$ 9,973	$ 10,483
Debt (Note 11)	6,574	6,531
Deferred revenues (Note 12)		
Nuclear Waste Fund	19,564	18,145
Occupational illness program - Subtitle D (Note 13)	-	810
Environmental liabilities (Note 14)	187,784	179,005
Pension and other actuarial liabilities (Note 15)	11,727	10,530
Other liabilities		
Environment, safety and health compliance activities (Note 13)	1,164	1,180
Accrued annual leave for Federal employees	113	109
Other	350	250
Contingencies and Commitments (Note 16)	5,058	1,943
Total liabilities not covered by budgetary resources	$ 242,307	$ 228,986
Total liabilities covered by budgetary resources	10,209	10,725
Total liabilities	**$ 252,516**	**$ 239,711**

11. Debt

(in millions)

	FY 2005 (unaudited)			FY 2004		
	Beginning Balance	Net Borrowings	Ending Balance	Beginning Balance	Net Borrowings	Ending Balance
Intragovernmental						
Borrowing from Treasury	$ 2,900	$ (123)	$ 2,777	$ 2,698	$ 202	$ 2,900
Appropriated capital	3,111	(139)	2,972	2,906	205	3,111
Refinanced appropriations	2,401	(182)	2,219	2,715	(314)	2,401
Capitalization adjustment	2,056	(66)	1,990	2,125	(69)	2,056
Subtotal	$ 10,468	$ (510)	$ 9,958	$ 10,444	$ 24	$ 10,468
Debt Held by the Public						
Non-Federal projects	6,531	43	6,574	6,443	88	6,531
Total debt	**$ 16,999**	**$ (467)**	**$ 16,532**	**$ 16,887**	**$ 112**	**$ 16,999**

Borrowing from Treasury

To finance its capital programs, BPA is authorized by Congress to issue to Treasury up to $4,450 million of interestbearing debt with terms and conditions comparable to debt issued by U.S. Government corporations. A portion ($1,250 million) is reserved for conservation and renewable resource loans and grants. As of September 30, 2005 (unaudited), of the total $2,777 million of outstanding debt, $780 million were conservation and renewable resource loans and grants (including Corps, Bureau of Reclamation and U.S. Fish and Wildlife capital investments). The weighted average interest rates for Treasury borrowings as of September 30, 2005 (unaudited) and 2004, were 4.76 percent and 4.87 percent, respectively. The average interest rate of BPA's borrowings from the Treasury exceeds the rate that could be obtained currently. As a result, the fair value of BPA's long-

term debt, based on discounting future cash flows using rates offered by Treasury as of September 30, 2005 (unaudited) and 2004, for similar maturities, exceeds carrying value by approximately $169 million and $224 million, respectively. BPA's policy is to refinance debt that is callable when associated benefits exceed costs of refinancing.

Appropriated Capital

Appropriated capital owed represents the balance of appropriations provided to the Department's power marketing administrations for construction and operation of power projects which will be repaid to Treasury's General Fund and the Department of the Interior's (Interior) Reclamation Fund. The amount owed also includes accumulated interest on the net unpaid Federal investment in the power projects. The Federal investment in these facilities is to be repaid within 50 years from the time the facilities are placed in service or are commercially operational. Replacements of Federal investments are generally to be repaid over their expected useful service lives. There is no requirement for repayment of a specific amount of Federal investment on an annual basis.

Each of the power marketing administrations, except BPA, receives an annual appropriation to fund operation and maintenance expenses. These appropriated funds are repaid to the General Fund of the Treasury and Interior from the revenues generated from the sale of power and transmission services. To the extent that funds are not available for payment, such unpaid annual net deficits become payable from the subsequent years' revenues prior to any repayment of Federal investment. The Department treats these appropriations as a borrowing from the General Fund of the Treasury and Interior, and as such, the *Consolidated Statements of Changes in Net Position* do not reflect these funds as appropriated capital used.

Except for the appropriation refinancing asset described in Note 6 and in the next paragraph, the Department's financial statements do not reflect the Federal investment in power generating facilities owned by the Department of Defense, Army Corps of Engineers; the Department of the Interior, Bureau of Reclamation; and the Department of State, International Boundary and Water Commission. The Department's power marketing administrations are responsible for collecting, and remitting to Treasury, revenues resulting from the sale of hydroelectric power generated by these facilities (see Note 24).

Refinanced Appropriations

As discussed in Note 6, BPA refinanced its unpaid capital appropriations as of September 30, 1996. The weighted average interest rate on outstanding appropriations was 6.7 percent as of September 30, 2005 (unaudited) and 7.0 percent as of September 30, 2004. The remaining period of repayment on refinanced appropriations is 31 years. Repayment amounts were determined based on the date the respective facilities were placed in service using the weighted average service lives of the associated investments, not to exceed 50 years. BPA repays amounts owed to the General Fund of the Treasury and Interior's Reclamation Fund.

Capitalization Adjustment

The amount of appropriations refinanced as a result of the BPA Appropriations Refinancing Act of 1996 was $6.6 billion. After refinancing, the appropriations outstanding were $4.1 billion. The difference between the appropriated debt before and after the refinancing was recorded as a capitalization adjustment. This adjustment is being amortized over 40 years of which 31 years remain. Amortization of the capitalization adjustment was $66 million during FY 2005 (unaudited) and $69 million during FY 2004. The weighted average interest rate was 6.7 percent as of September 30, 2005 (unaudited) and 7.0 percent as of September 30, 2004.

Non-Federal Projects

As discussed in Notes 6 and 9, the non-Federal projects debt represents BPA's liability to pay all or part of the annual budgets, including debt service, of the generating capability of five operating and nonoperating nuclear power plants as well as several hydroelectric projects.

The following table summarizes future principal payments required for the debt described above (unaudited):

(in millions)

Fiscal Year	Borrowing from Treasury	Appropriated Capital	Refinanced Appropriations	Capitalization Adjustment	Non-Federal Projects
2006	$ 565	$ 3	$ 16	$ 65	$ 208
2007	556	4	24	65	296
2008	515	8	11	65	308
2009	190	13	10	65	312
2010	90	12	26	65	364
2011+	861	2,932	2,132	1,665	5,086
Total	**$2,777**	**$ 2,972**	**$ 2,219**	**$ 1,990**	**$ 6,574**

12. Deferred Revenues and Other Credits

(in millions)

	FY 2005 (unaudited)	FY 2004
Intragovernmental	$ 125	$ 149
Non-intragovernmental		
Nuclear Waste Fund (Note 10)	$ 19,564	$ 18,145
Power marketing administrations	1,812	1,895
Reimbursable work advances	168	183
Other	48	12
Subtotal	$ 21,592	$ 20,235
Total deferred revenues and other credits	**$ 21,717**	**$ 20,384**

Nuclear Waste Fund

NWF revenues are accrued based on fees assessed against owners and generators of high-level radioactive waste and spent nuclear fuel and interest accrued on investments in Treasury securities. These revenues are recognized as a financing source as costs are incurred for NWF activities. Annual adjustments are made to defer revenues that exceed the NWF expenses.

Power Marketing Administrations

The power marketing administrations' deferred revenues primarily represent amounts paid to BPA from participants under various alternating current intertie capacity agreements, various customer reimbursable projects, and load diversification fees paid to BPA by various customers. These one-time payments cover the remaining term of the customer's existing contractual agreement and are recognized as revenues as contract commitments are satisfied. Also included in Deferred Revenues and Other Credits is BPA's offset to IOU Exchange Benefits (see Note 6).

13. Other Liabilities

(in millions)

	FY 2005 (unaudited)	FY 2004
Intragovernmental		
Oil held for Department of Defense (Notes 2 and 7)	$ 106	$ 106
Other	63	156
Total other intragovernmental liabilities	$ 169	$ 262
Non-intragovernmental		
Environment, safety and health compliance activities (Notes 10 and 23)	$ 1,164	$ 1,180
Occupational illness program - Subtitle D and E (Notes 10, 20 and 23)	-	810
Accrued payroll and benefits	923	961
Petroleum Pricing Violation Escrow Fund (Note 2)	511	523
Naval Petroleum Reserve Deposit Fund (Note 2)	323	323
Elk Hills School Lands Fund (Note 2)	82	118
Other	661	452
Subtotal	$ 3,664	$ 4,367
Total other liabilities	**$ 3,833**	**$ 4,629**

Environment, Safety and Health Compliance Activities

The Department's environment, safety, and health liability represents those activities necessary to bring facilities and operations into compliance with existing environmental safety and health (ES&H) laws and regulations (e.g., Occupational Safety and Health Act; Clean Air Act; Safe Drinking Water Act). Types of activities included in the estimate relate to the following: upgrading site-wide fire and radiological programs; nuclear safety upgrades; industrial hygiene and industrial safety; safety related maintenance; emergency preparedness programs; life safety code improvements; and transportation of radioactive and hazardous materials. The estimate covers corrective actions expected to be performed in future years for programs outside the purview of the Department's Environmental Management (EM) Program. ES&H activities within the purview of the EM program are included in the environmental liability estimate. The FY 2005 (unaudited) change in the ES&H liability is due to (1) additional corrective actions, activities, or programs that are required to improve the facilities' state of compliance and move them toward full compliance, or conformance with all applicable ES&H laws, regulations, agreements, and the Department's orders; (2) revised cost estimates for existing ES&H activities; and (3) costs of work performed during the year.

Compensation Program for Occupational Illnesses

The Energy Employees Occupational Illness Compensation Program Act of 2000 (EEOICPA), authorized benefits to eligible employees of the Department, its predecessor agencies, and contractors who developed work-related illnesses as a result of exposure to radiation and toxic substances. Under the previous Subtitle D, the Department had provided assistance obtaining state workers' compensation benefits. The National Defense Authorization Act for Fiscal Year 2005, enacted in October 2004, clarified the amounts payable under the program, which is now administered by the Department of Labor (DOL) under a new Subtitle E of the Compensation Act. This amendment replaces Subtitle D of the EEOICPA and the new program grants worker's compensation benefits to covered employees and their families for illness and death arising from exposure to toxic substances at a DOE facility. Using estimates developed by the Congressional Budget Office, the Department recorded a liability for the program during FY 2004 and transferred the liability to the DOL during FY 2005 (unaudited).

Accrued Payroll and Benefits

Accrued payroll and benefits represent amounts owed to the Department's Federal and contractor employees.

Elk Hills School Lands Fund

This balance represents the portion of the Naval Petroleum Reserve at Elk Hills' sales proceeds being retained for future disbursements to the State of California pending authorization of the Congress. In FY 2005 (unaudited) and FY 2004, the Department made a $36 million payment pursuant to a legislative directive.

Other Liabilities

This balance consists primarily of liabilities associated with other deposit funds, suspense accounts, receipts due to Treasury, and contract advances.

14. Environmental Liabilities

(in millions)

	FY 2005 (unaudited)	FY 2004
Environmental Management Program	$ 121,411	$ 117,052
Legacy environmental liabilities - other	17,465	17,822
Total legacy environmental liabilities	$ 138,876	$ 134,874
Active and surplus facilities	25,972	25,823
High-level waste and spent nuclear fuel disposition	15,059	14,942
Other	9,803	6,103
Total environmental liabilities	$ 189,710	$ 181,742
Amount funded by current appropriations	(1,926)	(2,737)
Total unfunded environmental and disposal liabilities	**$ 187,784**	**$ 179,005**
Changes in environmental liabilities		
Total environmental liabilities, beginning balance	$ 181,742	$ 183,434
Changes to environmental liability estimates		
Legacy environmental liabilities	11,757	4,990
Active and surplus facilities	280	418
High-level waste and spent nuclear fuel disposition	380	391
Other	4,102	212
Total changes in estimates (Notes 20 and 23)	$ 16,519	$ 6,011
Operating expenditures related to remediation activities (Note 19)	(6,637)	(6,667)
Capital expenditures related to remediation activities	(1,914)	(1,036)
Total environmental and disposal liabilities	**$ 189,710**	**$ 181,742**

During World War II and the Cold War, the United States developed a massive industrial complex to research, produce, and test nuclear weapons. The nuclear weapons complex included nuclear reactors, chemical processing buildings, metal machining plants, laboratories, and maintenance facilities that manufactured tens of thousands of nuclear warheads and conducted more than one thousand nuclear explosion tests.

At all sites where these activities took place, some environmental contamination occurred. This contamination was caused by the production, storage, and use of radioactive materials and hazardous chemicals, which resulted in contamination of soil, surface water, and groundwater. The environmental legacy of nuclear weapons production also includes thousands of contaminated buildings and large volumes of waste and special nuclear materials requiring treatment, stabilization, and disposal. Approximately one-half million cubic meters of radioactive high-level, mixed, and low-level wastes must be stabilized, safeguarded, and dispositioned, including a quantity of plutonium sufficient to fabricate thousands of nuclear weapons.

Assumptions and Uncertainties

Estimating the Department's environmental cleanup liability requires making assumptions about future activities and is inherently uncertain. The future course of the Department's environmental management program will depend 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. For example, many contaminated sites and facilities could be restored to a condition suitable for any desired use; they could also be restored to a point where they pose no near-term health risks to surrounding communities but are essentially surrounded by fences and left in place. Achieving the former conditions would have a higher cost but may, or may not, warrant the costs and potential ecosystem disruption, or be legally required. The baseline estimates reflect applicable local decisions and expectations as to the extent of cleanup and site and facility reuse, which include consideration of Congressional mandates, regulatory direction, and stakeholder input.

The environmental liability estimates are dependent on annual funding levels and achievement of work as scheduled. Higher funding tends to accelerate cleanup work and reduce cleanup costs; lower funding tends to delay work and increase costs. Congressional appropriations at lower than anticipated levels or unplanned delays in project completion would cause increases in life-cycle costs. The environmental liability estimates include contingency estimates intended to account for the uncertainties associated with the technical cleanup scope of the program.

The liabilities as of September 30, 2005 (unaudited) and 2004, are stated in FY 2005 dollars and FY 2004 dollars, respectively, as required by generally accepted accounting standards for Federal entities. Future inflation could cause actual costs to be substantially higher than the recorded liability.

In July 2004, the U.S. Court of Appeals in Washington, D.C. vacated a standard promulgated by the Environmental Protection Agency for the protection of the environment from offsite releases of radioactive material from the Yucca Mountain repository. The EPA standard required the Department to limit offsite releases from the repository for 10,000 years. The Court held that EPA violated the Energy Policy Act of 1992, which required the agency to issue standards for Yucca Mountain based upon and consistent with findings by the National Academy of Sciences, whose report issued in 1995 stated that the radiation hazard from the repository might continue for a much longer period. EPA issued a revised standard for comment in August 2005, and in September 2005 the Nuclear Regulatory Commission issued a draft rule that incorporates the revised EPA standard. The ability of the repository to mitigate radiation hazards is one of the criteria that the NRC will consider in its evaluation of a license application for the repository. Challenges to the revised standard could delay the Department's filing of a repository license application and, consequently, delay the opening of the repository.

Components of the Liability

Environmental Management Program Estimates

EM is responsible for managing the legacy of contamination from the nuclear weapons complex. As such, EM manages thousands of contaminated facilities formerly used in the nuclear weapons program, oversees the safe management of vast quantities of radioactive waste and nuclear materials, and is responsible for the cleanup of large volumes of contaminated soil and water. The FY 2005 EM life-cycle cost estimate (unaudited) reflects a strategic vision to complete this cleanup mission by 2035. This strategy provides for a site-by-site projection of the work required to complete all EM projects, while complying with regulatory agreements, statutes, and regulations. Each project baseline estimate includes detailed projections of the technical scope, schedule, and costs at each site for the cleanup of contaminated soil, groundwater, and facilities; treating, storing, and disposing of wastes; and managing nuclear materials. The baseline estimates also include costs for related activities such as landlord responsibilities, program management, and legally prescribed grants and cooperative agreements for participation and oversight by native American tribes, regulatory agencies, and other stakeholders.

Over the past several years a number of management reforms have been implemented within the EM program. These reforms include: 1) redefining and aligning acquisition strategies, 2) instituting robust project management practices and procedures in executing the cleanup program, and 3) implementing a strict configuration control system for key management parameters of the cleanup program. In FY 2005 (unaudited), progress towards improving efficiency and management of the program continued. Field offices have prepared technical baselines that describe in detail the activities, schedule, and resources required to complete the EM cleanup mission at the respective sites. In addition, EM has implemented an earned value management reporting system to ensure that cleanup progress remains on schedule and within budget. Achievement of accelerated cleanup goals is largely contingent upon receipt of funding, yet to be approved by Congress, during FY 2006 and succeeding years. In addition to the assumptions and uncertainties discussed above, the following key assumptions and uncertainties relate to the EM baseline estimates:

- The Department has identified approximately 10,400 potential release sites from which contaminants could migrate into the environment. Although virtually all of these sites have been at least partially characterized, final remedial action and regulatory decisions have not been made for many sites. Site-specific assumptions regarding the amount and type of contamination and the remediation technologies that will be utilized were used in estimating the environmental liability related to these sites.
- Cost estimates for management of the Department's high-level waste are predicated upon assumptions as to the timing and rate of acceptance of the waste by the first geological repository. Delays in opening the repository could cause EM project costs to increase.
- Estimates are based on remedies considered technically and environmentally reasonable and achievable by local project managers and appropriate regulatory authorities.
- Estimated cleanup costs at sites for which there is no current feasible remediation approach are excluded from the baseline estimates, although applicable stewardship and monitoring costs for these sites are included. The cost estimate would be higher if some remediation were assumed for these areas. However, because the Department has not identified effective remedial technologies for these sites, no basis for estimating costs is available. An example of a site for which cleanup costs are excluded is the nuclear explosion test area at the Nevada Test Site.
- The Low-Level Radioactive Waste Policy Amendments Act of 1985 assigned responsibility to the Department for the disposal of certain low-level wastes, generated by the Department and others, that are not suitable for nearsurface disposal. The Department has not determined a disposal path and has therefore included only storage and monitoring costs for these wastes in the liability. The disposal costs for these wastes are not expected to be material in relation to the Department's environmental liabilities.

Changes to the EM baseline estimates during FY 2005 (unaudited) and FY 2004 resulted from inflation adjustments to reflect constant dollars for the current year; improved and updated estimates for the same scope of work; revisions in acquisition strategies, technical approach or scope; regulatory changes; cleanup activities performed; additional scope and transfers out of the EM baseline estimates; and additions for facilities transferred from the active and surplus category discussed below.

Legacy Environmental Liabilities - Other

These liabilities are comprised of the estimated cleanup and post-closure responsibilities, including surveillance and monitoring activities, soil and groundwater remediation, and disposition of excess materials for sites after the EM program activities have been completed. The costs for these post-closure activities are estimated for a period of 75 years, i.e., through 2080. Some post-cleanup monitoring and other long-term stewardship activities are expected to continue beyond 2080, but the Department believes the costs of these activities cannot reasonably be estimated.

Active and Surplus Facilities

This liability includes anticipated remediation costs for active and surplus facilities managed by the Department's ongoing program operations and which will ultimately require stabilization, deactivation, and decommissioning. The estimate is largely based upon a cost-estimating model which extrapolates stabilization, deactivation, and decommissioning costs from facilities included in the EM baseline estimates to those active and surplus facilities with similar characteristics. Site-specific estimates are used when available. Cost estimates for active and surplus facilities are updated each year to reflect current year constant dollars; the transfer of cleanup and management responsibilities for these facilities by other programs to EM, as discussed above; changes in facility size or contamination assessments; and estimated cleanup costs for newly contaminated facilities. For facilities newly contaminated since FY 1997, cleanup costs allocated to future periods and not included in the liability amounted to $440 million at September 30, 2005 (unaudited) and $357 million at September 30, 2004.

High-Level Waste and Spent Nuclear Fuel Disposition

The Nuclear Waste Policy Act of 1982 established the Department's responsibility to provide for permanent disposal of the Nation's high-level radioactive waste and spent nuclear fuel. The Act requires all owners and generators of high-level nuclear waste and spent nuclear fuel, including the Department, to pay their respective shares of the full cost of the program. To that end, the Act establishes a fee on owners and generators that the Department must collect and annually assess to determine its adequacy. The Department's liability reflects its share of the estimated future costs of the program based on its inventory of high-level waste and spent nuclear fuel, plus the unfunded portion of actual costs incurred to date and the accrued interest on the unfunded costs. The Department's liability does not include the portion of the cost attributable to other owners and generators.

Changes to the high-level waste and spent nuclear fuel disposition liability during FY 2005 (unaudited) and FY 2004 resulted from inflation adjustments to reflect current year constant dollars, revisions in technical approach or scope, changes in the Department's allocable percentage share of future costs, and actual costs incurred by the Department that were allocated to the Department's share of the liability.

Other Environmental Liabilities

Other environmental liabilities consist of liabilities for disposition of surplus plutonium, depleted uranium, and highly enriched uranium. The liability for disposition of surplus plutonium was increased in FY 2005 (unaudited) due to program delays imposed by running the program in parallel with the Russian program (see Note 7) and facility redesign.

15. Pension and Other Actuarial Liabilities

(in millions)

	FY 2005 (unaudited)	FY 2004
Contractor pension plans	$ 2,563	$ 1,939
Contractor postretirement benefits other than pensions	9,041	8,471
Contractor disability and life insurance plans	24	25
Federal Employees' Compensation Act	99	95
Total pension and other actuarial liabilities	**$ 11,727**	**$ 10,530**

Most of the Department's contractors have defined benefit pension plans under which they promise to pay specified benefits to their employees, such as a percentage of the final average pay for each year of service. The Department's cost under the contracts includes reimbursement of annual contractor contributions to these pension plans. The Department's contractors also sponsor postretirement benefits other than pensions (PRB) consisting of

predominantly postretirement health care benefits. The Department approves the contractors' pension and postretirement benefit plans and is ultimately responsible for the allowable costs of funding the plans.

The Department reimburses its major contractors for employee disability insurance plans, and estimates are recorded as unfunded liabilities for these plans.

Contractor Pension Plans

The Department follows SFAS No. 87, *Employers' Accounting for Pensions,* for contractor employees for whom the Department has a continuing pension obligation. As of September 30, 2005, (unaudited) the measurement date, the Department has prepaid pension costs of $1,536 million before minimum liability adjustment and $1,254 million after minimum liability adjustment; and accrued pension costs of $1,298 million before minimum liability adjustment and $2,563 million after minimum liability adjustment. The Department has a continuing obligation for a variety of contractor-sponsored pension plans (39 qualified and 6 nonqualified). In this regard, benefit formulas consist of final average pay (30 plans), career average pay (8 plans), dollar per month of service (6 plans), and one defined contribution plan with future contributions for retired employees. Sixteen of the plans cover nonunion employees only; 9 cover union employees only; and 20 cover both union and nonunion employees.

For qualified plans, the Department's current funding policy is for contributions made to a trust during a plan year for a separate defined benefit pension plan to not exceed the greater of: (1) the minimum contribution required by Section 302 of the Employee Retirement Income Security Act (ERISA) or (2) the amount estimated to eliminate the unfunded current liability as projected to the end of the plan year. The term "unfunded current liability" refers to the unfunded current liability as defined in Section 302(d)(8) of ERISA. For nonqualified plans, the funding policy is pay-as-you-go.

Plan assets generally include cash and equivalents, stocks, corporate bonds, government bonds, real estate, venture capital, international investments, and insurance contracts. There are three plans that have securities of the employer or related parties included in the plan assets. The total amount invested in such securities is $3 million.

Assumptions and Methods - In order to provide consistency among the Department's various contractors, certain standardized actuarial assumptions were used. These standardized assumptions include the discount rates, mortality assumptions, and an expected long-term rate of return on plan assets, salary scale, and any other economic assumption consistent with an expected long-term inflation rate of 3.0 percent for the entire U.S. economy with adjustments to reflect regional or industry rates as appropriate. In most cases, ERISA valuation actuarial assumptions for demographic assumptions were used.

The following specific assumptions and methods were used to determine the net periodic pension cost. The weighted average discount rate was 5.75 percent for FY 2005 (unaudited) and 6.00 percent for FY 2004; the average long-term rate of return on assets was 7.88 percent in FY 2005 (unaudited) and 7.77 percent in FY 2004; and the average rate of compensation increase was 4.4 percent in both FY 2005 (unaudited) and FY 2004. The average long-term rate of return on assets shown above is the average rate for all of the contractor plans. Each contractor develops its own average long-term rate of return on assets based on the specific investment profile of the specific plans it sponsors. Therefore, there is no one overall approach to setting the rate of return for all of the contractors' plans.

The weighted average discount rates used to determine the benefit obligations as of September 30, 2005 (unaudited) and 2004 were 5.25 percent and 5.75 percent, respectively.

Straight line amortization of unrecognized prior service cost over the average remaining years of service of the active plan participants and the minimum amortization of unrecognized gains and losses were used. The transition obligation was amortized over the greater of 15 years or the average remaining service.

Contractor Postretirement Benefits Other Than Pensions

The Department follows SFAS No. 106, Employers' Accounting for Postretirement Benefits Other Than Pensions, for contractor employees for whom the Department has a continuing obligation. SFAS No. 106 requires that the cost of PRB be accrued during the years that the employees render service. As of September 30, 2005 (unaudited) and 2004, the measurement dates, the Department has an accrued PRB liability of $9,041 million and $8,471 million, respectively. Generally, the PRB plans are unfunded, and the Department's funding policy is to fund on a pay-as-you-go basis. There are six contractors, however, that are prefunding benefits in part as permitted by law. The Department's contractors sponsor a variety of postretirement benefits other than pensions. Benefits consist of medical (39 contractors), dental (19 contractors), life insurance (22 contractors), and Medicare Part B premium reimbursement (4 contractors). Thirty-eight of the contractors sponsor a traditional indemnity plan, a PPO, an HMO, or similar plan. Seventeen of these also have a point of service plan, an HMO, or similar plan. One additional contractor has only a point of service plan, an HMO, or similar plan.

Assumptions and Methods - In order to provide consistency among the Department's various contractors, certain standardized actuarial assumptions were used. These standardized assumptions include medical and dental trend rates, discount rates, and mortality assumptions.

The following specific assumptions and methods were used in determining the PRB estimates. The medical trend rates for a point of service plan, an HMO, a PPO, or similar plan, grade

from 10.0 percent in 2005 (unaudited) down to 5.5 percent in 2013 and later. The medical trend rates for a traditional indemnity plan, or similar plan, grade from 11.0 percent in 2005 (unaudited) down to 5.5 percent in 2013 and later. The dental trend rates at all ages grade down from 7.0 percent in 2005 (unaudited) to 5.0 percent in 2013 and later.

The weighted average discount rates of 5.75 percent for FY 2005 (unaudited) and 6.00 percent for FY 2004, and the average long-term rate of return on assets of 6.58 percent in both FY 2005 (unaudited) and FY 2004 were used to determine the net periodic postretirement benefit cost. The rate of compensation increase was the same rate as each contractor used to determine pension contributions. The average long-term rate of return on assets shown above is the average rate for all of the contractor plans. Each contractor develops its own average long-term rate of return on assets based on the specific investment profile of the specific plans it sponsors. Therefore, there is no one overall approach to setting the rate of return for all of the contractors' plans.

The weighted average discount rates used to determine the benefit obligation as of September 30, 2005 (unaudited) and 2004 were 5.25 percent and 5.75 percent respectively.

Straight line amortization of unrecognized prior service cost over the average remaining years of service to full eligibility for benefits of the active plan participants and the minimum amortization of unrecognized gains and losses were used. The Department chose immediate recognition of the transition obligation existing at the beginning of FY 1994.

On December 8, 2003, the President signed into law the Medicare Prescription Drug, Improvement and Modernization Act of 2003. The law provides for a Federal subsidy to sponsors of retiree healthcare benefit plans that provide a benefit at least actuarially equivalent to the benefit established by the law. On January 21, 2005, the Centers for Medicare and Medicaid Services (CMS) issued final regulations implementing the requirements of the Act. There are currently 28 contractors that have concluded that their plans are at least actuarially equivalent. There are 6 plans that do not benefit retirees over 65 and 4 plans have determined they are not actuarially equivalent. These ten plans have not reflected any change due to the Act. One plan is unable at this time to determine the effect of the Act.

	Pension Benefits		Other Postretirement Benefits	
(in millions, unaudited)	FY 2005 (unaudited)	FY 2004	FY 2005 (unaudited)	FY 2004
Reconciliation of funded status				
Accumulated benefit obligation	$ 24,656	$ 21,700		
Effect of future compensation increases	4,054	3,797		
Benefit obligation	$ 28,710	$ 25,497	$ 11,591	$ 10,070
Plan assets	22,990	21,380	157	158
Funded status	$ (5,720)	$ (4,117)	$ (11,434)	$ (9,912)
Unrecognized net (asset)/obligation at transition	(626)	(749)		
Unrecognized prior service cost	938	962	(290)	(367)
Unrecognized actuarial loss	5,646	4,752	2,689	1,813
Net amount recognized	$ 238	$ 848	$ (9,035)	$ (8,466)
Minimum liability adjustment	(1,547)	(900)	-	-
Prepaid/(accrued) benefit cost after minimum liability	$ (1,309)	$ (52)	$ (9,035)	$ (8,466)
Total prepaid benefit cost after minimum liability	1,254	1,887	6	5
Total (accrued) benefit cost after minimum liability	$ (2,563)	$ (1,939)	$ (9,041)	$ (8,471)
Components of net periodic costs				
Service costs	$ 803	$ 749	$ 255	$ 236
Interest costs	1,447	1,394	580	561
Expected return on plan assets	(1,625)	(1,519)	(11)	(11)
Net amortization	235	274	39	55
Impact of curtailment or special termination benefits	26	9	17	(2)
Total net periodic costs	$ 886	$ 907	$ 880	$ 839
Contributions and benefit payments				
Employer contributions	$ 271	$ 279	$ 306	$ 342
Participant contributions	3	3	64	59
Benefit payments	1,069	986	383 *	412 *

* Includes $13 million paid from plan assets for FY 2005 (unaudited) and $11 million paid from plan assets for 2004.

(in millions, unaudited)	Pension Benefits	Other Postretirement Benefits
Expected contributions for fiscal year ending 9/30/2006		
Employer contributions	$451	$328
Participant contributions	3	71

(in millions, unaudited)	Pension Benefits	Other Postretirement Benefits
Estimated future benefit payments		
Fiscal Year 2006	$1,110	$377
Fiscal Year 2007	1,155	403
Fiscal Year 2008	1,209	439
Fiscal Year 2009	1,291	473
Fiscal Year 2010	1,379	510
Fiscal Years 2011 to 2015	8,430	3,091

The chart below shows the average target allocation for the 38 pension benefit plans and 6 other postretirement benefit plans with assets. The average actual fiscal year 2005 and 2004 allocations of assets are also shown.

Pension Benefits

Asset Category	Target Allocation	Percent of Plan Assets at September 30, 2005 (unaudited)	Percent of Plan Assets at September 30, 2004
Cash and equivalents	2.5%	3.0%	4.6%
Government bonds	12.5%	11.0%	9.2%
Corporate bonds	18.0%	15.7%	16.1%
Domestic equities	43.1%	45.5%	43.5%
International equities	9.6%	8.7%	9.5%
Real estate	1.3%	0.5%	1.0%
Insurance contracts (general accounts)	11.6%	11.9%	12.3%
Insurance contracts (separate accounts)	0.0%	2.6%	2.6%
Employer securities	0.2%	0.0%	0.2%
Other	1.2%	1.1%	1.0%
Total	100%	100%	100%

Other Postretirement Benefits

Asset Category	Target Allocation	Percent of Plan Assets at September 30, 2005 (unaudited)	Percent of Plan Assets at September 30, 2004
Cash and equivalents	0.0%	0.9%	1.0%
Government bonds	7.1%	11.0%	4.4%
Corporate bonds	0.0%	4.5%	0.0%
Domestic equities	12.0%	16.2%	14.6%
International equities	0.0%	0.0%	0.0%
Real estate	0.9%	0.7%	0.0%
Insurance contracts (general accounts)	60.0%	50.0%	60.0%
Insurance contracts (separate accounts)	0.0%	0.0%	0.0%
Employer securities	0.0%	0.0%	0.0%
Other	20.0%	16.7%	20.0%
Total	100%	100%	100%

16. Contingencies and Commitments

(in millions)

	FY 2005 (unaudited)	FY 2004
Spent nuclear fuel litigation	$ 5,000	$ 1,920
Other	58	23
Total contingencies and commitments	**$ 5,058**	**$ 1,943**

The Department is a party in various administrative proceedings, legal actions, and tort claims which may ultimately result in settlements or decisions adverse to the Federal Government. The Department has accrued contingent liabilities where losses are determined to be probable and the amounts can be estimated. Other significant contingencies exist where a loss is reasonably possible or where a loss is probable and an estimate cannot be determined. In some cases, a portion of any loss that may occur may be paid from Treasury's Judgment Fund (Judgment Fund). The Judgment Fund is a permanent, indefinite appropriation available to pay judgments against the Government for which the Department, unless required by law, is not required to reimburse from its appropriated funds. The following are significant contingencies:

- *Spent Nuclear Fuel Litigation* - In accordance with the Nuclear Waste Policy Act of 1982 (NWPA), the Department entered into contracts with more than 45 utilities in which, in return for payment of fees into the Nuclear Waste Fund, the Department agreed to begin disposal of spent nuclear fuel (SNF) by January 31, 1998. Because the Department has no facility available to receive SNF under the NWPA, the Department has been unable to begin disposal of the utilities' SNF as required by the contracts. Significant litigation claiming damages for partial breach of contract has ensued as a result of this delay.

  To date, four suits have been settled involving utilities that collectively produce about one-fifth of the nuclear-generated electricity in the United States. Under the terms of the settlement, the Treasury's Judgment Fund paid $80 million to the settling utilities for delay damages they have incurred through 2004 and will make annual payments to them for future costs as they are incurred. In addition, one case has been tried and a judgment entered (and subsequently affirmed on appeal) under which the utility was awarded no damages based on the court's finding that the utility had incurred no compensable costs as a result of the Government's delay as of the time of trial.

  Sixty cases remain pending in the Court of Federal Claims. Liability is probable in this matter, and in many of these cases orders have been entered establishing the Government's liability and the only outstanding issue to be litigated is ascertaining the amount of damages to be awarded. The industry is reported to estimate that damages for all utilities with which the Department has contracts ultimately will be at least $50 billion. The Department believes that the industry's estimate is highly inflated, and that the disposition of the five cases that have been resolved to date suggests that the Government's ultimate liability is likely to be significantly less than that estimate.

  In addition, the Department did not meet its goal of submitting a license application for the Yucca Mountain repository to the Nuclear Regulatory Commission by the end of calendar year 2004. The Department has since acknowledged that it will be unable to meet its goal of commencing disposal operations at a repository by 2010. The Department has increased its estimated liability for damages suffered by all utilities as a result of the delay in beginning SNF disposal to $5 billion, (unaudited).

  Under current law, any damages or settlements will be paid out of the Treasury's Judgment Fund, which the Department will not be required to reimburse.

- *Alleged Exposures to Radioactive and/or Toxic Substances* - A number of class action and multiple plaintiff tort suits have been filed against the Department's current and former contractors in which the plaintiffs seek damages for alleged exposures to radioactive and/or toxic substances as a result of the historic operations of the Department's nuclear facilities. The most significant of these cases arise out of past operations of the facilities at Rocky Flats, Colorado; Hanford, Washington; Paducah, Kentucky; Portsmouth (Piketon) and Mound, Ohio; and Brookhaven, New York. Collectively, damages sought in these cases exceed $119 billion.

  These cases are being vigorously defended, and, while in some cases proceedings are not far enough advanced to evaluate their likely outcome, in some of these cases substantially all of the plaintiffs' claims have been dismissed by the courts, and the likelihood of an unfavorable outcome is remote. Additionally, some matters have been appealed to the courts of appeal, and the final resolution of these issues has not been determined. However, the Department believes that, to the extent that there is a reasonable possibility of an

unfavorable outcome in these cases, any liability that might ultimately be imposed would be significantly less than what the plaintiffs seek. No related liabilities are recorded in the Department's financial statements.

- *Offsite Waste Litigation* – The State of Washington and interest groups have filed complaints in District Court seeking to prevent shipment of radioactive waste by the Department to the Hanford site. The complaints allege violations of the National Environmental Policy Act (NEPA) and the State of Washington Hazardous Waste Management Act (HWMA). In May 2003, the Court issued a preliminary injunction against shipments of transuranic waste and the State later filed a motion to expand the preliminary injunction to include offsite low-level and mixed low-level wastes. In early 2005 (unaudited), the District Court ruled against the United States on the HWMA portion of the case. The court also lifted the preliminary injunction against the importation of offsite transuranic waste, but instituted a stay against the importation of low-level and mixed low-level wastes. The Government may appeal the adverse ruling on the HWMA portion of the case, and the parties are in settlement negotiations regarding the NEPA portion of the case. The Department has voluntarily suspended shipments of offsite transuranic wastes to Hanford.

  In addition, on November 2, 2004, voters in the State of Washington approved Initiative 297, or the Cleanup Priority Act, which seeks to prevent the Department from shipping offsite waste to the Hanford site until existing waste at the site is cleaned up. The District Court granted an injunction that prohibited the implementation of the initiative before it became effective, and has established a briefing schedule that will conclude with oral argument in May 2006.

  The impact of this litigation and the approval of the Cleanup Priority Act on the costs of the Department's cleanup program are uncertain, and no provision for additional costs is included in the consolidated financial statements.

- *Depleted Uranium* – The Department has entered into settlements with the states of Kentucky and Ohio regarding the management of depleted uranium hexafluoride. The Ohio settlement expires in 2008, and the Kentucky settlement has been challenged by a lawsuit seeking to require the Department to manage the depleted uranium as hazardous waste under the Resource Conservation and Recovery Act (RCRA) of 1976. If the Department were required to manage this material in accordance with RCRA, it may have to make significant capital improvements and undertake additional recurring monitoring and inspection activities. The Department believes that it will be successful in defending against the lawsuit and will not be required to manage the depleted uranium as RCRA waste, and has included no provision for the costs of doing so in its consolidated financial statements.

- *Uranium Enrichment Services Pricing* – This litigation concerns whether electric utilities that purchased uranium enrichment services from the Department are entitled to retroactive price reductions based on the alleged inclusion of inappropriate costs in the prices the Government charged for enrichment services. During FY 2005, (unaudited) a settlement of $54.5 million covering the lead case was paid from the Judgment Fund. Three cases are pending involving the claims of 25 utilities. In aggregate, the pending cases seek approximately $439 million. The Government is engaged in settlement negotiations with the plaintiffs in one case, and the two others remain stayed.

- *Transuranic Waste* – The State of Idaho is challenging the interpretation of a settlement agreement reached in 1995 concerning the shipment of transuranic waste from the Idaho National Laboratory. The Government asserts that the agreement requires only stored waste to be shipped offsite by 2018, but the State asserts that this requirement also applies to buried transuranic waste. Should the State prevail, the resulting costs and operational disruptions could be substantial, but the Department has not recorded a provision for such costs in the consolidated financial statements.

- *Purchase/Sales Commitments and Irrigation Assistance* - The PMAs have entered into various agreements for power and transmission purchases and sales that vary in length but generally do not exceed 20 years. Current rates recover the additional costs of the obligations. The sales commitments are arrangements to sell expected surplus generating capabilities at future dates and the purchase commitments are to purchase power at future dates when the PMAs forecast a shortage of generating capability and prices are favorable. These contracts maximize revenues on estimated surplus volumes.

  The Northwest Power Act directs BPA to protect, mitigate and enhance fish and wildlife resources to the extent they are affected by federal hydroelectric projects on the Columbia River and its tributaries. BPA makes expenditures and incurs other costs for fish and wildlife consistent with the Northwest Power Act and the Pacific Northwest Power and Conservation Council's Columbia River Basin Fish and Wildlife Program. In addition, in the wake of certain listings of fish species under the Endangered Species Act (ESA) as threatened or endangered, BPA is financially responsible for expenditures and other costs arising from conformance with the ESA and certain biological opinions prepared by the National Oceanic and Atmospheric Administration and the Fish and Wildlife Service in furtherance of the ESA.

  As directed by legislation, BPA is required to make cash distributions to Treasury for original construction costs of certain Pacific Northwest irrigation projects that have been determined to be beyond the irrigators' ability to pay. These irrigation distributions do not specifically relate to power

generation and are required only if doing so does not result in an increase to power rates. Accordingly, these distributions are not considered to be regular operating costs of the power program and are treated as distributions from accumulated net revenues or expenses when paid.

The following table summarizes future purchase power/sales commitments and irrigation assistance (unaudited).

Fiscal Year	Purchase Power	Sales Commitments	Irrigation Assistance
2006	$ 622	$ 2,096	$ -
2007	83	1,712	-
2008	77	1,723	3
2009	106	1,722	7
2010	99	1,807	-
2011+	162	1,803	657
Total	**$1,149**	**$ 10,863**	**$ 667**

17. Earned Revenues

(in millions)

	FY 2005 (unaudited)		FY 2004	
Naval Reactors				
Public	$ (10)		$ -	
Intragovernmental	(8)		(8)	
Total Naval Reactors		$ (18)		$ (8)
Energy Security				
Public	$ (4,048)		$ (4,013)	
Intragovernmental	(72)		(76)	
Total Energy Security		(4,120)		(4,089)
Environmental Management				
Public	$ 1		$ (16)	
Intragovernmental	(152)		(137)	
Total Environmental Management		(151)		(153)
Nuclear Waste				
Public	$ (762)		$ (722)	
Intragovernmental	(1,049)		(812)	
Less Deferred Revenue Adjustment	1,490		1,212	
Total Nuclear Waste		(321)		(322)
Reimbursable Programs				
Public	$ (532)		$ (404)	
Intragovernmental	(2,719)		(2,353)	
Total Reimbursable Programs		(3,251)		(2,757)
Other Programs				
Federal Energy Regulatory Commission				
Public (Note 18)	$ (222)		$ (213)	
Other				
Public (Note 18)	(75)		(90)	
Total Other Programs		(297)		(303)
Total earned revenues		**$ (8,158)**		**$ (7,632)**

Energy Security

These revenues primarily result from the Department's power marketing activities. The Department's four power marketing administrations market electricity generated primarily by Federal hydropower projects. Preference for the sale of power is given to public bodies and cooperatives. Revenues from selling power and transmission services are used to repay Treasury annual appropriations and maintenance costs, repay the capital investments with interest, and assist capital repayment of other features and certain projects. Revenues collected by the Southeastern, Southwestern, and Western Area Power Administrations on behalf of other agencies are reported as custodial activity (see Note 24).

Environmental Management

These revenues primarily result from assessed fees to domestic utilities to pay for the costs for decontamination and decommissioning DOE's gaseous diffusion facilities used for uranium enrichment services. Revenue from assessments against domestic utilities is recognized when such assessments are authorized by legislation. Revenue recognized includes known adjustments for transfers between utilities and other reconciliation adjustments. Increases in current and future assessments due to changes in the Consumer Price Index are recognized in each fiscal year as such changes occur. Interest earned on accumulated funds in excess of those needed to pay current program costs totaled $145 million and $131 million for September 30, 2005 (unaudited) and 2004, respectively.

Nuclear Waste

The Nuclear Waste Policy Act of 1982 requires the Department to assess fees against owners and generators of high-level radioactive waste and spent nuclear fuel to fund the costs associated with management and disposal activities under the Act. Fees of $733 million and $736 million were assessed during the years ended September 30, 2005 (unaudited) and 2004, respectively. Interest earned on fees owed and on accumulated funds in excess of those needed to pay current program costs totaled $953 million and $799 million for FY 2005 (unaudited) and FY 2004, respectively. Adjustments are made annually to defer the recognition of revenues until earned (i.e., when costs are incurred) for the Civilian Radioactive Waste Management program.

Reimbursable Programs

The Department performs work for other Federal agencies and private companies on a reimbursable work basis and on a cooperative work basis. The Department also has entered into cooperative research and development agreements to increase the transfer of Federally funded technologies to the private sector for the benefit of the U.S. economy.

The Department's policy is to establish prices for materials and services provided to public entities at the Department's full cost. In some cases, the full cost information reported by the Department in accordance with SFFAS 4, *Managerial Cost Accounting Concepts and Standards for the Federal Government,* exceeds revenues. This results from implementation of provisions contained in the Economy Act of 1932, as amended; the Atomic Energy Act of 1954, as amended; and the *National Defense Authorization Act for Fiscal Year 1999,* which provide the Department with the authority to charge customers an amount less than the full cost of the product or service. Costs attributable to generating intragovernmental reimbursable program revenues were $2,882 million and $2,341 million for FY 2005 (unaudited) and FY 2004, respectively.

Federal Energy Regulatory Commission

The Federal Energy Regulatory Commission (FERC) is an independent regulatory organization within the Department that regulates essential aspects of electric, natural gas and oil pipeline, and non-Federal hydropower industries. It ensures that the rates, terms, and conditions of service for segments of the electric and natural gas and oil pipeline industries are just and reasonable; it authorizes the construction of natural gas pipeline facilities; and it ensures that hydropower licensing, administration, and safety actions are consistent with the public interest. FERC assesses most of its administrative program costs as an annual charge to each regulated entity.

18. Supporting Schedule of Net Cost for Other Programs

(in millions)

	FY 2005 (unaudited)		FY 2004	
Federal Energy Regulatory Commission				
Program costs - public	$ 221		$ 213	
Less earned revenues (Note 17)	(222)		(213)	
		$ (1)		$ -
Inspector General		45		41
Environment, safety and health		147		162
Other defense activities		203		298
Other programs - public				
Program costs	$ 51		$ 44	
Less earned revenues (Note 17)	(75)		(90)	
		(24)		(46)
Total net cost for other programs		**$ 370**		**$ 455**

19. Costs Applied to Reduction of Legacy Environmental Liabilities

Costs applied to reduction of legacy environmental liabilities are current year operating expenditures for the remediation of contaminated facilities and wastes generated from past operations. These amounts are excluded from current year program expenses since the expense was accrued in prior years when the Department recorded the environmental liabilities.

20. Costs Not Assigned

(in millions)

	FY 2005 (unaudited)	FY 2004
Change in unfunded environmental liability estimates (Note 14)	$ 16,519	$ 6,011
Change in spent nuclear fuel contingency (Note 16)	3,080	-
Changes in contractor pension and PRB estimates (Notes 9 & 15)	1,594	1,013
Waste incidental to reprocessing litigation	-	(850)
Change in unfunded safety and health liabilities (Note 13)	(16)	360
Change in occupational illness program -		
Subtitle B	502	846
Subtitle D and E (Note 13)	3,631	810
Uranium enrichment services pricing litigation (Note 16)	55	-
Other	134	87
Total costs not assigned	**$ 25,499**	**$ 8,277**

Compensation Program for Occupational Illnesses

The EEOICPA authorized compensation for certain illnesses suffered by employees of the Department, its predecessor agencies, and contractors who performed work for the nuclear weapons program. Subtitle B covers illnesses associated with exposure to radiation, beryllium, or silica. In general, each eligible employee and survivors of deceased employees will receive compensation for the disability or death of that employee in the amount of $150,000 plus the costs of medical care.

The National Defense Authorization Act of 2005 amended the EEOICPA to include Subtitle E, Contractor Employee Compensation. This amendment replaced Subtitle D of the EEOICPA, which provided assistance from the Department in obtaining state workers' compensation benefits. The new program grants workers' compensation benefits to covered employees and their families for illness and death arising from exposure to toxic substances at a DOE facility. The amendment also makes it possible for uranium workers as defined under Section 5 of the Radiation Exposure Compensation Act to receive compensation under Subtitle E for illnesses due to toxic substance exposure at a uranium mine or mill covered under that Act.

The law makes payments under these programs the responsibility of the DOL. Therefore, the liability is recorded by the DOL and changes in the total liability are recognized by the Department as imputed costs and imputed financing source.

21. Nuclear Waste Fund Offsetting Receipts, Deferred

The Department defers the recognition of revenues related to the fees paid by owners and generators of spent nuclear fuel, and the interest earned on the invested balance of these funds, to the extent that the receipts exceed current year costs for developing and managing a permanent repository for spent nuclear fuel generated by civilian reactors. In addition, market value adjustments for Treasury securities of the Nuclear Waste Fund are not recognized as revenues in the current period unless redeemed by the Department. The gross amount of receipts, interest collected, and the market value adjustments for zero coupon bond investments are reported as offsetting receipts on the *Consolidated Statements of Financing.* Therefore, a reconciling amount is reported for that portion of the offsetting receipts for which revenues are not recognized in the current period.

22. Statement of Budgetary Resources

(in millions)

The *Statement of Budgetary Resources* is presented on a combined, rather than a consolidated, basis in accordance with OMB guidance.

Details of Obligations Incurred:

	FY 2005 (unaudited)	FY 2004
Direct, subject to apportionment	$ 24,879	$ 23,878
Direct, not subject to apportionment	3,253	4,547
Reimbursable, subject to apportionment	3,744	4,062
Total obligations incurred	**$ 31,876**	**$ 32,487**

Adjustments to Beginning Balances of Budgetary Resources:

	FY 2005 (unaudited)	FY 2004
Prior year unobligated balance, net - end of period		
Available, apportioned	$ 2,538	$ 1,790
Exempt from apportionment	12	15
Not available	1,486	1,803
Total - prior year unobligated balance	$ 4,036	$ 3,608
Other adjustments	-	(32)
Current year unobligated balance, start of period	**$ 4,036**	**$ 3,576**

Unobligated Balances Not Available:

	FY 2005 (unaudited)	FY 2004
United States Enrichment Corporation Fund	$ 1,383	$ 1,350
Reimbursable work/collections in excess of amount anticipated	224	119
Prior year deobligations in excess of apportioned amount	11	4
Expired appropriations and other amounts not apportioned	11	13
Total unobligated balances not available (Note 3)	**$ 1,629**	**$ 1,486**

Unobligated balances not available represent budgetary resources that have not been apportioned to the Department.

Reconciliation to Appropriations Received on the Statements of Changes in Net Position:

	FY 2005 (unaudited)	FY 2004
Appropriations received on the Combined Statements of Budgetary Resources	$ 25,062	$ 24,190
Less:		
Special and trust fund appropriated receipts	(1,136)	(853)
Appropriated capital owed	(43)	(45)
Appropriations made available from previous year	(101)	(119)
Appropriations received on the Statement of Changes in Net Position	**$ 23,782**	**$ 23,173**

Reconciliation to the Budget:

	FY 2005 (unaudited)			FY 2004		
	Budgetary Resources	Obligations Incurred	Outlays	Budgetary Resources	Obligations Incurred	Outlays
Combined Statement of Budgetary Resources	$ 36,117	$ 31,876	$ 24,603	$ 36,523	$ 32,487	$ 23,087
OMB adjustments made to exclude:						
United States Enrichment Corporation	(1,383)	-	33	(1,350)	-	48
Expired accounts	(10)	-	-	(7)	-	
Other	-	-	-	(4)	1	(2)
Budget of the United States Government	**$ 34,724**	**$ 31,876**	**$ 24,636**	**$ 35,162**	**$ 32,488**	**$ 23,133**

The FY 2005 (unaudited) *Combined Statement of Budgetary Resources* final reconciliation will be completed once the President's Budget is published in February 2006. The FY 2004 *Combined Statement of Budgetary Resources* is reconciled to the President's Budget that was published in February 2005.

23. Increases/(Decreases) in Unfunded Liabilities

(in millions)

	FY 2005 (unaudited)	FY 2004
Change in unfunded environmental liability estimates (Note 14)	$ 16,519	$ 6,011
Spent nuclear fuel contingency (Note 16)	3,080	
Change in contractor net pension and PRB estimates (Notes 9 and 15)	1,826	1,013
Waste incidental to reprocessing litigation	-	(850)
Change in unfunded safety and health liabilities (Note 13)	(16)	360
Compensation program for occupational illnesses - Subtitle D (Notes 13 and 20)	-	810
Change in other unfunded liabilities	(209)	213
Total increases in unfunded liabilities	**$ 21,200**	**$ 7,557**

24. Custodial Activities

(in millions)

	FY 2005 (unaudited)	FY 2004
Cash collections		
Power marketing administrations	$ 657	$ 624
Petroleum Pricing Violation Escrow Fund	23	3
Federal Energy Regulatory Commission	53	75
Total cash collections for custodial activities	**$ 733**	**$ 702**

Power Marketing Administrations

The Southeastern, Southwestern, and Western Area Power Administrations are responsible for collecting and remitting to the Department of the Treasury and the Department of the Interior revenues attributable to the hydroelectric power projects owned and operated by the Department of Defense, Army Corps of Engineers; the Department of the Interior, Bureau of Reclamation; and the Department of State, International Boundary and Water Commission. These revenues are reported as custodial activities of the Department.

Petroleum Pricing Violation Escrow Fund

Custodial revenues for the Petroleum Pricing Violation Escrow Fund result primarily from interest earned from investment of the fund balance, which is invested in U.S. Treasury Bills and certificates of deposit with minority owned financial institutions, pending determination of the disposition of the funds. Funds are disbursed to individuals and groups who are able to provide proof of financial injury related to the violations of Petroleum Pricing Regulations during the 1970s and early 1980s. The Department also distributes funds to the U.S. Treasury and to the States, Possessions, and Territories of the United States.

Consolidating Schedules

U. S. Department of Energy
Consolidating Schedules - Balance Sheets
As of September 30, 2005 and 2004
($ in millions)

	FY 2005 (unaudited)			
	Federal Energy Regulatory Commission	Power Marketing Administrations	All Other DOE Programs	Eliminations
ASSETS				
Intragovernmental				
Fund Balance with Treasury	$ 113	$ 922	$ 14,599	$ -
Investments, Net	-	-	22,197	-
Accounts Receivable, Net	-	18	1,621	(987)
Regulatory Assets	-	4,536	-	-
Other	-	1	90	(70)
Total Intragovernmental	$ 113	$ 5,477	$ 38,507	$ (1,057)
Investments, Net	-	-	230	-
Accounts Receivable, Net	20	425	3,545	-
Inventory, Net				
Strategic Petroleum & Northeast Home Heating Oil Reserves	-	-	19,314	-
Nuclear Materials	-	-	21,285	-
Other	-	88	356	-
General Property, Plant, and Equipment, Net	9	6,067	17,114	-
Regulatory Assets	-	5,653	-	-
Other Non-Intragovernmental Assets	-	2,978	1,613	-
Total Assets	$ 142	$ 20,688	$ 101,964	$ (1,057)
LIABILITIES				
Intragovernmental				
Accounts Payable	$ 2	$ 13	$ 311	$ (270)
Debt	-	9,958	-	-
Deferred Revenues and Other Credits	-	57	855	(787)
Other Liabilities	(7)	62	114	-
Total Intragovernmental	$ (5)	$ 10,090	$ 1,280	$ (1,057)
Accounts Payable	7	149	3,727	-
Debt Held by the Public	-	6,574	-	-
Deferred Revenues and Other Credits	-	1,812	19,780	-
Environmental and Disposal Liabilities	-	-	189,710	-
Pension and Other Actuarial Liabilities	-	55	11,672	-
Other Liabilities	120	197	3,347	-
Contingencies and Commitments	-	6	5,052	-
Total Liabilities	$ 122	$ 18,883	$ 234,568	$ (1,057)
NET POSITION				
Unexpended Appropriations	$ 14	$ -	$ 8,964	$ -
Cumulative Results of Operations	6	1,805	(141,568)	-
Total Net Position	$ 20	$ 1,805	$ (132,604)	$ -
Total Liabilities and Net Position	$ 142	$ 20,688	$ 101,964	$ (1,057)

See indepedent auditor's report.

	FY 2004				
Consolidated	Federal Energy Regulatory Commission	Power Marketing Administrations	All Other DOE Programs	Eliminations	Consolidated
$ 15,634	$ 105	$ 1,046	$ 14,455	$ -	$ 15,606
22,197	-	-	20,532	-	20,532
652	-	24	1,538	(999)	563
4,536	-	4,613	-	-	4,613
21	-	4	38	(29)	13
$ 43,040	$ 105	$ 5,687	$ 36,563	$ (1,028)	$ 41,327
230	-	-	256	-	256
3,990	34	385	3,643	-	4,062
19,314	-	-	18,148	-	18,148
21,285	-	-	21,722	-	21,722
444	-	95	341	-	436
23,190	8	5,647	16,678	-	22,333
5,653	-	5,741	-	-	5,741
4,591	-	3,085	2,198	-	5,283
$ 121,737	$ 147	$ 20,640	$ 99,549	$ (1,028)	$ 119,308
$ 56	$ 3	$ 16	$ 228	$ (146)	$ 101
9,958	-	10,468	-	-	10,468
125	-	105	926	(882)	149
169	55	54	153	-	262
$ 10,308	$ 58	$ 10,643	$ 1,307	$ (1,028)	$ 10,980
3,883	6	221	3,156	-	3,383
6,574	-	6,531	-	-	6,531
21,592	-	1,895	18,340	-	20,235
189,710	-	-	181,742	-	181,742
11,727	-	51	10,479	-	10,530
3,664	62	189	4,116	-	4,367
5,058	-	-	1,943	-	1,943
$ 252,516	$ 126	$ 19,530	$ 221,083	$ (1,028)	$ 239,711
$ 8,978	$ 18	$ 4	$ 8,762	$ -	$ 8,784
(139,757)	3	1,106	(130,296)	-	(129,187)
$ (130,779)	$ 21	$ 1,110	$ (121,534)	$ -	$ (120,403)
$ 121,737	$ 147	$ 20,640	$ 99,549	$ (1,028)	$ 119,308

See indepedent auditor's report.

U. S. Department of Energy

Consolidating Schedules of Net Cost

For Years Ended September 30, 2005 and 2004
($ in millions)

	FY 2005 (unaudited)			
	Federal Energy Regulatory Commission	Power Marketing Administrations	All Other DOE Programs	Eliminations
STRATEGIC GOALS:				
Defense				
Nuclear Weapons Stewardship:				
Total Program Costs	$ -	$ -	$ 6,779	$ -
Nuclear Nonproliferation:				
Total Program Costs	$ -	$ -	$ 1,191	$ -
Naval Reactors:				
Program Costs	-	-	810	-
Less: Earned Revenues	-	-	(18)	-
Net Cost of Naval Reactors	$ -	$ -	$ 792	$ -
Net Cost of Defense	$ -	$ -	$ 8,762	$ -
Energy				
Program Costs	-	3,620	3,050	(53)
Less: Earned Revenues	-	(4,063)	(96)	39
Net Cost of Energy	$ -	$ (443)	$ 2,954	$ (14)
Science				
Total Program Costs	$ -	$ -	$ 3,565	$ -
Environment				
Environmental Management:				
Program Costs	-	-	7,178	(459)
Less: Earned Revenues	-	-	(151)	-
Net Cost of Environmental Management	$ -	$ -	$ 7,027	$ (459)
Nuclear Waste:				
Program Costs	-	-	521	-
Less: Earned Revenues	-	-	(321)	-
Net Cost of Nuclear Waste	$ -	$ -	$ 200	$ -
Net Cost of Environment	$ -	$ -	$ 7,227	$ (459)
Net Cost of Strategic Goals	$ -	$ (443)	$ 22,508	$ (473)
OTHER PROGRAMS:				
Reimbursable Programs:				
Program Costs	-	173	3,141	-
Less: Earned Revenues	-	(151)	(3,100)	-
Net Cost of Reimbursable Programs	$ -	$ 22	$ 41	$ -
Other Programs				
Program Costs	221	-	546	(100)
Less: Earned Revenues	(222)	$ -	(175)	100
Net Cost of Other Programs	$ (1)	$ -	$ 371	$ -
Other Allocable Costs		$ -	-	-
Costs Applied to Reduction of Legacy Environmental Liabilities	-	-	(6,637)	-
Changes in Unfunded Liability Estimate		-	-	-
Costs Not Assigned	-	-	25,499	-
Net Cost of Operations	$ (1)	$ (421)	$ 41,782	$ (473)

See indepedent auditor's report.

	FY 2004					
Consolidated	Federal Energy Regulatory Commission	Power Marketing Administrations	All Other DOE Programs	Eliminations	Consolidated
$ 6,779	$ -	$ -	$ 6,220	$ -	$ 6,220
$ 1,191	$ -	$ -	$ 1,101	$ -	$ 1,101
810	-	-	740	-	740
(18)	-	-	(8)	-	(8)
$ 792	$ -	$ -	$ 732	$ -	$ 732
$ 8,762	$ -	$ -	$ 8,053	$ -	$ 8,053
6,617	-	3,722	2,723	(67)	6,378
(4,120)	-	(4,107)	(34)	52	(4,089)
$ 2,497	$ -	$ (385)	$ 2,689	$ (15)	$ 2,289
$ 3,565	$ -	$ -	$ 3,196	$ -	$ 3,196
6,719	-	-	6,732	(449)	6,283
(151)	-	-	(153)	-	(153)
$ 6,568	$ -	$ -	$ 6,579	$ (449)	$ 6,130
521	-	-	530	-	530
(321)	-	-	(196)	(126)	(322)
$ 200	$ -	$ -	$ 334	$ (126)	$ 208
$ 6,768	$ -	$ -	$ 6,913	$ (575)	$ 6,338
$ 21,592	$ -	$ (385)	$ 20,851	$ (590)	$ 19,876
3,314	-	-	2,738	-	2,738
(3,251)	-	-	(2,757)	-	(2,757)
$ 63	$ -	$ -	$ (19)	$ -	$ (19)
667	213	-	642	(97)	758
(297)	(213)	-	(187)	97	(303)
$ 370	$ -	$ -	$ 455	$ -	$ 455
-	-	-	-	-	-
(6,637)	-	-	(6,667)	-	(6,667)
-					
25,499	-	-	8,151	126	8,277
$ 40,887	$ -	$ (385)	$ 22,771	$ (464)	$ 21,922

See indepedent auditor's report.

U. S. Department of Energy
Consolidating Schedules of Changes in Net Position
For Years Ended September 30, 2005 and 2004
($ in millions)

	FY 2005 (unaudited)			
	Federal Energy Regulatory Commission	Power Marketing Administrations	All Other DOE Programs	Eliminations
CUMULATIVE RESULTS OF OPERATIONS:				
Beginning Balance	$ 3	$ 1,106	$ (130,296)	$ -
Budgetary Financing Sources:				
Appropriations Used	4	4	23,703	-
Nonexchange Revenues	-	-	35	-
Donations, Financial	-	-	13	-
Transfers - In/(Out) Without Reimbursement, Budgetary	-	(141)	(13)	-
Other Financing Sources:				
Donations, Nonfinancial	-	340	-	-
Transfers - In/(Out) Without Reimbursement, Nonbudgetary	(15)	47	2,100	-
Imputed Financing from Costs Absorbed by Others	11	-	4,268	-
Other Gains and Losses	2	28	404	(473)
Total Financing Sources	$ 2	$ 278	$ 30,510	$ (473)
Net Cost of Operations	1	421	(41,782)	473
Net Change	$ 3	$ 699	$ (11,272)	$ -
Ending Balance - Cumulative Results of Operations	$ 6	$ 1,805	$ (141,568)	$ -
UNEXPENDED APPROPRIATIONS:				
Beginning Balance	$ 18	$ 4	$ 8,762	$ -
Budgetary Financing Sources Related to Appropriations:				
Appropriations Received	-	-	23,782	-
Appropriations Transferred - In/(Out)	-	-	312	-
Other Adjustments	-	-	(189)	-
Appropriations Used	(4)	(4)	(23,703)	-
Total Financing Sources Related to Appropriations	$ (4)	$ (4)	$ 202	$ -
Ending Balance - Unexpended Appropriations	$ 14	$ -	$ 8,964	$ -

See indepedent auditor's report.

	FY 2004				
Consolidated	Federal Energy Regulatory Commission	Power Marketing Administrations	All Other DOE Programs	Eliminations	Consolidated
$ (129,187)	$ 7	$ 893	$ (133,062)	$ -	$ (132,162)
$ 23,711	(3)	6	23,106	-	23,109
35	-	-	13	-	13
13	-	-	1	-	1
(154)	-	(178)	(82)	-	(260)
340	-	-	-	-	-
2,132	(9)	-	1,040	-	1,031
4,279	8	-	1,003	-	1,011
(39)	-	-	456	(464)	(8)
$ 30,317	$ (4)	$ (172)	$ 25,537	$ (464)	$ 24,897
(40,887)	-	385	(22,771)	464	(21,922)
$ (10,570)	$ (4)	$ 213	$ 2,766	$ -	$ 2,975
$ (139,757)	$ 3	$ 1,106	$ (130,296)	$ -	$ (129,187)
$ 8,784	$ 15	$ 10	$ 8,875	$ -	$ 8,900
23,782	-	-	23,173	-	23,173
312	-	-	11	-	11
(189)	-	-	(191)	-	(191)
(23,711)	3	(6)	(23,106)	-	(23,109)
$ 194	$ 3	$ (6)	$ (113)	$ -	$ (116)
$ 8,978	$ 18	$ 4	$ 8,762	$ -	$ 8,784

See indepedent auditor's report.

U. S. Department of Energy
Combining Schedules of Budgetary Resources
For Years Ended September 30, 2005 and 2004
($ in millions)

	FY 2005 (unaudited)			
	Federal Energy Regulatory Commission	Power Marketing Administrations	All Other DOE Programs	Consolidated
BUDGETARY RESOURCES				
Budget Authority				
Appropriations Received (Note 22)	$ 3	$ 213	$ 24,846	$ 25,062
Borrowing and Contract Authority	-	1,333	-	1,333
Net Transfers	-	(73)	240	167
Unobligated Balance				
Beginning of Period (Note 22)	6	161	3,869	4,036
Net Transfers, Actual	-	-	2	2
Spending Authority from Offsetting Collections				
Earned				
Collected	210	3,786	3,228	7,224
Receivable from Federal Sources	-	50	81	131
Change in Unfilled Customer Orders				
Advances received	-	17	13	30
Without Advances from Federal Sources	-	(2)	214	212
Recoveries of Prior Year Obligations				
Actual	-	-	34	34
Authority Temporarily Not Available	-	(1)	(265)	(266)
Authority Permanently Not Available	-	(1,639)	(209)	(1,848)
Total Budgetary Resources	$ 219	$ 3,845	$ 32,053	$ 36,117
STATUS OF BUDGETARY RESOURCES				
Obligations Incurred	$ -	$ -	$ -	$ -
Direct	210	226	$ 24,443	24,879
Exempt from Apportionment	-	2,923	330	3,253
Reimbursable	-	531	3,213	3,744
Total Obligations Incurred (Note 22)	$ 210	$ 3,680	$ 27,986	$ 31,876
Unobligated Balances Available				
Apportioned Available	9	164	2,415	2,588
Exempt from Apportionment	-	-	24	24
Unobligated Balances Not Available	-	1	1,628	1,629
Total Status of Budgetary Resources	$ 219	$ 3,845	$ 32,053	$ 36,117
RELATIONSHIP OF OBLIGATIONS TO OUTLAYS				
Obliated Balance - Beginning of Period	$ 26	$ 2,082	$ 10,795	$ 12,903
Obligated Balance - End of Period				
Accounts Receivable	$ -	$ (306)	$ (460)	$ (766)
Unfilled Customer Orders from Federal Sources	-	(6)	(3,915)	(3,921)
Undelivered Orders	5	129	10,443	10,577
Accounts Payable	15	1,950	4,690	6,655
	$ 20	$ 1,767	$ 10,758	$ 12,545
Outlays				
Disbursements	$ 215	$ 3,948	$ 27,693	$ 31,856
Collections	(210)	(3,803)	(3,240)	(7,253)
Subtotal	$ 5	$ 145	$ 24,453	$ 24,603
Less: Offsetting Receipts	(18)	(739)	(2,479)	(3,236)
Net Outlays	$ (13)	$ (594)	$ 21,974	$ 21,367

See indepedent auditor's report.

FY 2004			
Federal Energy Regulatory Commission	Power Marketing Administrations	All Other DOE Programs	Combined
$ 3	$ 215	$ 23,972	$ 24,190
-	1,681	-	1,681
-	(74)	(11)	(85)
4	176	3,396	3,576
-	-	(2)	(2)
204	3,948	2,851	7,003
-	(86)	109	23
-	(39)	(1)	(40)
-	(8)	993	985
-	-	32	32
-	-	(101)	(101)
-	(482)	(257)	(739)
$ 211	$ 5,331	$ 30,981	$ 36,523
$ 205	$ 247	$ 23,426	$ 23,878
-	4,356	191	4,547
-	568	3,494	4,062
$ 205	$ 5,171	$ 27,111	$ 32,487
6	160	2,372	2,538
-	-	12	12
-	-	1,486	1,486
$ 211	$ 5,331	$ 30,981	$ 36,523
$ 24	$ 870	$ 10,612	$ 11,506
$ -	$ (256)	$ (380)	$ (636)
-	(8)	(3,700)	(3,708)
12	164	10,185	10,361
14	2,182	4,690	6,886
$ 26	$ 2,082	$ 10,795	$ 12,903
$ 204	$ 4,052	$ 25,794	$ 30,050
(205)	(3,910)	(2,848)	(6,963)
$ (1)	$ 142	$ 22,946	$ 23,087
(19)	(531)	(2,611)	(3,161)
$ (20)	$ (389)	$ 20,335	$ 19,926

See indepedent auditor's report.

U. S. Department of Energy
Consolidating Schedules of Financing
For Years Ended September 30, 2005 and 2004
($ in millions)

	FY 2005 (unaudited)			
	Federal Energy Regulatory Commission	Power Marketing Administrations	All Other DOE Programs	Eliminations
RESOURCES USED TO FINANCE ACTIVITIES:				
Budgetary Resources Obligated:				
Obligations Incurred	$ 210	$ 3,680	$ 27,986	$ -
Less: Spending Authority from Offsetting Collections and Recoveries	(210)	(3,851)	(3,570)	-
Obligations, Net of Offsetting Collections and Recoveries	$ -	$ (171)	$ 24,416	$ -
Offsetting Receipts	(18)	(739)	(2,479)	-
Net Obligations	$ (18)	$ (910)	$ 21,937	$ -
Other Resources:				
Donations	-	340	(339)	-
Imputed Financing from Costs Absorbed by Others	11	-	4,268	-
Transfers-In/(Out)	(15)	47	2,100	-
NWF Offsetting Receipts, Deferred	-	-	2,095	-
Other	-	(495)	522	(14)
Net Other Resources Used to Finance Activities	$ (4)	$ (108)	$ 8,646	$ (14)
Total Resources Used to Finance Activities	$ (22)	$ (1,018)	$ 30,583	$ (14)
RESOURCES USED TO FINANCE ITEMS NOT PART OF THE NET COST OF OPERATIONS:				
Change in Resources Obligated for Goods/Services/Benefits Ordered But Not Yet Provided	$ 7	$ 55	$ 10	$ -
Resources that Finance the Acquisition of Assets	(4)	(320)	(5,426)	-
Resources that Fund Expenses Recognized in Prior Periods	-	-	(6,464)	-
Budgetary Offsetting Collections and Receipts that Do Not Affect the Net Cost of Operations	18	246	393	(482)
Other Resources and Adjustments	(2)	(160)	(271)	23
Total Resources Used to Finance Items Not Part of the Net Cost of Operations	$ 19	$ (179)	$ (11,758)	$ (459)
Total Resources Used to Finance the Net Cost of Operations	$ (3)	$ (1,197)	$ 18,825	$ (473)
NET COST OF ITEMS THAT DO NOT REQUIRE OR GENERATE RESOURCES IN CURRENT PERIOD:				
Components Requiring or Generating Resources in Future Periods:				
Increase in Unfunded Liability Estimates	$ -	$ 239	$ 20,961	$ -
Increase in Exchange Revenue Receivable from the Public	1	1	-	-
Total Components Requiring or Generating Resources in Future Periods	$ 1	$ 240	$ 20,961	$ -
Components Not Requiring or Generating Resources:				
Depreciation and Amortization	$ 3	$ 539	$ 1,276	$ -
Revaluation of Assets and Liabilities	-	-	(194)	-
Other	(2)	(3)	914	-
Total Components Not Requiring or Generating Resources	$ 1	$ 536	$ 1,996	$ -
Total Net Cost of Items that Do Not Require or Generate Resources in Current Period	$ 2	$ 776	$ 22,957	$ -
NET COST OF OPERATIONS	$ (1)	$ (421)	$ 41,782	$ (473)

See indepedent auditor's report.

	FY 2004				
Consolidated	Federal Energy Regulatory Commission	Power Marketing Administrations	All Other DOE Programs	Eliminations	Consolidated
$ 31,876	$ 205	$ 5,171	$ 27,111	$ -	$ 32,487
(7,631)	(204)	(3,815)	(3,984)	-	(8,003)
$ 24,245	$ 1	$ 1,356	$ 23,127	$ -	$ 24,484
(3,236)	(19)	(531)	(2,611)	-	(3,161)
$ 21,009	$ (18)	$ 825	$ 20,516	$ -	$ 21,323
1	-	-	-	-	-
4,279	7	-	1,004	-	1,011
2,132	(9)	-	1,040	-	1,031
2,095	-	-	2,095	-	2,095
13	-	-	7	(15)	(8)
$ 8,520	$ (2)	$ -	$ 4,146	$ (15)	$ 4,129
$ 29,529	$ (20)	$ 825	$ 24,662	$ (15)	$ 25,452
$ 72	$ (1)	$ (42)	$ 549	$ -	$ 506
(5,750)	-	(542)	(3,894)	-	(4,436)
(6,464)	-	-	(7,298)	-	(7,298)
175	19	291	517	(740)	87
(410)	(3)	(1,673)	(302)	165	(1,813)
$ (12,377)	$ 15	$ (1,966)	$ (10,428)	$ (575)	$ (12,954)
$ 17,152	$ (5)	$ (1,141)	$ 14,234	$ (590)	$ 12,498
$ 21,200	$ 1	$ 178	$ 7,252	$ 126	$ 7,557
2	-	3	-	-	3
$ 21,202	$ 1	$ 181	$ 7,252	$ 126	$ 7,560
$ 1,818	$ 2	$ 447	$ 1,090	$ -	$ 1,539
(194)	-	-	(161)	-	(161)
909	2	128	356	-	486
$ 2,533	$ 4	$ 575	$ 1,285	$ -	$ 1,864
$ 23,735	$ 5	$ 756	$ 8,537	$ 126	$ 9,424
$ 40,887	$ -	$ (385)	$ 22,771	$ (464)	$ 21,922

See indepedent auditor's report.

U. S. Department of Energy
Consolidating Schedules of Custodial Activities
For Years Ended September 30, 2005 and 2004
($ in millions)

	FY 2005 (unaudited)			
	Federal Energy Regulatory Commission	Power Marketing Administrations	All Other DOE Programs	Eliminations
SOURCES OF COLLECTIONS				
Cash Collections				
Interest	$ -	$ -	$ 20	$ -
Federal Energy Regulatory Commission	53	-	-	-
Power Marketing Administration Custodial Revenue	-	657	-	-
Other Custodial Revenue	-	-	3	-
Total Cash Collections	$ 53	$ 657	$ 23	$ -
Accrual Adjustment	(8)	(1)	(10)	-
Total Revenue	$ 45	$ 656	$ 13	$ -
DISPOSITION OF REVENUE				
Transferred to Others				
Department of the Treasury	(31)	(584)	(9)	-
Army Corps of Engineers	(5)	-	-	-
Bureau of Reclamation	(5)	(74)	-	-
Others	(3)	-	-	-
Retained by DOE	-	-	-	
Increase (Decrease) in Amounts to be Transferred	(1)	2	(4)	-
Net Custodial Activity	$ -	$ -	$ -	$ -

See indepedent auditor's report.

	FY 2004					
Consolidated	Federal Energy Regulatory Commission	Power Marketing Administrations	All Other DOE Programs	Eliminations	Consolidated	
$ 20	$ -	$ -	$ 3	$ -	$ 3	
53	75	-	-	-	75	
657	-	624	-	-	624	
3	-	-	-	-	-	
$ 733	$ 75	$ 624	$ 3	$ -	$ 702	
(19)	6	(5)	3	-	4	
$ 714	$ 81	$ 619	$ 6	$ -	$ 706	
(624)	(26)	(485)	(10)	-	(521)	
(5)	(7)	-	-	-	(7)	
(79)	(6)	(138)	-	-	(144)	
(3)	(3)	-	(6)	-	(9)	
-						
(3)	(39)	4	10	-	(25)	
$ -	$ -	$ -	$ -	$ -	$ -	

See indepedent auditor's report.

Required Supplementary Stewardship Information (RSSI)

Research & Development (unaudited)

The Department of Energy is the single largest Federal government supporter of basic research in the physical sciences in the United States, providing more than 40 percent of total Federal funding. It oversees, and is the principal Federal funding agency of, the Nation's research programs in high energy physics, nuclear physics and fusion energy sciences. Our diverse research portfolio supports tens of thousands of principal investigators, post-doctoral students and graduate students tackling some of the most challenging scientific questions of our era.

In accordance with Statement of Federal Financial Accounting Standard (SFFAS) Number (No.)8 - *Supplementary Stewardship Reporting Chapter 7 - Research and Development,* the Department reports the following expenses for research and development programs that are intended to increase or maintain national economic productive capacity or yield other future benefits. Investments in research and development refer to those expenses incurred to support the search for new or refined knowledge and ideas and for the application or use of such knowledge and ideas for the development of new or improved products or processes with the expectation of maintaining or increasing national economic productive capacity or yielding other future benefits.

Supplementary Stewardship Reporting on Research and Development Costs for Fiscal Years ending September 30 (in millions)

	FY 2005 Direct Cost	FY 2005 Depreciation & Other Managerial Cost	FY 2005 Total Cost	FY 2004 Direct Cost	FY 2004 Depreciation & Other Managerial Cost	FY 2004 Total Cost
BASIC						
Nuclear Nonproliferation	$3.2	$0.3	$3.5	$13.2	$1.0	$14.2
Energy Security						
Energy Efficiency	19.9	5.1	25.0	30.3	4.6	34.9
Fossil Energy	6.0	1.7	7.7	7.1	0.8	7.9
Power Marketing Administration**	-	-	-	3.4	-	3.4
World-Class Scientific Research	2,808.7	735.5	3,544.2	2,581.3	583.4	3,164.7
Environmental Management	-	-	-	-	-	-
TOTAL BASIC	**$2,837.6**	**$742.8**	**$3,580.4**	**$2,635.3**	**$589.8**	**$3,225.1**

* FY 2001 information provided via crosswalk from previous report format utilizing responsibility segments.
** Full R&D investments for the Power Marketing Administrations are included under direct costs of the Energy Security Goal.

Direct Cost	FY 2003 Depreciation & Other Managerial Cost	Total Cost	Direct Cost	FY 2002 Depreciation & Other Managerial Cost	Total Cost	Direct Cost	FY 2001* Depreciation & Other Managerial Cost	Total Cost
$10.1	$1.5	$11.6	$8.4	$1.3	$9.7	$15.5	$1.7	$17.2
24.0	3.5	27.5	30.2	5.4	35.6	26.2	8.0	34.2
10.0	1.2	11.2	5.9	1.5	7.4	7.0	2.0	9.0
3.3	-	3.3	3.2	-	3.2	3.0	-	3.0
2,448.0	594.0	3,042.0	2,598.0	506.0	3,104.0	2,204.8	392.0	2,596.8
-	-	-	-	-	-	33.8	6.1	39.9
$2,495.4	**$600.2**	**$3,095.6**	**$2,645.7**	**$514.2**	**$3,159.9**	**$2,290.3**	**$409.8**	**$2,700.1**

Supplementary Stewardship Reporting on Research and Development Costs for Fiscal Years ending September 30 (in millions)

	Direct Cost	FY 2005 Depreciation & Other Managerial Cost	Total Cost	Direct Cost	FY 2004 Depreciation & Other Managerial Cost	Total Cost
APPLIED						
Nuclear Weapons Stewardship	$1,898.6	$192.9	$2,091.5	$1,888.0	$405.0	$2,293.0
Nuclear Nonproliferation	73.2	5.5	78.7	60.4	4.4	64.8
Energy Security						
Energy Efficiency	251.4	34.7	286.1	202.4	20.1	222.5
Fossil Energy	157.4	50.3	207.7	176.5	19.5	196.0
Nuclear Energy	52.5	35.8	88.3	74.3	6.5	80.8
Electric Transmission and Distribution	55.6	4.1	59.7	18.7	2.1	20.8
Power Marketing Administration**	9.7	-	9.7	11.8	-	11.8
World-Class Scientific Research	-	-	-	3.1	0.5	3.6
Environmental Management	15.6	1.2	16.8	28.1	4.1	32.2
Nuclear Waste	144.0	1.9	145.9	65.3	1.8	67.1
Other Defense Activities	-	-	-	12.0	5.4	17.4
TOTAL APPLIED	**$2,658.0**	**$326.4**	**$2,984.4**	**$2,540.6**	**$469.4**	**$3,010.0**
DEVELOPMENT						
Nuclear Weapons Stewardship	$467.2	$106.8	$574.0	$543.4	$121.0	$664.4
Nuclear Nonproliferation	53.6	2.8	56.4	49.4	3.1	52.5
Naval Reactors	724.7	40.3	765.0	667.1	17.7	684.8
Energy Security						
Energy Efficiency	335.0	37.2	372.2	422.1	41.8	463.9
Fossil Energy	172.2	52.9	225.1	192.9	20.8	213.7
Nuclear Energy	1.2	0.8	2.0	20.6	1.6	22.2
Electric Transmission and Distribution	13.5	3.2	16.7	38.0	3.2	41.2
Power Marketing Administration**	2.1	0.0	2.1	8.8	-	8.8
Environmental Management	36.4	3.6	40.0	65.5	9.6	75.1
Other Defense Activities	13.2	0.4	13.6	26.3	12.4	38.7
TOTAL DEVELOPMENT	**$1,819.1**	**$248.0**	**$2,067.1**	**$2,034.1**	**$231.2**	**$2,265.3**
TOTAL RESEARCH AND DEVELOPMENT	**$7,314.9**	**$1,317.0**	**$8,631.9**	**$7,210.0**	**$1,290.4**	**$8,500.4**

* FY 2001 information provided via crosswalk from previous report format utilizing responsibility segments.

**Full R&D investments for the Power Marketing Administrations are included under direct costs of the Energy Security Goal.

Direct Cost	FY 2003 Depreciation & Other Managerial Cost	Total Cost	Direct Cost	FY 2002 Depreciation & Other Managerial Cost	Total Cost	Direct Cost	FY 2001* Depreciation & Other Managerial Cost	Total Cost
$1,660.5	$454.5	$2,115.0	$1,700.0	$379.6	$2,079.6	$1,416.2	$222.5	$1,638.7
95.2	13.8	109.0	72.2	11.0	83.2	$75.9	7.4	83.3
169.7	21.9	191.6	180.4	11.8	192.2	231.7	24.3	256.0
186.7	21.7	208.4	131.6	10.3	141.9	133.0	35.3	168.3
12.3	1.2	13.5	20.9	5.0	25.9	26.8	2.8	29.6
-	-	-	-	-	-	-	-	-
11.4	-	11.4	11.1	-	11.1	10.8	-	10.8
2.9	0.5	3.4	37.9	4.3	42.2	81.0	1.1	82.1
23.4	4.4	27.8	89.9	20.8	110.7	77.7	15.5	93.2
75.8	1.0	76.8	62.5	2.6	65.1	60.4	3.1	63.5
-	-	-	-	-	-	-	-	-
$2,237.9	**$519.0**	**$2,756.9**	**$2,306.5**	**$445.4**	**$2,751.9**	**$2,113.5**	**$312.0**	**$2,425.5**
$734.3	$221.5	$955.8	$726.6	$175.7	$902.3	$643.3	$201.7	$845.0
66.1	9.9	76.0	83.8	13.3	97.1	79.1	7.4	86.5
621.8	16.3	638.1	653.0	16.6	669.6	604.5	40.9	645.4
352.4	42.8	395.2	403.5	30.3	433.8	461.0	51.7	512.7
202.1	23.0	225.1	167.6	17.4	185.0	157.6	36.9	194.5
16.0	2.4	18.4	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
8.7	-	8.7	8.7	-	8.7	8.4	-	8.4
54.7	10.3	65.0	134.8	31.2	166.0	116.6	23.2	139.8
32.0	15.3	47.3	4.3	0.5	4.8	30.3	12.1	42.4
$2,088.1	**$341.5**	**$2,429.6**	**$2,182.3**	**$285.0**	**$2,467.3**	**$2,100.8**	**$373.9**	**$2,474.7**
$6,821.4	**$1,460.7**	**$8,282.1**	**$7,134.5**	**$1,244.6**	**$8,379.1**	**$6,504.6**	**$1,095.7**	**$7,600.3**

Research and Development Activities and Significant Accomplishments by General Goal

Research and development (R&D) performance measures within some non-R&D programs are not explicitly identified because they are only minor support activities within those programs.

General Goal 1: Nuclear Weapons Stewardship – *Applied & Development*

Nuclear Weapons Stewardship activities: (1) provide the scientific understanding and engineering development capabilities necessary to support near-term and long-term requirements of the nuclear stockpile; (2) provide scientific understanding of the nuclear package of the weapons systems in order to sustain our ability to certify the nuclear weapons stockpile, support stockpile refurbishment and life extension and to provide capabilities and components necessary to support maintenance and refurbishment in the absence of nuclear testing; and (3) ensure the weapons complex and its facilities and infrastructure are in place to manufacture and certify the 21st century nuclear weapons stockpile.

The applied research and development program of the science campaign helps to support the nuclear weapons stewardship goal by ensuring that our nuclear weapons will continue to serve their essential deterrence role. One key goal of the National Nuclear Security Administration is to develop improved capabilities to assess the safety, reliability and performance of the nuclear package portion of weapons without further underground testing. The Dual-Axis Radiographic Hydrotest Facility (DAHRT), located at Los Alamos National Laboratory, is designed to take a rapid sequence of x-ray images of a simulated nuclear weapon implosion. For FY 2005, the Department committed to achieving 25 percent cumulative progress towards conducting the first 2-axis hydrodynamics test at DAHRT. A comprehensive technical review of the DARHT was conducted in June 2005 that concluded the project had satisfactorily solved the existing technical issues. The tests are on track to be completed during CY 2008.

General Goal 2: Nuclear Nonproliferation – *Basic, Applied & Development*

Activities conducted provide the science and technology required for treaty monitoring and material control, as well as early detection and characterization of the proliferation of weapons of mass destruction and special nuclear materials and improving the technologies leading to major improvements in responding to chemical and biological attacks.

Under the Department's goal to have all worldwide fissile nuclear materials under controls acceptable to the United States by 2025, the nonproliferation verification research and development program will develop new technologies to improve our ability to detect and monitor nuclear explosions. Advanced technologies and operational systems (e.g., satellite payloads and seismic station calibration data sets) will be developed to improve the accuracy and sensitivity of nuclear weapons test monitoring. For FY 2005, the Department committed to deliver eight such technologies to U.S. national security users. Seven technologies were delivered. Due to an industry-wide recall of a class of space-qualified electronic hardware, delivery of a satellite payload scheduled for FY 2005 is delayed until FY 2006. Delivery of seismic data sets was met as scheduled.

General Goal 3: Naval Reactors - *Development*

Activities include development, demonstration, improvement, and safe operation of nuclear propulsion plants and reactor cores for application to submarines and surface ships.

The Transformational Technology Core (TTC) reactor plant design is designed to meet increasing demands on the submarine fleet, delivering a significant energy increase to future VIRGINIA-class ships with minimum impact to the overall ship design. For FY 2005, the Department committed to achieve 23 percent of the TTC core conceptual design and to initiate final design and development work. The target was met, and the program is on track for completion in FY 2015.

General Goal 4: Energy Security – *Basic, Applied & Development*

The Department will improve energy security by developing technologies that foster a diverse supply of reliable, affordable and environmentally sound energy by providing for reliable delivery of energy, guarding against energy emergencies, and exploring advanced technologies that make a fundamental improvement in our mix of energy options. Discussed below are contributions from the DOE offices that contribute to the Energy Security general goal.

Energy Efficiency and Renewable Energy – Activities relate to (1) solar technologies; (2) geothermal technologies; (3) wind and hydropower technologies; (4) hydrogen and fuel cell technologies for transportation, stationary, and portable application; (5) energy conservation for the building sector, including residential building, commercial building, and retrofit technologies; (6) distributed energy technologies; (7) biomass technologies; (8) energy efficiency and renewable energy efforts in the federal sector; (9) energy conservation and energy supply efforts in the industry sector; (10) energy conservation for the transportation sector, including automotive alternative fuels and electric vehicles; and, (11) energy conservation and renewable energy for intergovernmental activities including the State Energy Program and Weatherization Program.

The vehicle technologies program develops technologies that enable cars and trucks to become highly efficient through

improved power technologies and cleaner domestic fuels, and to be cost and performance competitive. Manufacturers and consumers will use these technologies to help the Nation reduce both energy use and greenhouse gas emissions, dramatically reducing dependence on oil. For FY 2005, the Department committed to reduce high power (25kW), light vehicle lithium ion battery cost to $900 per battery system. This target was met, contributing to the overall 2010 cost goal of $500 per 25kW battery system, while meeting Hybrid Electric Vehicles performance requirements.

Fossil Energy – Activities relate to (1) improving acceptable technology for advancing power conversion systems for generating electricity and hydrogen from coal; and (2) support of advanced technologies for the recovery of oil and natural gas, technologies and development in drilling and offshore oil production, and characterization research.

The Department is committed to developing advanced power systems capable of achieving up to 45-50 percent efficiency at a capital cost of $1000 per kilowatt or less for a coal-based plant. To support this goal, the gasification technologies program is working towards the commercialization of economical and efficient sulfur removal and/or multi-contaminant clean-up. For FY 2005, the Department committed to begin construction of slip stream test units, test planning, and testing of advanced gas cleanup concepts using real coal-derived synthesis gas. The target was met.

Nuclear Energy – Activities address the development of new nuclear generation technologies that foster the diversity of the domestic energy supply through public-private partnerships that are aimed in the near term (2014) at the deployment of advanced, proliferation-resistant light water reactor and fuel cycle technologies and in the longer term (2025) at the development and deployment of next-generation advanced reactors and fuel cycles.

The Advanced Gas Reactor program supports the development of nuclear fuel suitable for use in next-generation nuclear power plants. In FY 2005, the Department committed to issue the final design documents for the fuel capsule, test train, fission product monitoring system, and control system for the fuel irradiation shakedown test, designated as the AGR-1 experiment, to be carried out in the Advanced Test Reactor. The target was met, and the designs that describe the test equipment will be constructed and tested in FY 2006.

Power Marketing Administrations – Research activities primarily supporting the Fish and Wildlife programs at Bonneville Power Administration.

Electricity Delivery and Energy Reliability – Research and development activities address high temperature superconductivity, transmission reliability, electric distribution transformation, and innovative energy storage. These activities contribute to the modernization and expansion of the Nation's electricity delivery system to ensure a more reliable and robust electricity supply.

For FY 2005, the Department committed to achieving a wide area measurement system in the Nation's Eastern Interconnect that would enable real time monitoring of conditions on the Nation's electric grid. The target was met, with the Interconnect consisting of six fully functioning data archiving and analysis locations installed at six different utilities.

General Goal 5: World-Class Scientific Research Capacity – *Basic & Applied*

Research in the areas of (1) advanced scientific computing relevant to the complex problems of the Department and providing world class supercomputer and networking facilities for scientists; (2) basic energy sciences including nuclear sciences, materials sciences, chemical sciences, engineering geosciences, energy biosciences, advanced energy projects and advanced mathematical sciences; (3) biological and environmental research needed to identify, understand, and anticipate the long term health and environmental consequences of energy production, development, and use; (4) fusion energy sciences including broad-based, fundamental research efforts aimed at producing knowledge on fusion; (5) high energy physics activities directed at understanding the nature of matter and energy; (6) nuclear physics activities directed at understanding the fundamental forces and particles of nature as manifested in nuclear matter; and, (7) small business innovative research/technology transfer support for energy related technologies that will significantly benefit US businesses, a technology transfer initiative.

In an effort to provide world-class scientific research, the Department's Biological and Environmental Research program provides the discoveries necessary to clean and protect our environment, offer new energy alternatives, and fundamentally alter the future of medical care and human health. To support this latter goal, the program is pursuing technological advances to restore sight for blind patients. For FY 2005, the Department committed to complete fabrication of a 60 microelectrode array for use as an artificial retina, and to implant the prototype device into a blind patient. The fabrication the artificial retina was completed; however, FDA approval to implant the prototype device into blind patients is still pending. Approval is expected in the second quarter of FY 2006.

General Goal 6: Environmental Management – *Basic, Applied & Development*

Technology development activities (1) to support site closure through technical support and quick responses for highly focused science and technology projects; and (2) develop and

provide the scientific and technical rationale to support development of alternative approaches and step improvements for high risk/high cost baseline estimates.

General Goal 7: Nuclear Waste - *Applied*

Activities conducted on the long-term storage of high level nuclear waste at a permanent underground repository.

Other Defense Activities: Applied & Development – *Applied & Development*

Activities related to systems development that may be used or shared with other federal agencies and private industry as well as activities related to the protection of the Nation's energy infrastructure.

Required Supplementary Information (RSI)

(unaudited)

This section of the report provides required supplementary information for the Department on deferred maintenance, budgetary resources by major budget account and intra-governmental balances.

Deferred Maintenance

Deferred maintenance information is a requirement under SFFAS No.6, *Accounting for Property, Plant and Equipment* and SFFAS No.14, *Amendments to Deferred Maintenance* which requires deferred maintenance to be disclosed as of the end of each fiscal year. Deferred maintenance is defined in SFFAS No.6 as "maintenance that was not performed when it should have been or was scheduled to be and which, therefore, is put off or delayed for a future period." Estimates were developed for:

Buildings and Other Structures and Facilities	$3,599 million
Capital Equipment	$79 million
TOTAL	$3,678 million

Buildings and Other Structures and Facilities

The condition assessment survey (periodic inspections) method was used in measuring a deferred maintenance estimate for buildings and other structures and facilities except for some structures and facilities where a physical barrier was present (e.g., underground pipe systems). In those cases, where a deficiency is identified during normal operations and correction of the deficiency is past due, a deferred maintenance estimate would be applicable. Also, where appropriate, results from previous condition assessments have been adjusted to estimate current plant conditions. Deferred maintenance for excess property was reported only in situations where maintenance is needed for worker and public health and safety concerns.

The Department determines deferred maintenance and acceptable operating condition through various methods, including periodic condition assessments, physical inspections, review of work orders, manufacturer and engineering specification.

As of September 30, 2005, an amount of $3,599 million of deferred maintenance was estimated to be required to return the facilities to acceptable operating condition. The percentage of active buildings above acceptable operating condition is estimated at 69 percent.

Capital Equipment

Pursuant to the cost/benefit considerations provided in SFFAS No. 6, the Department has determined that the requirements for deferred maintenance reporting on personal property (capital equipment) is not applicable to property items with an acquisition cost of less than $100,000, except in situations where maintenance is needed to address worker and public health and safety concerns.

Various methods were used for measuring deferred maintenance and determining acceptable operating condition for the Department's capital equipment including periodic condition assessments, physical inspections, review of work orders, manufacturer and engineering specification, and other methods, as appropriate.

An amount of $79 million of deferred maintenance was estimated to be needed as of September 30, 2005, to return capital equipment assets to acceptable operating condition.

Budgetary Resources by Major Account For the Year Ended September 30, 2005 (in millions)

	Fossil Energy R&D 89X0213	Energy Conservation 89X0215	Science 89X0222	Energy Supply 89-0224	Weapons Activities 89-0240
BUDGETARY RESOURCES					
Budgetary Authority	$ 569	$ 870	$ 3,664	$ 950	$ 6,675
Unobligated Balance, Net - Beginning of Period	545	16	13	69	845
Spending Authority from Offsetting Collections		1		761	2,492
Recoveries of Prior Year Obligations	9	1	1	8	
Authority Permanently Not Available	(8)	(11)	(29)	(13)	(50)
Total Budgetary Resources	$ 1,115	$ 877	$ 3,649	$ 1,775	$ 9,962
STATUS OF BUDGETARY RESOURCES					
Obligations Incurred	$ 514	$ 861	$ 3,621	$ 1,746	$ 8,869
Unobligated Balances Available	594	16	28	29	874
Unobligated Balances Not Available	7				219
Total Status of Budgetary Resources	$ 1,115	$ 877	$ 3,649	$ 1,775	$ 9,962
RELATIONSHIP OF OBLIGATIONS TO OUTLAYS					
Obligated Balance, Net - Beginning of Period	$ 478	$ 617	$ 2,059	$ 604	$ 1,574
Obligated Balance, Net - End of Period	482	592	2,194	696	1,509
Outlays	500	884	3,486	885	6,442
Less: Offsetting Receipts					
Net Outlays	$ 500	$ 884	$ 3,486	$ 885	$ 6,442

	Other Defense Activities 89-0243	Defense Environmental Services 89X0249	Defense Site Acceleration Completion 89-0251	Defense Nuclear Nonproliferation 89-0309	Naval Reactors 89X0314
BUDGETARY RESOURCES					
Budgetary Authority	$ 693	$ 938	$ 5,920	$ 1,519	$ 808
Unobligated Balance, Net - Beginning of Period	19	90	25	506	2
Spending Authority from Offsetting Collections				13	
Recoveries of Prior Year Obligations	3	1	2	3	
Authority Permanently Not Available	(6)	(8)	(49)	(15)	(6)
Total Budgetary Resources	$ 709	$ 1,021	$ 5,898	$ 2,026	$ 804
STATUS OF BUDGETARY RESOURCES					
Obligations Incurred	$ 653	$ 997	$ 5,877	$ 1,450	$ 801
Unobligated Balances Available	55	24	21	571	3
Unobligated Balances Not Available	1			5	
Total Status of Budgetary Resources	$ 709	$ 1,021	$ 5,898	$ 2,026	$ 804
RELATIONSHIP OF OBLIGATIONS TO OUTLAYS					
Obligated Balance, Net - Beginning of Period	$ 448	$ 288	$ 2,522	$ 969	$ 246
Obligated Balance, Net - End of Period	343	330	2,118	1,088	296
Outlays	756	954	6,278	1,316	750
Less: Offsetting Receipts					
Net Outlays	$ 756	$ 954	$ 6,278	$ 1,316	$ 750

	Bonneville Power Administration 89X4045	Western Area Power Administration 89X5068	United States Enrichment Corporation Fund 95X4054	All Other Appropriations	Combined Statement of Budgetary Resources
BUDGETARY RESOURCES					
Budgetary Authority	$ 1,260	$ 173		$ 2,523	$ 26,562
Unobligated Balance, Net Beginning of Period		85	1,350	473	4,038
Spending Authority from Offsetting Collections	3,302	327	33	668	7,597
Recoveries of Prior Year Obligations				6	34
Authority Temporarily Not Available		(1)		(265)	(266)
Authority Permanently Not Available	(1,639)			(14)	(1,848)
Total Budgetary Resources	$ 2,923	$ 584	$ 1,383	$ 3,391	$ 36,117
STATUS OF BUDGETARY RESOURCES					
Obligations Incurred	$ 2,923	$ 490		$ 3,074	$ 31,876
Unobligated Balances Available		94		303	2,612
Unobligated Balances Not Available			1,383	14	1,629
Total Status of Budgetary Resources	$ 2,923	$ 584	$ 1,383	$ 3,391	$ 36,117
RELATIONSHIP OF OBLIGATIONS TO OUTLAYS					
Obligated Balance, Net - Beginning of Period	$ 1,804	$ 220		$ 1,074	$ 12,903
Obligated Balance, Net - End of Period	1,580	133		1,184	12,545
Outlays	(155)	249	(33)	2,291	24,603
Less: Offsetting Receipts				(3,236)	(3,236)
Net Outlays	$ (155)	$ 249	$ (33)	$ (945)	$ 21,367

AUDITOR'S REPORT

Memorandum from the Inspector General

Department of Energy
Washington, DC 20585
November 14, 2005

MEMORANDUM FOR THE SECRETARY

FROM: Gregory H. Friedman
Inspector General

SUBJECT: INFORMATION: Report on the Department of Energy's Fiscal Year 2005 Consolidated Financial Statements

In response to requirements established by the Government Management Reform Act of 1994, the Office of Inspector General engaged the independent public accounting firm of KPMG LLP to perform the annual audit of the Department of Energy's consolidated financial statements. Audit work performed by the contract auditor identified significant deficiencies in financial management and reporting controls related to the Department's Fiscal Year 2005 consolidated financial statements. The Department's ability to prepare accurate consolidated financial statements and supporting documentation was affected by issues such as accounting for and monitoring obligations and funds control, accounting for accruals, reconciling payment information with the U.S. Treasury, reconciling integrated contractor trial balances, resolving various posting errors, and reconciling accounting system modules to the general ledger.

These reporting and control deficiencies were caused, in large part, by problems associated with the reorganization of the Department's accounting operations and circumstances surrounding the implementation of a new Department accounting system, the Standard Accounting and Reporting System. As with any large Federal agency, the deployment of a new accounting system is a challenging and daunting task. In spite of a significant effort by personnel in the Office of the Chief Financial Officer, a number of implementation problems had not been resolved by year-end and accounting officials lacked reporting and analysis tools necessary to prevent, detect, or correct problems or errors in a timely manner. Specifically, the Department was unable to correct the previously described weaknesses and could not provide a number of supporting documents required for audit. Because of these issues, it was impracticable for our independent public accounting firm to extend audit procedures sufficiently to determine the extent to which the Department's consolidated financial statements may have been affected by these conditions. As a consequence, a disclaimer of opinion was issued on the Department's Fiscal Year 2005 consolidated financial statements.

In addition to the financial management and reporting control issues noted above, a reportable condition related to unclassified information system security continued to exist. As identified in previous financial statement audit reports, the Department had weaknesses involving the review and approval of user access privileges, password security and

monitoring of networks for questionable activity. The identified weaknesses and vulnerabilities increased the risk that malicious destruction or alteration of data or unauthorized processing could occur.

With regard to the findings related to financial management and reporting controls, and those concerning information security system weaknesses, the Department generally concurred and initiated or agreed to initiate specific corrective actions.

The preparation and audit of financial statements involve many parties. The Department is responsible for preparing its consolidated financial statements, and the Office of Inspector General is responsible for the audit. As previously stated, we contracted with the auditing firm of KPMG LLP to conduct the audit. KPMG is responsible for reporting on the Department's consolidated financial statements and reporting on applicable internal controls, and compliance with laws, regulations, contracts and grant agreements. The Office of Inspector General monitored the contractor's progress and reviewed the audit report and related documentation to ensure compliance with generally accepted Government auditing standards. Due to the problems disclosed previously, the Office of Inspector General substantially augmented the audit effort with Federal personnel. The Office of Inspector General, however, did not prepare an independent report on the Department's consolidated financial statements.

I would like to thank all elements of the Department for their courtesy and cooperation during the review.

Attachment

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

Audit Report: DOE/OAS-FS-06-01

Independent Auditors' Report

KPMG LLP
2001 M Street, NW
Washington, DC 20036

INDEPENDENT AUDITORS' REPORT

The Inspector General, United States Department of Energy and
The Secretary, United States Department of Energy:

We were engaged to audit the accompanying consolidated balance sheet of the United States Department of Energy (Department) as of September 30, 2005, and the related consolidated statements of net cost, changes in net position, financing, and custodial activities, and the related combined statement of budgetary resources (hereinafter referred to as "fiscal year 2005 consolidated financial statements"), for the year then ended. In connection with our fiscal year 2005 engagement, we were also engaged to consider the Department's internal control over financial reporting and to test the Department's compliance with certain provisions of applicable laws, regulations, contracts, and grant agreements that could have a direct and material effect on its consolidated financial statements.

We have audited the accompanying consolidated balance sheet of the United States Department of Energy as of September 30, 2004, and the related consolidated statements of net cost, changes in net position, financing, and custodial activities, and the related combined statement of budgetary resources (hereinafter referred to as "fiscal year 2004 consolidated financial statements"), for the year then ended. As discussed in this report, the Department's power administrations, whose Department-related financial data as of and for the year ended September 30, 2004 are included in the accompanying fiscal year 2004 consolidated financial statements, were audited by other auditors whose reports have been furnished to us and were considered in forming our overall opinion on the Department's fiscal year 2004 consolidated financial statements.

Summary

As stated in our report on the consolidated financial statements, the scope of our work was not sufficient to enable us to express an opinion on the Department's consolidated financial statements as of and for the year ended September 30, 2005. Regarding the fiscal year 2004 consolidated financial statements, we concluded, based upon our audit and the reports of other auditors, that the Department's consolidated financial statements as of and for the year ended September 30, 2004, are presented fairly, in all material respects, in conformity with accounting principles generally accepted in the United States of America.

Our report emphasizes that the cost estimates supporting the Department's environmental remediation liabilities are based upon assumptions regarding future actions and decisions, many of which are beyond the Department's control.

Our fiscal year 2005 consideration of internal control over financial reporting resulted in the identification of the following two matters as reportable conditions: (1) weaknesses in financial

management and reporting controls related to the fiscal year 2005 implementation of the Department's new accounting system, combined with the restructuring and consolidation of its finance and accounting services organization and adoption of a new chart of accounts; and (2) weaknesses in the Department's unclassified network and information systems security. We consider the first matter to be a material weakness.

The results of our fiscal year 2005 tests of compliance with certain provisions of laws, regulations, contracts, and grant agreements, exclusive of those referred to in the *Federal Financial Management Improvement Act of* 1996 (FFMIA), disclosed no instances of noncompliance or other matters that are required to be reported herein under *Government Auditing Standards*, issued by the Comptroller General of the United States, and Office of Management and Budget (OMB) Bulletin No. 01-02, *Audit Requirements for Federal Financial Statements*.

The results of our tests of FFMIA disclosed that the Department's financial management systems did not substantially comply with the federal financial management systems and accounting standards requirements, as a result of the Department's inability to prepare timely and accurate financial statements and supporting data for audit. This matter is related to the material weakness in internal controls, described above.

Had we been able to perform all of the procedures necessary to express an opinion on the Department's fiscal year 2005 consolidated financial statements, other internal control matters and other instances of noncompliance may have been identified and reported.

The following sections discuss:

- The reasons why we are unable to express an opinion on the Department's fiscal year 2005 consolidated financial statements;
- Our report on the Department's fiscal year 2004 consolidated financial statements;
- Our consideration of the Department's internal control over financial reporting;
- Our tests of the Department's compliance with certain provisions of applicable laws, regulations, contracts, and grant agreements;
- Management's responsibilities; and
- Our responsibilities.

Report on the Consolidated Financial Statements

We were engaged to audit the accompanying consolidated balance sheet of the United States Department of Energy as of September 30, 2005, and the related consolidated statements of net cost, changes in net position, financing, and custodial activities, and the related combined statement of budgetary resources, for the year then ended.

The Department implemented a new financial accounting system in April 2005, shortly after the October 2004 reorganization and consolidation of its finance and accounting services organization. The Department also adopted a new chart of accounts in conjunction with the new accounting system. As a result of these events, the Department encountered a significant number

Independent Auditors' Report, Continued

of conversion, posting, reconciliation, and reporting issues that hindered its ability to assure the accuracy and completeness of consolidated financial statement balances and to provide data necessary for audit testing. We noted specific issues in accounting for obligations, monitoring budget execution and control, reconciling payment information with the U.S. Treasury, accounting for accruals, reconciling integrated contractor trial balances with the Department's records, reconciling accounting system modules to the general ledger, resolving various posting errors, and identifying and reporting intragovernmental transactions. We noted that many reports needed for management, internal control, and audit purposes were not available following system deployment. Finally, during fiscal year 2005, the Department restructured and consolidated its accounting operations, realigning its accounting functions across the Department and causing a negative impact on the financial accounting staffing levels and skills mix throughout the Department The Department did not complete corrective actions to address these conditions. Therefore, it was unable to provide accurate financial data and could not always provide supporting documents required for audit. It was impracticable to extend our procedures sufficiently to determine the extent to which the Department's consolidated financial statements as of and for the year ended September 30, 2005, may have been affected by these conditions.

Because of the matters discussed in the preceding paragraph, the scope of our work was not sufficient to enable us to express, and we do not express, an opinion on the accompanying consolidated financial statements of the United States Department of Energy as of and for the year ended September 30, 2005.

We have audited the accompanying consolidated balance sheet of the United States Department of Energy as of September 30, 2004, and the related consolidated statements of net cost, changes in net position, financing, and custodial activities, and the related combined statement of budgetary resources, for the year then ended.

We did not audit the fiscal year 2004 financial statements of Bonneville Power Administration, Western Area Power Administration, Southwestern Power Administration, or Southeastern Power Administration, whose Department-related financial data as of and for the year ended September 30, 2004 are included in the accompanying fiscal year 2004 consolidated financial statements. When combined and compared to the Department's consolidated financial statements, the financial data for these entities represent 17 percent of total assets; 54 percent of total earned revenues; and 13 percent of total program costs as of and for the year ended September 30, 2004. Those financial statements were audited by other auditors whose reports have been furnished to us, and our opinion on the fiscal year 2004 consolidated financial statements, insofar as it relates to the amounts included for Bonneville Power Administration, Western Area Power Administration, Southwestern Power Administration, and Southeastern Power Administration, is based solely upon the reports of the other auditors.

In our opinion, based upon our fiscal year 2004 audit and the reports of other auditors, the fiscal year 2004 consolidated financial statements referred to above present fairly, in all material respects, the financial position of the United States Department of Energy as of September 30, 2004, and its net costs, changes in net position, budgetary resources, reconciliation of net costs to

Independent Auditors' Report, Continued

budgetary obligations, and custodial activities for the year then ended, in conformity with accounting principles generally accepted in the United States of America.

As discussed in Notes 14 and 16 to the consolidated financial statements, the cost estimates supporting the Department's environmental remediation liabilities of $190 billion (unaudited) and $182 billion as of September 30, 2005 and 2004, are based upon assumptions regarding future actions and decisions, many of which are beyond the Department's control.

The information in the Management's Discussion and Analysis (MD&A), Required Supplementary Stewardship Information (RSSI), and Required Supplementary Information (RSI) sections of the Department's *Fiscal Year 2005 Performance and Accountability Report* is not a required part of the consolidated financial statements, but is supplementary information required by accounting principles generally accepted in the United States of America or OMB Circular A-136, *Financial Reporting Requirements*, Part A, *Form and Content of the Performance and Accountability Report*. We have applied certain limited procedures which consisted principally of inquiries of management regarding the methods of measurement and presentation of this information. Certain information presented in the MD&A, RSSI, and RSI is based on data from the fiscal year 2005 consolidated financial statements on which we express no opinion. The Department did not include a schedule of intragovernmental amounts by trading partner in the RSI section of its *Fiscal Year 2005 Performance and Accountability Report*, as required by OMB Circular A-136. We were not required to audit the MD&A, RSSI, and RSI information and, accordingly, we express no opinion on that information.

We were engaged to conduct our fiscal year 2005 audit, and we conducted our fiscal year 2004 audit, for the purpose of forming an opinion on the consolidated financial statements taken as a whole. The information in the Consolidating Schedules section of the Department's *Fiscal Year 2005 Performance and Accountability Report* is presented for purposes of additional analysis of the consolidated financial statements, rather than to present the financial position, net costs, changes in net position, budgetary resources, reconciliation of net costs to budgetary obligations, and custodial activities of the Department's components individually. The fiscal year 2005 information in the Consolidating Schedules section is based on the fiscal year 2005 consolidated financial statements on which we express no opinion, and accordingly, we express no opinion on such information. The fiscal year 2004 information in the Consolidating Schedules section has been subjected to the auditing procedures applied in the audit of the fiscal year 2004 consolidated financial statements and, in our opinion, based upon our audit and the reports of other auditors, is fairly stated in all material respects in relation to the fiscal year 2004 consolidated financial statements taken as a whole.

The information in the Performance Results section, the Other Accompanying Information section, the Appendices, and the information presented on pages i and ii of the Department's *Fiscal Year 2005 Performance and Accountability Report* is presented for purposes of additional analysis and is not a required part of the consolidated financial statements. This information has not been subjected to the auditing procedures, except for the testing of controls over selected performance measures, described in the Responsibilities section of this report, and, accordingly, we express no opinion on it.

Independent Auditors' Report, Continued

Internal Control over Financial Reporting

Our consideration of internal control over financial reporting would not necessarily disclose all matters in the internal control over financial reporting that might be reportable conditions. Under standards issued by the American Institute of Certified Public Accountants, reportable conditions are matters coming to our attention relating to significant deficiencies in the design or operation of the internal control over financial reporting that, in our judgment, could adversely affect the Department's ability to record, process, summarize, and report financial data consistent with the assertions by management in the consolidated financial statements.

Material weaknesses are reportable conditions in which the design or operation of one or more of the internal control components does not reduce to a relatively low level the risk that misstatements, in amounts that would be material in relation to the financial statements being audited, may occur and not be detected within a timely period by employees in the normal course of performing their assigned functions.

In our fiscal year 2005 engagement, we noted certain matters involving internal control over financial reporting and its operation that we consider to be reportable conditions. The following reportable condition, described in more detail in Exhibit I, is considered to be a material weakness.

> ***Financial Management and Reporting Controls*** – Our work identified significant deficiencies in the Department's financial management and reporting controls that precluded the Department from preparing its fiscal year 2005 consolidated financial statements and supporting documentation in a complete and timely manner. Due primarily to issues resulting from the implementation of its new accounting system and attrition associated with the reorganization and consolidation of its finance and accounting services organization, the Department was unable to develop adequate reporting and other internal controls essential to the deployment of the new system. In addition to impairing the Department's financial reporting, the lack of these critical controls detracted from the ability of the accounting staff to complete routine accounting reconciliations and impacted the ability of the Department's officials to manage their programs and monitor the status of obligations. Continued action to address these weaknesses is needed to correct the Department's financial management and reporting problems and to improve the ability of program officials to monitor and control obligations and expenditures.

The following reportable condition, which is not considered to be a material weakness, is described in more detail in Exhibit II.

> ***Unclassified Network and Information Systems Security*** – We noted network vulnerabilities and weaknesses in access and other security controls in the Department's unclassified computer information systems. The identified weaknesses and vulnerabilities increased the risk that malicious destruction or alteration of data or unauthorized processing could occur. The Department should fully implement policies and procedures to improve its network and information systems security.

Independent Auditors' Report, Continued

The current status of the prior year reportable condition is presented in Exhibit III.

We will report on other matters involving internal control over financial management systems and its operation, and internal control over financial reporting and its operation, in separate letters.

As discussed in our report on the consolidated financial statements, the scope of our work was not sufficient to enable us to express an opinion on the Department's consolidated financial statements as of and for the year ended September 30, 2005. Had we been able to perform all of the procedures necessary to express an opinion, other matters involving internal control over financial reporting may have been identified and reported.

Compliance and Other Matters

The results of our tests of compliance with certain provisions of laws, regulations, contracts, and grant agreements described in the Responsibilities section of this report, exclusive of those referred to in the FFMIA, disclosed no instances of noncompliance or other matters that are required to be reported herein under *Government Auditing Standards* and OMB Bulletin No. 01-02.

The results of our tests of FFMIA disclosed that the Department's financial management systems did not substantially comply with the federal financial management systems and accounting standards requirements, discussed in the Responsibilities section of this report, which prevented the Department from preparing timely and accurate financial statements and supporting data for audit. This matter is related to the material weakness in internal controls, described in the Internal Control over Financial Reporting section of this report, and our related recommendations and are presented in Exhibit I. The results of our tests of FFMIA disclosed no instances in which the Department's financial management systems did not substantially comply with requirements of applying the United States Government Standard General Ledger at the transaction level.

As discussed in our report on the consolidated financial statements, the scope of our work was not sufficient to enable us to express an opinion on the Department's consolidated financial statements as of and for the year ended September 30, 2005. Had we been able to perform all of the procedures necessary to express an opinion, other matters involving compliance with laws, regulations, contracts, and grant agreements may have been identified and reported.

Responsibilities

Management's Responsibilities. The *Government Management Reform Act of 1994* (GMRA), *Accountability of Tax Dollars Act*, and *Government Corporation Control Act* require agencies to report annually to Congress on their financial status and any other information needed to fairly present their financial position and results of operations. To meet these reporting requirements, the Department prepares and submits consolidated financial statements in accordance with Part A of OMB Circular A-136.

Independent Auditors' Report, Continued

Management is responsible for the consolidated financial statements, including:

- Preparing the consolidated financial statements in conformity with accounting principles generally accepted in the United States of America;
- Preparing MD&A (including the performance measures), RSSI, and RSI;
- Establishing and maintaining internal controls over financial reporting; and
- Complying with laws, regulations, contracts, and grant agreements, including FFMIA.

In fulfilling this responsibility, management is required to make estimates and judgments to assess the expected benefits and related costs of internal control policies. Because of inherent limitations in internal control, misstatements due to error or fraud may nevertheless occur and not be detected.

Auditors' Responsibilities. As discussed in our report on the consolidated financial statements, the scope of our work was not sufficient to enable us to express, and we do not express, an opinion on the accompanying consolidated financial statements of the Department as of and for the year ended September 30, 2005.

Regarding the fiscal year 2004 consolidated financial statements presented herein, our responsibility is to express an opinion on the fiscal year 2004 consolidated financial statements of the Department based upon our audit and the reports of other auditors. We conducted our fiscal year 2004 audit in accordance with auditing standards generally accepted in the United States of America, the standards applicable to financial audits contained in *Government Auditing Standards,* and OMB Bulletin No. 01-02. Those standards and OMB Bulletin No. 01-02 require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement. An audit includes consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate under the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Department's internal control over financial reporting. Accordingly, we express no such opinion.

An audit also includes:

- Examining, on a test basis, evidence supporting the amounts and disclosures in the consolidated financial statements;
- Assessing the accounting principles used and significant estimates made by management; and
- Evaluating the overall consolidated financial statement presentation.

We believe that our fiscal year 2004 audit and the reports of other auditors provide a reasonable basis for our opinion on the Department's fiscal year 2004 consolidated financial statements.

In connection with our fiscal year 2005 engagement, we considered the Department's internal control over financial reporting by obtaining an understanding of the Department's internal

control, determining whether internal controls had been placed in operation, assessing control risk, and performing tests of controls to determine our procedures. We limited our internal control testing to those controls necessary to achieve the objectives described in *Government Auditing Standards* and OMB Bulletin No. 01-02. We did not test all internal controls relevant to operating objectives as broadly defined by the *Federal Managers' Financial Integrity Act of 1982*. Further, had we been able to perform all of the procedures necessary to express an opinion on the Department's fiscal year 2005 consolidated financial statements, other matters involving internal control over financial reporting may have been identified and reported. The objective of our engagement was not to provide assurance on internal control over financial reporting. Consequently, we do not provide an opinion thereon.

As required by OMB Bulletin No. 01-02, in fiscal year 2005, we considered the Department's internal control over the RSSI by obtaining an understanding of the Department's internal control, determining whether these internal controls had been placed in operation, assessing control risk, and performing tests of controls. Had we been able to perform all of the procedures necessary to express an opinion on the Department's fiscal year 2005 consolidated financial statements, other matters involving internal control over the RSSI may have been identified and reported. Our procedures were not designed to provide assurance on internal control over the RSSI and, accordingly, we do not provide an opinion thereon.

As further required by OMB Bulletin No. 01-02, with respect to internal control related to performance measures determined by management to be key and reported in MD&A, in fiscal year 2005, we obtained an understanding of the design of significant internal controls relating to the existence and completeness assertions. Had we been able to perform all of the procedures necessary to express an opinion on the Department's fiscal year 2005 consolidated financial statements, other matters involving internal control over performance measures may have been identified and reported. Our procedures were not designed to provide assurance on internal control over performance measures and, accordingly, we do not provide an opinion thereon.

In connection with our fiscal year 2005 engagement, we performed tests of the Department's compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of consolidated financial statement amounts, and certain provisions of other laws and regulations specified in OMB Bulletin No. 01-02, including certain provisions referred to in FFMIA. We limited our tests of compliance to the provisions described in the preceding sentence, and we did not test compliance with all laws, regulations, contracts, and grant agreements applicable to the Department. Had we been able to perform all of the procedures necessary to express an opinion on the Department's fiscal year 2005 consolidated financial statements, other matters involving compliance with laws, regulations, contracts, and grant agreements may have been identified and reported. Providing an opinion on compliance with laws, regulations, contracts, and grant agreements was not an objective of our engagement and, accordingly, we do not express such an opinion.

Under OMB Bulletin No. 01-02 and FFMIA, we are required to report whether the Department's financial management systems substantially comply with (1) Federal financial management

systems requirements, (2) applicable Federal accounting standards, and (3) the United States Government Standard General Ledger at the transaction level. To meet this requirement, we performed tests of compliance with FFMIA Section 803(a) requirements.

Distribution

This report is intended for the information and use of the Department's management, the Department's Office of Inspector General, OMB, the Government Accountability Office, and the United States Congress, and is not intended to be used and should not be used by anyone other than these specified parties.

KPMG LLP

November 9, 2005

Financial Management and Reporting Controls

Our work identified significant deficiencies in the Department's financial management and reporting controls, collectively constituting a material weakness in internal control, that precluded the Department from preparing its fiscal year 2005 consolidated financial statements and supporting documentation in a complete and timely manner. Despite substantial effort by the Chief Financial Officer's staff, the Department was unable to correct these deficiencies in a timely manner and, as a consequence, we issued a disclaimer of opinion on the Department's fiscal year 2005 consolidated financial statements.

The Department has encountered a number of challenges resulting from the fiscal year 2005 implementation of its new accounting system, the Standard Accounting and Reporting System (STARS), consolidation and realignment of its financial and accounting services organization, and the adoption of a new chart of accounts. Specifically, in October 2004, the Department centralized certain operations previously performed by multiple field offices and accounting service centers and restructured its overall financial and accounting services organization. These changes, coupled with higher than normal attrition, had a negative impact on the financial accounting staffing levels and skills mix throughout the Department. Shortly thereafter, in April 2005, the Department implemented STARS and a new chart of accounts.

While the Department conducted extensive STARS pre-deployment testing, it encountered implementation issues related to converting data from its legacy accounting system, developing new accounting processes to effectively use the new system, and identifying related reporting requirements. The Department's new financial and accounting services organization was unable to fully address many of these implementation issues prior to September 30, 2005. Reports needed for management, control, and audit purposes were not available following STARS deployment, and a number of system reconciliations remained incomplete. Furthermore, new STARS-specific accounting processes had not been fully documented, and operational control procedures were not yet being performed routinely. Problems resulting from the lack of these critical controls significantly delayed preparation of the fiscal year 2005 consolidated financial statements and supporting data, and impacted the ability of management officials to monitor and control their budgets. The Department recognized these issues and classified financial control and reporting as a reportable problem in its *Federal Managers' Financial Integrity Act* assurance statement for fiscal year 2005, and as a non-compliance matter in its *Federal Financial Management Improvement Act* reporting.

Specifically, we noted the following issue areas:

Obligations, budget execution and funds control – We found unreconciled differences between the general ledger, subsidiary modules, and various other information systems used to manage obligation and cost data. Some field organizations entered and controlled obligations using separate information systems (feeder systems) that interface with the STARS purchase order module, while others recorded obligation data directly in the purchase order module. Some sites summarized transactions for posting in a manner that prevented the obligation data in STARS

from being readily traced or reconciled to source documents. In addition, because the sites had not fully developed control procedures unique to their feeder systems and data entry methods, they could not ensure the accuracy of obligation data through timely reconciliation to the STARS general ledger totals. STARS data is needed for official funds control purposes. Without routine reconciliations, there is significant risk that the obligations reported in the Department's consolidated financial statements may be misstated and that field office and program managers may be using incomplete or inaccurate data for financial management decisions. Field offices also reported that they cannot identify and resolve some differences between STARS and contract file data. Because of the unexplained differences, several field offices expressed concerns regarding the accuracy of their uncosted and unpaid obligations balances, which adversely affected their ability to monitor and control their budgets. These and other program officials also expressed concerns regarding incorrect conversion of legacy system data, potential funds distribution errors, and inappropriate accrual of interest penalties. Finally, a number of program officials said that they needed additional training in using available reporting tools to monitor obligations and expenditures.

Payments – The Department has had difficulty reconciling its disbursement and collection activity with the U.S. Treasury's records since April 2005. STARS permits processing of payment transactions in excess of recorded costs. While this feature provides flexibility by permitting the posting of transactions prior to final cost allocation decisions, it also imposes the burden of ensuring that differences are promptly investigated and resolved. We also noted that when steps in the voided payment process were performed out of sequence, the resulting payments may not be recorded in the general ledger. These payment reconciliation issues have significantly complicated and delayed efforts to verify the accuracy of the Fund Balance with Treasury account. Because of these difficulties, the Department's submissions to Treasury and OMB as of June 30, 2005, were based on estimated disbursement data. In September, corrected SF-224s, *Monthly Statement of Transactions*, were submitted to Treasury for the period April through June 2005. The Department was unable to complete its September 2005 Fund Balance with Treasury reconciliation until November 4, which was after submission of the draft fiscal year 2005 consolidated financial statements for audit purposes.

Accruals – In fiscal year 2005, the Department implemented a revised process for field offices to submit accruals to Headquarters for costs incurred when invoices had not yet been received. We tested this process as of June 30, 2005, and determined that the recorded accrual data was unreliable. We identified accruals submitted by field offices that were either not entered or were duplicated in STARS, or were recorded inaccurately. We also noted accruals recorded prior to April 1, 2005, that had not been reversed, and a significant number of accruals that should have been recorded but were not identified by the field offices. These issues were not fully resolved by year-end. Additional issues arose during the year-end accrual process that required the CFO to request revised accruals from field offices in mid-October, which was too late to subject such accruals to audit testing. Finally, the year-end grant accrual validation process was not performed effectively.

Integrated contractor trial balances – A number of unreconciled differences existed between STARS and the separate financial systems maintained by the Department's integrated

contractors. A task force formed to identify and resolve these differences found that they resulted from errors in data conversion and incomplete reconciliation and cross-walk instructions. While the Department believes that substantially all of the remaining differences resulted from misclassifications of data between contractors and field office reporting units - misclassifications that do not affect the accuracy of the consolidated financial statements - it had not completed most of the reconciliations for individual contractors, and the effect of the remaining corrections on the consolidated financial statements was not known. The Department plans to implement routine contractor trial balance reconciliations after these issues are resolved.

Reconciliation of data – Data conversion and operational problems created out-of-balance conditions between the STARS purchase order, accounts payable, accounts receivable, and fixed assets modules and the general ledger. The Department identified a number of reconciling differences and adjustments, but had not completed reconciliations of all modules to the general ledger as of September 30, 2005. Once these are completed, the Department intends to implement procedures and controls to ensure that the module reconciliations are performed routinely. In addition, the Department reported that several hundred general ledger posting errors identified by STARS edit routines were unresolved as of the date of our report. Although the Department implemented system changes to prevent many of these errors from recurring, it had not completed review and correction of unresolved errors. The Department requires field offices to resolve many of these errors, but staffing levels were not adequate to complete the work prior to the date the Department prepared its consolidated financial statements. In addition, new procedures and user reports are needed in some areas to record valid accounting transactions, such as transferring internal use software from construction in process to completed property accounts, entries that were rejected by STARS during processing. Prompt resolution of data posting errors is an essential component of financial data integrity, and its absence could make the safeguards against misappropriation or unauthorized use of funds less effective.

Identifying and reporting intragovernmental transactions – The Department developed new procedures to use with STARS to identify and code intragovernmental transactions by trading partner. OMB Circular A-136 requires Federal agencies to separately report intragovernmental balances in their financial statements and to report intragovernmental balances by trading partner as required supplementary information. Various coding and reporting issues were identified by the Department and through our testing, including issues with the program logic for extracting trading partner information and inaccuracies in the vendor and customer tables. Because of these issues, the Department did not prepare the required schedule of intragovernmental balances by trading partner for inclusion in its *Fiscal Year 2005 Performance and Accountability Report*.

Recommendations:

We recommend that the CFO ensure that the Department:

1. Continues to improve accounting operations and controls related to STARS deployment, with an emphasis on:

    - Reconciling the general ledger to subsidiary ledgers and feeder systems;
    - Reconciling contractor trial balances to the general ledger;
    - Improving its controls for recording and accepting valid payment and obligations transactions;
    - Accounting for and recording accruals;
    - Classifying and reporting intragovernmental transactions;
    - Developing revised or additional reports for program officials to use to monitor and control budgets;
    - Performing data reconciliations routinely; and
    - Resolving error conditions;

2. Fully documents the business processes and controls required for the accurate and timely operation of the STARS system;

3. Implements routine controls; and

4. Provides additional training to its accounting staff and program officials.

Management's Response:

Management has prepared an official response presented as a separate attachment to this report. In summary, management agreed with our findings and its comments were responsive to our recommendations.

Unclassified Network and Information Systems Security

The Department maintains a series of interconnected unclassified networks and information systems. Federal and Departmental directives require the establishment and maintenance of security over unclassified information systems, including financial management systems. Past audits identified significant weaknesses in selected systems and devices attached to the computer networks at some Department sites. The Department has implemented corrective actions to improve network security at the sites we, and the Department's Office of Independent Oversight and Performance Assurance (OA), reviewed in prior years. However, we and the OA continued to identify network security weaknesses at sites reviewed in fiscal year 2005, and the frequency and severity of those weaknesses remained consistent with our prior year findings. The Department recognizes these weaknesses and has classified cyber security as a significant issue in its *Federal Managers' Financial Integrity Act* assurance statement for fiscal year 2005. Significant improvements are still needed in the areas of password management, configuration management, and restriction of network services.

Our fiscal year 2005 audit also disclosed weaknesses in access at several sites, similar to our prior year findings. Specifically, we noted weaknesses in the review and approval of user access privileges, password security, and monitoring of networks for questionable activity. Further, the Department's Office of Inspector General also reported deficiencies in the Department's network and information system risk management, configuration management, and access controls in its evaluation report on *The Department's Unclassified Cyber Security Program*, dated September 2005. Matters discussed in that report included an examination of non-financial systems.

The Department has acknowledged the need to improve its information systems security and other information technology controls. In fiscal year 2005, the Department's Chief Information Officer (CIO) continued the implementation of initiatives from the prior years to identify the root causes of the control weaknesses and to develop new policies and procedures to strengthen controls and reduce network vulnerabilities. The Department also recently initiated its Cyber Security Improvement Initiative. This is a collaborative effort between the Office of the CIO (OCIO), OA, and the various program offices to conduct joint site visits to identify and resolve cyber security problems, provide site assistance, and follow-up on corrective actions. Once fully implemented, these initiatives and new policies and procedures should strengthen the Department's overall cyber security program.

The identified weaknesses in network vulnerabilities and access controls increase the risk that malicious destruction or alteration of data or unauthorized processing could occur. Because of our concerns, we performed supplemental procedures and identified compensating controls that mitigate the potential effect of these security weaknesses on the integrity of the Department's financial systems.

Recommendation:

While progress has been achieved, continued focus is needed to resolve the vulnerability and access weaknesses described above. Therefore, we recommend that the program officials, in conjunction with the CIO, fully implement policies and procedures to ensure that the Federal

information security standards are met and that networks and information systems are adequately protected against unauthorized access.

Detailed recommendations to address the issues discussed above have been separately reported to the program offices and the OCIO.

Management's Response:

Management has prepared an official response presented as a separate attachment to this report. In summary, management agreed with our findings and its comments were responsive to our recommendation.

Independent Auditors' Report
Exhibit III – Status of the Prior Year Audit Finding

Reportable Condition from Fiscal Year 2004 (with parenthetical disclosure of year first reported)	**Status at September 30, 2005**
Unclassified Information Systems Security (1999)	Still reported in Exhibit II as a reportable condition.

Management's Response to Auditors' Recommendations

Department of Energy
Washington, DC 20585

November 10, 2005

KPMG LLP
2001 M Street, NW
Washington, DC 20036

I am providing this letter in connection with your audit of the United States Department of Energy (Department) consolidated balance sheets as of September 30, 2005 and 2004, and the related consolidated statements of net costs, changes in net position, financing, and custodial activities, and the related combined statements of budgetary resources, for the years then ended. We have reviewed your Independent Auditors' Report and provide the following responses to your recommendations.

Reportable Problem: Financial Management and Reporting Controls

Auditors' Recommendations:

We recommend that the CFO ensure that the Department:

1. Continues to improve accounting operations and controls related to STARS deployment, with an emphasis on:

   - Reconciling the general ledger to subsidiary ledgers and feeder systems;
   - Reconciling contractor trial balances to the general ledger;
   - Improving its controls for recording and accepting valid payment and obligations transactions;
   - Accounting for and recording accruals;
   - Classifying and reporting intragovernmental transactions;
   - Developing revised or additional reports for program officials to use to monitor and control budgets;
   - Performing data reconciliations routinely; and
   - Resolving error conditions.

2. Fully documents the business processes and controls required for the accurate and timely operation of the STARS system;

3. Implements routine controls; and

4. Provides additional training to its accounting staff and program officials.

Management Response:

As Chief Financial Officer (CFO), I concur with your findings and recommendations. The reportable condition on Financial Management and Reporting Controls is considered to be a material weakness for financial statement audit purposes and the Department considers this a significant issue as a reportable condition under the Federal Managers' Financial Integrity Act.

I am in full agreement with the above-listed recommendations. While progress has been made in some of the issue areas; e.g., module to general ledger reconciliations, integrated contractor reconciliations, and correction of legacy system data conversion errors, considerable work remains to be done to fully resolve all outstanding substantive issue areas, including those specifically identified in your recommendations. The Department's leadership is fully committed to resolving these issue areas on an accelerated basis. On October 27th I established a cross-discipline, dedicated CFO Issues Resolution Tiger Team and designated a senior-level executive, in whom I have utmost confidence, to lead this effort. Team membership is comprised of top-quality employees from Headquarters and field offices that bring the expertise, perspective, and commitment prerequisite to achieving success on this highly time-sensitive project. The root causes for the outstanding issues and implementation of appropriate solution sets at the earliest possible point in time will ensure we move toward processing our FY 2006 transactions and related reporting.

This Team is specifically charged with developing an executable, integrated Plan of Action and Milestones (POA&M) for both short-term and long-range solutions. We will be implementing an issue tracking process, analyzing issues for root cause, formulating corrective action teams, and utilizing an integrated approach to problem resolution. The overall goal is to develop a clear path forward that will lead to short-term fixes to immediate operational problems as well as some fundamental changes in the way we do business in the long run.

You have my assurance that I will personally monitor actual progress against the POA&M and that the areas of emphasis on continuing to improve accounting operations and controls related to STARS deployment will be top priorities, as well as fully documenting business processes and controls, implementing routine controls, and providing additional training to the Department's accounting staff and program officials.

The Secretary and the Deputy Secretary share my commitment to resolving all of the issues and problems that contributed to this Reportable Problem on Financial Management and Reporting Controls.

Reportable Condition: Unclassified Network and Information Systems Security

Auditors' Recommendation:

While progress has been achieved, continued focus is needed to resolve the vulnerability and access weaknesses described above. Therefore, we recommend that the program officials, in conjunction with the CIO, fully implement policies and procedures to ensure that the Federal information security standards are met and that networks and information systems are adequately protected against unauthorized access.

Management Response:

The Chief Information Officer (CIO) concurs with the auditors' recommendation that full implementation of policies and procedures by the CIO and program officials is necessary to ensure that the Federal information security standards are met and that networks and information systems are adequately protected against unauthorized access. Toward that end, four basic program areas have been established.

1. Departmental Program Direction and Guidance

This area addresses the essential management processes that must be established or modified to provide for a strategic, integrated approach to DOE cyber security. The outcome is expected to be a common management and policy framework, based on national consensus standards, which must be adhered to by all organizational elements before considering any added controls that might be necessary to effectively protect information and information systems for which they have responsibility. It includes recommendations related to corporate-level planning, policy setting, and program governance.

2. Program Support Mechanisms

This area addresses programmatic elements that must be established or enhanced, primarily by the Office of the CIO, to enable and better assist line managers in implementing effective cyber security programs. It includes improvements in threat assessments, communications, identification and procurement of technical tools, incident response, training, and field assistance.

3. Line Management Implementation

This area addresses actions required of line managers to ensure cyber security program effectiveness and includes improved senior management involvement, staffing and budgeting, roles and responsibilities, and the flow down of cyber security requirements.

4. Performance Measurement and Accountability

This area addresses the management processes necessary to ensure that the DOE cyber security program is achieving the desired results and, if not, to strengthen or redirect efforts to improve performance, including performance metrics, progress reporting, and progress reporting of cyber security performance.

The leadership of the Department is committed to improving the cyber security posture of its information systems, including its financial systems. This management response leverages the corporate strength of the entire Department toward the end state of improved security.

Sincerely,

Susan J. Grant
Chief Financial Officer

OTHER ACCOMPANYING INFORMATION

Inspector General's Management & Performance Challenges

For the past several years, the Office of Inspector General has identified what it considers to be the most significant management and performance challenges facing the Department of Energy. This annual effort, now codified as part of the Reports Consolidation Act of 2000, reflects new work performed by the Office of Inspector General, assesses the agency's progress in addressing previously identified challenges, and considers emerging issues facing the Department.

In 2005, we identified seven management challenges: National Security, Environmental Cleanup, Stockpile Stewardship, Contract Administration, Project Management, Information Technology, and Financial Control and Reporting. These challenges represent both the risks inherent to the Department's complex operations and those related to the Department's management processes for achieving its missions. For the most part, these challenges are not amenable to near-term resolution and can only be addressed by a concerted, persistent effort, resulting in progress over a long period of time. In addition to the seven management challenges, we have included energy supply, worker and community safety and human capital on our "watch list". These operational and programmatic functions do not warrant classification as a management challenge, but need to be closely monitored by Department management. The Inspector General looks forward to working with the Department's senior staff in a continuing effort to improve Department programs and operation, particularly as they relate to the management challenge areas.

National Security

The Department plays a vital role in the Nation's security by ensuring nuclear weapon safety, promoting international nuclear safety, advancing nuclear non-proliferation, and providing safe and effective nuclear power plants for the United States Navy. During FY 2005, the Department increased the level of security through a number of measures, including additional barriers and limiting personnel access to key areas. Although the Department has continued to make progress in addressing security issues, our audits and inspections have underscored the need for continued vigilance. For example, a review of security access controls at the Y-12 National Security Complex found that foreign construction workers using false identification documents gained access to the site on multiple occasions.

Environmental Cleanup

The Department is responsible for cleaning contaminated sites and disposing of radioactive waste from nuclear weapons production, nuclear powered navy vessels, and commercial energy production. This long-term effort requires the Department management's continued attention and significant resources to resolve the issues addressed in our audit work. In an audit of deactivation and decommissioning activities at the Savannah River Site, we reported that the site did not always provide a reduction in environmental risk. In another review, we found that the Department will not meet its commitments for removing transuranic waste from the Los Alamos National Laboratory. In FY 2005, the Department continued to make strides in addressing the inherent risks associated with this challenge. Most notably, the Rocky Flats Site completed its last transuranic waste shipment in April 2005 and completed most of the work required to close the site by the end of FY 2005.

Stockpile Stewardship

The Department's Stockpile Stewardship Program is responsible for maintaining the safety, reliability, and performance of the nation's nuclear weapons stockpile in the absence of underground nuclear testing. The Department faces project management issues related to cost, schedule, and scope of the various projects supporting its stockpile stewardship mission. Our FY 2005 work identified that the National Nuclear Security Administration (NNSA) risks not achieving the first production unit for the B61 refurbishment within the original schedule and scope specifications. To its credit,

NNSA management has initiated corrective actions intended to improve project management processes. These initiatives include training and certifying project managers and integrating project management criteria into various aspects of NNSA's program elements.

Contract Administration

The Department continues to face effective contract oversight as an ongoing challenge due to its significant reliance on contractors and grantees to accomplish its missions. Our FY 2005 reviews identified oversight weaknesses for areas such as funds management and claimed costs. For example, we found that certain financial management activities associated with the Idaho National Laboratory's technology transfer and commercialization program were not managed consistent with contract terms. The Department is developing a comprehensive strategy to address contract management issues raised by both the Office of Inspector General and the Government Accountability Office. This strategy includes increasing contract competition, using more effective performance objectives and measures, and instituting rigorous professional development requirements for contract management officials.

Project Management

To accomplish its missions, the Department undertakes numerous unique and complex multi-million dollar construction and operation projects. Our FY 2005 reviews identified necessary improvements to ensure that the Department's project management principles are effective and accomplishing their goals. In an audit of the Hanford Site's K Basins Spent Nuclear Fuel Project, we found that the sludge removal schedule has continued to slip and had experienced cost overruns since FY 2003. To address the project management challenges, the Department has taken specific action to help meet cost, schedule, and performance targets for major projects. For instance, DOE has been working to improve employee accountability for project performance through its SES performance appraisal system, and by the end of May 2006 a certified Federal project director must lead all departmental capital asset projects over $5 million.

Information Technology

Information Technology is vital in helping the Department fulfill its mission and provide efficient and effective services to the American people. As in past years, our reviews have highlighted internal control weaknesses that impact the improvement of information technology systems. In an audit of enterprise architecture, we found that Department contractors had not taken the necessary steps to ensure that program office architectures were complete, compatible with and supported the overall design. Also, our annual evaluation required by the Federal Information Security Management Act identified weaknesses in the Department's unclassified cyber security program. To its credit, the Department has taken steps to address the challenges associated with information technology. Beginning in 2004, all information technology projects over $5 million underwent a review requiring the Department's Chief Information Officer's certification to ensure the project's necessity and that it yielded expected results.

Financial Control and Reporting

The Office of Inspector General has identified financial control and reporting as a new management challenge. In April 2005, the Department implemented the Standard Accounting and Reporting System (STARS) – a new accounting and financial reporting system. Despite devoting substantial effort to STARS implementation, the Department has encountered significant problems impacting the annual financial statement audit and its financial management and reporting. Such problems include system posting errors, reconciling accounting data, and converting data from the previous accounting system to STARS. As of the end of FY 2005, many basic financial management reports, including those needed for audit, had not been developed or had not produced reliable or intended results. In addition, the Department had difficulty reconciling STARS data to the accounting data generated by many of its major contractors or in reconciling certain data to subsidiary ledgers. Although this is an ongoing issue, the Department has initiated efforts to resolve the problems associated with STARS. For example, software and operating procedures are being changed to address reporting and reconciliation issues.

Improper Payments Information Act Reporting Details (unaudited)

Improper Payment Outlook

As noted in the chart below, the Department's extremely low improper payment rate minimizes the Department's opportunities for future reductions and increases the likelihood of rate fluctuations as very small variations in erroneous payment dollars drives more significant changes when viewed as a rate.

Improper Payment (IP) Reduction Outlook
FY 2005 – FY 2008 ($ in millions)

Class of Payment/Program	FY 2005 Outlays/Payments	FY 2005 IP%	FY 2005 IP$	FY 2006 IP%	FY 2007 IP%	FY 2008 IP%
Payroll	$ 7,527	.04	3.0	<.25	<.25	<.25
Travel	$ 257	.16	0.5	<.25	<.25	<.25
Vendors	$ 15,913	.07	11.0	<.25	<.25	<.25
Other	$ 417	0.0	0.0	<.25	<.25	<.25

Note: Federal payroll not included due to outsourcing of this function. See footnote 1 on page one of this appendix.

Recovery Auditing

P.L. 107–107, "National Defense Authorization Act for FY 2002," requires agencies that enter into contracts with a total value in excess of $500 million in a fiscal year to carry out a cost effective program for identifying overpayments to contractors, and for recovering amounts overpaid. OMB memorandum M-03-07, "Programs to Identify and Recover Erroneous Payments," requires agencies to review their contractor payments for errors resulting in overpayments (recovery audit), take action to recover those overpayments, and report the results of these activities to OMB on an annual basis.

Recovery Auditing Statistics
FY 2005 ($ in millions)

Contractor Payments Reviewed	$ 11,387
Contractor Overpayments Identified	$ 10.6
Overpayments Recovered	$ 9.5
Overpayments Pending Recovery	$ 1.05
Overpayments Not Recoverable	$ .055
Total Cost of Recovery Audit Program	$ .379
Departmental Costs	$ .260
Recovery Auditing Contractor Costs	$ .119

Other Statutory Reporting

Management's Response to Audit Reports

Pursuant to the *Inspector General Act Amendments* of 1988 (Public Law 100-504), agency heads are to report to Congress on the status of final action taken on audit report recommendations. This report complements a report prepared by the Department's Office of Inspector General (IG) that provides information on audit reports issued during the period and on the status of management decisions made on previously issued IG audit reports.

Inspector General Audit Reports

The Department responds to audit reports by evaluating the recommendations they contain, formally responding to the IG, and implementing agreed upon corrective actions. In some instances, we are able to take corrective action immediately and in others, action plans with long-term milestones are developed and implemented. The audit resolution and follow-up process is an integral part of the Department's effort to deliver its priorities more effectively and at the least cost. Actions taken by management on audit recommendations increase both the efficiency and effectiveness of our operations and strengthen our standards of accountability.

During FY 2005, the Department took final action on 58 IG reports with the agreed upon actions including final action on eight IG operational, financial, and pre-award audit reports with funds put to better use. At the end of the period, 96 reports awaited final action.

Status of Final Action on IG Audit Reports for FY 2005

The following chart provides more detail on the audit reports with open actions and the dollar value of recommendations and funds "put to better use" that were agreed to by management.

Audit Reports	Number of Reports	Agreed-Upon Funds Put to Better Use (in Millions)
Pending final action at the beginning of the period	94	$ 1,099
With actions agreed upon during the period	58	$ .079
Total pending final action	152	$ 1,099
Achieving final action during the period	56	$ 417*
Requiring final action at the and of the period	96	$ 683

*** Reflects a single amount also included in the IG's semi-annual report.**

Inspector General's Contract Audit Reports

To begin this period, final action had not been taken on one IG contract audit report. At the end of the fiscal year, there is one contract audit report pending final action.

Contract Audit Reports Statistical Table FY 2005

Total Number of IG Contract Audit Reports (Contract and Financial Assistance) and the dollar value of disallowed costs:

	Number of Reports	Disallowed Costs*
Contract audit reports with management decisions on which final action had not been taken at the beginning of the period	1	N/A
Contract audit reports issued on which management decisions were made during the period	-	N/A
Total contract audit reports pending final action during the period	-	N/A
Contract audit reports on which final action was taken during the period		
Recoveries	-	$-
Reinstatements	-	$-
Totals	-	$-
Contract audit reports needing final action at the end of the period	1	0

*** The amount of costs questioned in the audit report with which the contracting officer concurs and has disallowed as a claim against the contract. Recoveries of disallowed costs are usually obtained by offset against current claims for payment and subsequently used for payment of other eligible costs under the contract.**

Government Accountability Office Audit Reports

The U.S. Government Accountability Office (GAO) audits are a major component of the Department's audit follow-up program. At the beginning of FY 2005 there were 36 GAO audit reports awaiting final action. During FY 2005, the Department received 29 additional final GAO audit reports, of which 12 required tracking of corrective actions and 17 did not because the reports did not include actions to be taken by the Department. The Department completed agreed-upon corrective actions on 14 audit reports during FY 2005, leaving 34 GAO reports awaiting final action at year end.

Appendices

GLOSSARY OF ACRONYMS

A

ABWR .....Advanced Boiling Water Reactor
ADAPT .....Advanced Design and Production Technology
ADP .....Advanced Data Processing
AEP .....American Electric Power
AFCI .....Advanced Fuel Cycle Initiative
AFV .....Alternative Fuel Vehicles
AGR .....Advanced Gas Reactor
ALRC .....Albany Research Center
Am .....Americium
AMWTP .....Advanced Mixed Waste Treatment Project
ANL .....Argonne National Laboratory
ANL-W .....Argonne National Laboratory –West
APEC .....Asian Pacific Economic Cooperation
APP .....Annual Performance Plan
AP600 .....Advanced Pressurized Water Reactor 600
ARES .....Advanced Reciprocating Engine System
ARM .....Atmospheric Radiation Measurement
ASC .....Advanced Simulation and Computing Campaign
ASCAC.....Advanced Scientific Computing Advisory Committee
ASCI.....Advanced Simulation and Computing Initiative
ASCR .....Advanced Scientific Computing Research
ASTM .....American Society for Testing Materials
ATLAS .....A Toroidal LHC Apparatus
Argonne Tandem Linac Accelerator System
ATR .....Advanced Test Reactor
AUI.....Allowable Unpaid Investments

B

BABAR.....B and B-bar Experiment
BDMS .....Blend-Down Monitoring Systems
BER .....Biological and Environmental Research
BES.....Basic Energy Sciences
BESAC .....Basic Energy Sciences Advisory Committee
BGRR.....Brookhaven Graphite Research Reactor
BLS.....Bureau of Labor and Statistics
BNL .....Brookhaven National Laboratory
BOP .....Balance of Plant
BPA .....Bonneville Power Administration
BTU .....British Thermal Unit
BWR .....Boiling Water Reactor

C

C2.....Command and Control
CALM .....Capability for Advanced Loading Missions
CANDU.....Canada Deuterium Uranium
CAP .....Corrective Action Plan
CAR .....Cooperative Automotive Research
CBC .....Consolidated Business Center
CBFO.....Carlsbad Field Office
CCPI .....Clean Coal Power Initiative
CD .....Critical Decision
CDF .....Collider Detector at Fermi National Accelerator Laboratory
CEAR.....Certificate of Excellence in Accountability Reporting
CEBAF.....Continuous Electron Beam Accelerator Facility
CERT .....Council of Energy Resource Tribes
CERTS .....Consortium for Electric Reliability Technology Solution
CF .....Carbon Fibers
CFD .....Computational Fluid Dynamics
CFF .....Container Firing Facility
CFO .....Chief Financial Officer
CHP.....Combined Heat and Power
CIO .....Chief Information Officer
Cm .....Curium
CMAC .....Contract Management Advisory Council
CMRR .....Chemistry and Metallurgy Research Facility Replacement
CMS.....Compact Muon Solenoid
Centers for Medicare and Medicaid Services
CO2 .....Carbon Dioxide
COC.....Coso Operating Company
COE .....Cost of Energy
COL .....Construction and Operating License
COMETS.....Crude Oil Movement and Event Tracking System
CP .....Charge-Parity
CPS .....Control Performance Standards
CQPR.....Consolidated Quarterly Performance Results
CRADA .....Cooperative Research and Development Agreement
CREM .....Controlled Removable Electronic Media
CSRS .....Civil Service Retirement System
CY .....Calendar Year

D

D&D .....Decontamination and Decommissioning
D&I .....Disassembly and Inspection
DARHT .....Dual-Axis Radiographic Hydrotest
DBT .....Design Basis Threat
DEMP .....Departmental Energy Management Program
DER .....Distributed Energy Resource
DG .....Distributed Generation

DNA.....Deoxyribonucleic Acid
DNS.....Defense Nuclear Security
DOD.....Department of Defense
DOE.....Department of Energy
DP.....Defense Programs
DRAAG.....Design Review and Acceptance Group
DSP.....Defense Support Program
DSRP.....Direct Sulfur Recovery Process
DSW.....Directed Stockpile Work
DWD.....Diagnostics-While-Drilling

E

E&P.....Exploration and Production
EA.....Enterprise Architecture
ECP.....Electrochemical Plant
EDU.....Engineering Development Units
EECP.....Early Entrance Co-Production Plant
EER.....Engineering Evaluation Release
EE/EERE.....Office of Energy Efficiency and Renewable Energy
EGS.....Enhanced Geothermal System
EIA.....Energy Information Administration
EIPP.....Eastern Interconnection Phasor Project
EIS.....Environmental Impact Statement
EM.....Office of Environmental Management/Environmental Management
EMCAL.....Electro-Magnetic Calorimeter
EMSL.....Environmental Molecular Science Laboratory
EPA.....Environmental Protection Agency
EPR.....European Pressurized Water Reactor
EPRI.....Electric Power Research Institute
ERB-II.....Experimental Breeder Reactor II
ERDF.....Environmental Restoration Disposal Facility
ERDS.....Emergency Response Database System
ERISA.....Employee Retirement Income Security Act
ES&H.....Environment, Safety and Health
ESnet.....Energy Sciences Network
ESPC.....Energy Savings Performance Contract
EWGPP.....Elimination of Weapons Grade Plutonium Production

F

FBI.....Federal Bureau of Investigation
FCE.....Fuel Cell Energy
FCI.....Facility Condition Index
FCRPS.....Federal Columbia River Power System
FE.....Office of Fossil Energy
FEMP.....Federal Energy Management Program
FERC.....Federal Energy Regulatory Commission
FERS.....Federal Employees Retirement System

FES.....Fusion Energy Sciences
FFMIA.....Federal Financial Management Improvement Act
FFTF.....Fast Flux Test Facility
FIRP.....Facilities and Infrastructure Recapitalization Program
FISMA.....Federal Information Security Management Act
FMFIA.....Federal Managers' Financial Integrity Act
FNAL.....Fermi National Accelerator Laboratory
FSED.....Full-Scale Engineering Development
FUSRAP.....Formerly Utilized Sites Remedial Action Program
FXR.....Flash X-Ray
FY.....Fiscal Year
FYNSP.....Future-Year Nuclear Security Program

G

GAO.....Government Accountability Office
g/bhp-hr.....Grams per Brake-Horsepower-Hour
GG.....General Goal
GHASTLI.....Gas Hydrate and Sediment Test Laboratory Instrument
GHz.....Gigahertz
GMRA.....Government Management Reform Act
GPRA.....Government Performance and Results Act
GPS.....Global Positioning System
GSF.....Gross Square Feet

H

H2.....Hydrogen
HEP.....High Energy Physics
HEU.....Highly Enriched Uranium
HEV.....Hybrid Electric Vehicle
Hg.....Mercury
HLHA.....Heavy Load Hour Availability
HLW.....High-Level Radioactive Waste
HMO.....Health Maintenance Organization
HP.....High Pressure
HRIBF.....Holifield Radioactive Ion Beam Facility
HT.....High Temperature
HTDS.....High Temperature Desulfurization System
HTHP.....High Temperature-High Pressure
HTS.....High Temperature Superconductivity
HVAC.....Heating, Ventilation, and Air Conditioning

I

IA.....Implementing Agreement
IAEA.....International Atomic Energy Agency
ICBM.....Intercontinental Ballistic Missiles
ICF.....Inertial Confinement Fusion

ICRF .....Ion Cyclotron Radio Frequency
IDW .....I-MANAGE Data Warehouse
IECC .....International Energy Conservation Code
IG .....Inspector General
IGCC .....Integrated Gasification Combined Cycle
I-MANAGE .....Integrated Management Navigation System
INEEL .....Idaho National Engineering and Environmental Laboratory
INL.....Idaho National Laboratory
IOP.....Intensive Operations Period
IOU .....Investor Owned Utilities
IPHE .....International Partnership for the Hydrogen Economy
IPIA .....Improper Payments Information Act
IPIS .....Integrated Pit Inspection Station
IPP .....Initiatives for Proliferation Prevention
ISO.....International Standards Organization
ISTC.....International Science and Technology Center
IT .....Information Technology
ITER.....International Thermonuclear Experimental Reactor
ITM .....Ion Transport Membrane

J

JAERI .....Japan Atomic Energy Research Institute
JASPER .....Joint Actinide Shock Physics Experimental Research
JET .....Joint European Torus
JGI .....Joint Genome Institute
JIP .....Joint Industry Projects

K

KCP .....Kansas City Plant
Kg.....Kilogram
KW.....Kilowatt
KWH .....Kilowatt Hour

L

LA .....License Application
LANL .....Los Alamos National Laboratory
LANSC.....Los Alamos Neutron Science Center
LCFG .....Laboratory for Comparative and Functional Genomics
LEP.....Life Extension Program
LEU .....Low-Enriched Uranium
LHC .....Large Hadron Collider
LIGA .....Lithographie Galvanaplastie Abformung (German)
Lithography, Plating, Molding (English)
LLNL .....Lawrence Livermore National Laboratory
LLW .....Low Level Waste
LM .....Legacy Management

LMAES .....Lockheed Martin Advanced Environmental Systems, Inc.
LMITCO .....Lockheed Martin Idaho Technologies Company
LPW .....Lumens per Watt
LSN .....Licensing Support Network
LWR .....Light Water Reactor
LWST .....Low Wind Speed Turbine

M

MAR .....Major Assembly Release
MARS .....Management and Reporting System
MCFC .....Molten Carbonate Fuel Cell
MCO .....Multi-Canister Overpack
MESA.....Microsystem and Engineering Science Application
MHD .....Magnetohydrodynamic
MIDCARB.....Midcontinent Interactive Digital Carbon Atlas and Relational Database
MIE .....Major Items of Equipment
MIT .....Massachusetts Institute of Technology
MLLW .....Mixed Low-Level Waste
MMS .....Minerals Management Service
MOX .....Mixed-Oxide Fuel
MPC&A.....Material Protection Control and Accountability
MPF .....Modern Pit Facility
MRI .....Magnetic Resonance Imaging
MSP .....Managed Staffing Plan
MT .....Metric Tons
MTHM .....Metric Tons of Heavy Metal
MV .....Megavolts
MVA.....Million Volt Amps
MW .....Megawatt
MWH.....Megawatt Hours

N

NA .....National Nuclear Security Administration
NAAQS .....National Ambient Air Quality Standards
NAEWG.....North American Energy Working Group
NASA .....National Aeronautics and Space Administration
NATCARB .....National Carbon Sequestration Database and Geographic Information System
NCSX.....National Compact Stellarator Experiment
NCTS .....NIF Cryogenic Target System
NE .....Office of Nuclear Energy, Science and Technology
NEP .....National Energy Policy
NERC.....North American Electric Reliability Council
NERI .....Nuclear Energy Research Initiative
NERSC.....National Energy Research Scientific Computing Center
NESS .....Nuclear Explosive Safety Study
NETL .....National Energy Technology Laboratory
NFRC.....National Fenestration Rating Council

NGA.....Next Generation Computer Architecture
NGNP .....Next Generation Nuclear Plant
NICE3 .....National Industrial Competitiveness through Energy, Environment, and Economics
NIF.....National Ignition Facility
NLC .....Next Linear Collider
NN .....Nuclear Nonproliferation
NNSA.....National Nuclear Security Administration
NOx .....Nitrous Oxide
NP .....Nuclear Physics
NPR .....Nuclear Posture Review
Naval Petroleum Reserve
NR .....Naval Reactors
NRC.....Nuclear Regulatory Commission
NSRC.....Nanoscale Science Research Center
NSTX.....National Spherical Torus Experiment
NTS .....Nevada Test Site
NWC .....Nuclear Weapons Council
NWF .....Nuclear Waste Fund
NWIR .....Nuclear Weapons Incident Response
NWPA .....Nuclear Waste Policy Act

O

OA .....Office of Independent Oversight and Performance Assurance
OCRWM .....Office of Civilian Radioactive Waste Management
ODP.....Ocean Drilling Program
OE .....Office of Electricity Delivery and Energy Reliability
OETD .....Office of Electric Transmission and Distribution
OIT .....Office of Industrial Technologies
O&M .....Operation and Maintenance
OMB .....Office of Management and Budget
OMBE .....Office of Management, Budget and Evaluation
ONT.....Office of National Transportation
OPM .....Office of Personnel Management
OPS .....Operations per Second
ORNL .....Oak Ridge National Laboratory
OSRP .....Off-Site Source Recovery Program

P

PAC .....Physics Advisory Committee
PAR .....Performance and Accountability Report
PART .....Program Assessment Rating Tool
PB.....Petabyte
PB-1 .....Inverse Picobarnes
PCD .....Production Control Document
PDCF.....Pit Disassembly and Conversion Facility
PED .....Project Engineering Design
PEP .....Positron Electron Project

PGF .....Production Genomics Facility
PIE .....Post-Irradiation Examination
PL.....Public Law
PM .....Particulate Matter
PMA.....President's Management Agenda
Power Marketing Administration
PNNL.....Pacific Northwest National Laboratory
PPO .....Preferred Provider Organization
PRB .....Post Retirement Benefit
Pu.....Plutonium
PV .....Photovoltaic
PWR.....Pressurized Water Reactor

Q

QCD .....Quantum Chromodynamics
QMU .....Quantitative Margins and Uncertainties

R

RAFR .....Recordable Accident Frequency Rate
RAP .....Radiological Assistance Program
RBMK .....Reactor Bolshoi Moshchnosti Kanalnyi
R&D.....Research and Development
RD&D .....Research, Development, and Demonstration
RDD.....Radiological Dispersal Devices
RECA.....Radiation Exposure Compensation Act
REM.....Roentgen Equivalent Man
RERTR.....Reduced Enrichment Research and Test Reactor
RF.....Radio Frequency
RHIC .....Relativistic Heavy Ion Collider
RIA.....Rare Isotope Accelerator
RIAR .....Scientific Research Institute of Atomic Reactors (Russian)
RNEP.....Robust Nuclear Earth Penetrator
RREF .....Risk Reduction Efficiency Factor
RRW .....Reliable Replacement Warhead
RSI .....Requirement Supplementary Information
RSSI .....Required Supplementary Stewardship Information
RTBF .....Readiness in Technical Base and Facilities
RTI.....Russian Transition Initiative
RTO .....Regional Transmission Organization
RW.....Office of Civilian Radioactive Waste Management

S

SABRS .....Space and Atmospheric Burst Reporting System
SAIDI.....System Average Interruption Duration Index
SBS.....Standard Budget System
SC.....Office of Science

SCDHEC .....South Carolina Department of Health and Environmental Control
SCE .....Sub-Critical Experiment
SciDAC .....Scientific Discovery through Advanced Computing
SEAB .....Secretary of Energy Advisory Board
SECA .....State Energy Conversion Alliance
SEER .....Seasonal Energy Efficiency Ration
SEP.....Subscale Engineering Prototype
SFAS.....Statement of Financial Accounting Standards
SFFAS.....Statement of Federal Financial Accounting Standards
SGT .....Safeguard Transporters
SLAC .....Stanford Linear Accelerator Center
SLBM.....Sea-Launched Ballistic Missile
SLD .....Second Line of Defense
SMV.....Special Monitoring Visits
SNF .....Spent Nuclear Fuel
SNL .....Sandia National Laboratory
SNO.....Sudbury Neutrino Observatory
SNS .....Spallation Neutron Source
SOFC .....Solid Oxide Fuel Cell
SPR .....Strategic Petroleum Reserve
SRNL .....Savannah River National Laboratory
SRR .....Seismic Research Review
SRS.....Savannah River Site
SSA.....Office of Security and Safety Performance Assurance
SSP .....Stockpile Stewardship Program
SSRL.....Stanford Synchrotron Radiation Laboratory
STA.....Secure Transportation Asset
STARS .....Standard Accounting and Reporting System
STS.....Stockpile to Target Sequence
SWSA 4 .....Solid Waste Storage Area 4

T

TB .....Terabyte
TEF .....Tritium Extraction Facility
TeraOPS.....Trillions of Operations per Second
TFTR .....Tokamak Fusion Test Reactor
TGA .....Thermogravimetric Analyzer
THF .....Tetrahydrofuran
TJNAF .....Thomas Jefferson National Accelerator Facility
TMO .....Transparency Monitoring Office
TPBARS.....Tritium-Producing Burnable Absorber Rods
TPC .....Total Project Cost
TPD .....Technical Progress Document
TRA .....Test Reactor Area
TRU .....Transuranic
TSTA .....Tritium Systems Test Assembly
TTC .....Transformational Technology Core
TVA .....Tennessee Valley Authority

U

UC .....University of California
UCLA.....University of California Los Angeles
UEIP .....Ural Electrochemical Integrated Plant
UI.....Unpaid (Federal) Investment
UMTRCA .....Uranium Mill Tailings Radiation Control Act
UP .....University Program
UREX.....Uranium Extraction Plus
USEC .....United States Enrichment Corporation
USG .....United States Government
USIC .....United States Industry Coalition

V

VNIIEF .....All-Russian Scientific Research Institute of Experimental Physics (Russian)
VVER.....Water-cooled, Water-moderated Energy Reactor (Russian)

W

WER.....Water Effects Ratio
WIPP .....Waste Isolation Pilot Plant
WIR .....Waste Incidental to Reprocessing
WMD.....Weapons of Mass Destruction

We welcome your comments on how we can improve the Department of Energy's Performance and Accountability Report.

Please provide comments and requests for additional copies to:

Office of Internal Review
CF-1.2 / Germantown Building
U.S. Department of Energy
1000 Independence Ave., SW
Washington, D.C. 20585-1290

lynn.harshman@hq.doe.gov

phone (301) 903-2551
fax (301) 903-2550

www.energy.gov