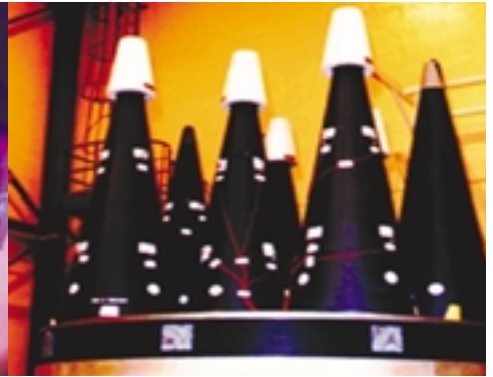


DOE/ME-0011

DEPARTMENT OF ENERGY



PERFORMANCE & ACCOUNTABILITY REPORT

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Message from the Secretary of Energy

I am pleased to present the Department of Energy's Fiscal Year 2001 Performance and Accountability Report.

Accountability to the American people is a basic tenet of the United States Government. This includes accountability for protecting our freedoms, way of life, and national well being. The Department of Energy makes important contributions to the country by protecting national nuclear security; balancing our Nation's energy resources; advancing the frontiers of science and technology; and improving the quality of the Nation's environment by cleaning up waste sites.

But as recent events in our country's history have so dramatically reminded us, we cannot take our freedoms and way of life for granted. As we at the Department move forward, we will focus our actions on our overarching mission of national security. These actions will encompass not only our defense functions related to national nuclear security, but also our energy and science functions that are critical to the Nation's energy security, and environmental cleanup functions that are necessary to ensure future national security missions are not impeded. Improving our country's national security is the greatest contribution we at the Department of Energy can make.

The performance results contained in this report, taken as a whole, summarize our success in achieving the performance goals we established for Fiscal Year 2001. However, we have identified as a Departmental Challenge the need to improve our performance management practices to ensure that, in the future, our goals are results driven and outcome oriented.

In addition to its programmatic results, the Department is also accountable to the American people for financial results. In this light, I am pleased to report that our Fiscal Year 2001 financial statements have received an unqualified "clean" opinion from the auditors working for the Department's Inspector General. This means that our financial statements present fairly the financial results of the Department and demonstrate our commitment to sound financial management.

Department of Energy employees take their work seriously and are fully committed to accomplishing mission priorities. As Secretary, I assure you that we are dedicated to serving the country and meeting the Nation's needs.



Spencer Abraham
Secretary of Energy



February 21, 2002

Foreword

The Reports Consolidation Act of 2000 authorizes federal agencies to consolidate various reports in order to provide financial, performance and related information in a more meaningful and useful format. In accordance with that Act, the information contained in this report is a consolidation of reporting requirements. We believe that consolidating this information provides the reader with a better overall picture of the Department of Energy.

The report comprises three primary sections: the Overview section, the Audited Financial Statements and Auditors' Report section, and the Detailed Performance Results section.

The Overview section provides information on the Department of Energy (DOE); its mission, organizational structure and resources. It provides summary information on the Department's fiscal year 2001 performance in those areas deemed to be the most significant. The Overview section also contains information on the Department's most serious management control weaknesses, which are referred to as Departmental Challenges throughout the report.

Detailed information on all performance results is contained in the Detailed Performance Results section. The Detailed Performance Results section contains three years of information on the Department's performance in relation to each of its planned goals and objectives.

The Audited Financial Statements and Auditors' Report section contains the Department's consolidated Fiscal Year 2000 and 2001 financial statements and the reports the auditors have issued on them.

Legislated Reporting Requirements

This report also meets the following legislated reporting requirements:

- ◆ Annual report on the Department's activities as required by the Department of Energy Organization Act of 1977;
 - ◆ Assessment of the Department's financial systems for adherence to government-wide Federal Financial Management Improvement Act of 1996 requirements;
 - ◆ Management actions taken in response to Inspector General audits as required by Amendments to the Inspector General Act of 1978;
 - ◆ Performance results achieved against all goals established for the year as required by the Government Performance and Results Act of 1993;
 - ◆ Status of the Department's management controls and the most serious problems identified as required by the Federal Managers' Financial Integrity Act of 1982; and,
 - ◆ Audited financial statements, including an overview of performance results, as required by the Government Management and Reform Act of 1994.
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Overview





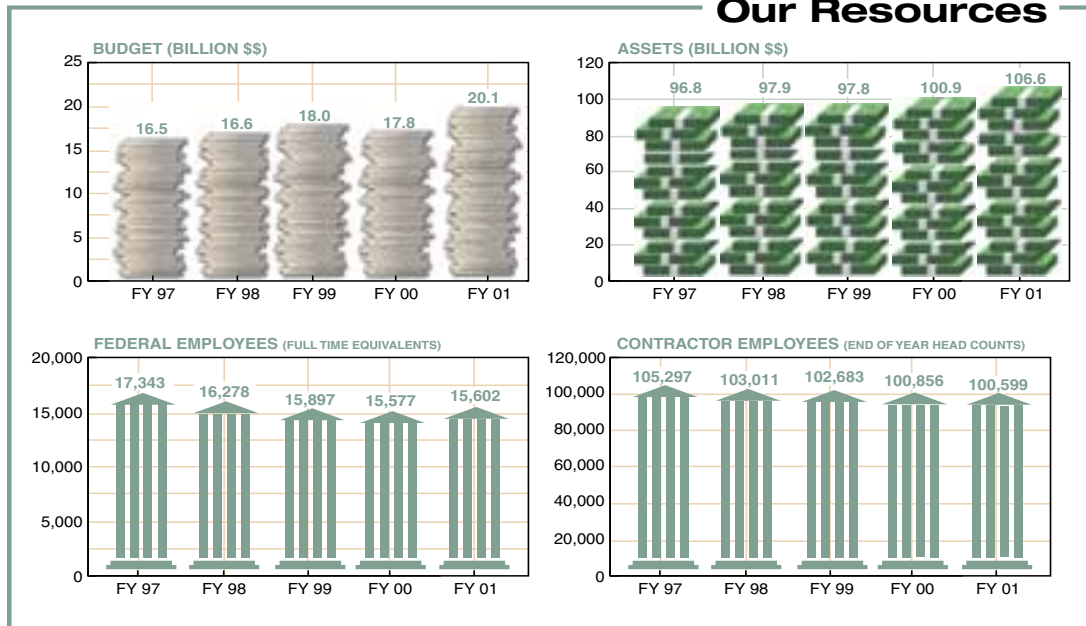
Department at a Glance

Our Mission

In 1977 when Congress passed the Department of Energy Organization Act creating the Department of Energy, various federal government agency programs were brought together to provide a central framework for the Nation's energy policy and planning functions.

Reflective of the variety of functions leading to its formation, the Department's missions are multifaceted. They include: fostering secure and reliable energy systems that are environmentally and economically sustainable; respon-

Our Resources



sible stewardship of the Nation's nuclear weapons and nuclear materials; cleaning up the environment from the legacy of early nuclear weapons development activities; and continued support of United States leadership in energy-related science and technology.

Our Focus on the President's National Energy Plan

The Nation's energy markets have experienced considerable price volatility over the last few years. In FY 2001, every region of the country experienced price increases for petroleum products and natural gas, and several regions endured more dramatic spikes in prices for specific fuels or electricity. In addition, millions of Americans dealt with rolling blackouts or brownouts.

The reasons for these price spikes are varied but include supply and demand imbalances, regulatory requirements, and infrastructure limitations. Until electricity restructuring legislation is enacted, uncertainty over the future direction of restructuring may result in price volatility. Although energy prices have moderated over the past few months, price volatility needs to be monitored and understood to ensure that energy markets are functioning efficiently and to ensure that it does not result in disproportionate economic impact.

The President has provided leadership in this area by directing the development of a National Energy Plan. The Plan was developed by a task force under the direction of the Vice President. It is a comprehensive, long-term strategy employing



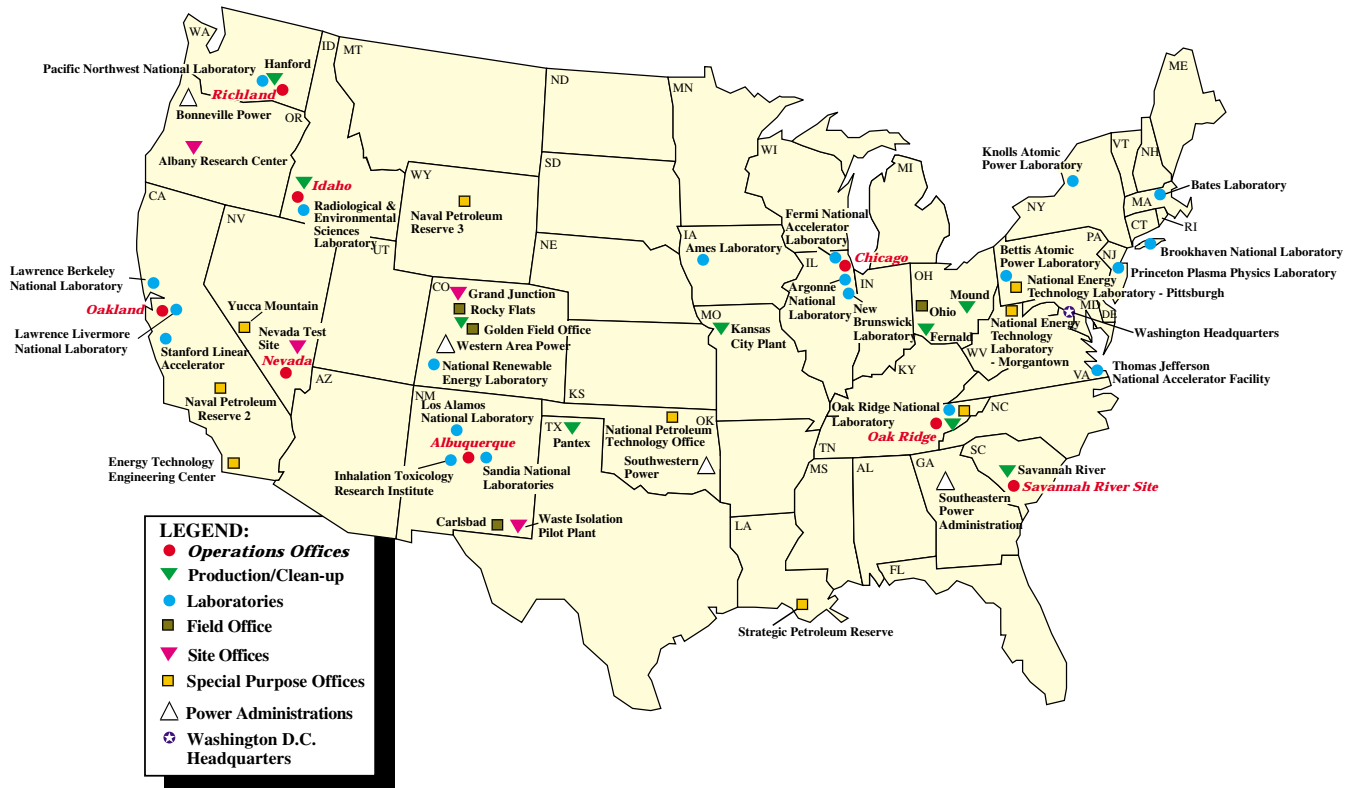
President George W. Bush and Secretary of Energy Spencer Abraham addressed Department of Energy employees in June 2001. (White House photo by Eric Draper)

cutting-edge, environmentally friendly technology to increase energy supply and encourage cleaner, more efficient energy use.

The Department of Energy has a major role in the implementation of the President's National Energy Plan. The Plan has five basic components: modernizing energy conservation efforts; modernizing the energy infrastructure; increasing the domestic energy supply; accelerating environmental protection; and increasing energy security.

Our Nation must have a broad, comprehensive energy strategy that ... helps us develop the technologies necessary to make wise choices in the marketplace, as well as calls upon our nation's innovative technologies to help us find new sources of energy.

President
George W. Bush



Our Major Field Facilities

The Department is accomplishing its missions through its unique scientific assets which are located throughout the United States and include outstanding national laboratories, facilities and employees.

Our Organization: Its Goals and Resources

Organizationally, the Department's programs are grouped into four business lines and a corporate management support function. Each business line has missions and goals that underlie those of the Department. The chart below also shows each business line's major resources to accomplish those goals.

Goals

Resources

National Nuclear Security

- ◆ Maintain nuclear weapons stockpile
 - ◆ Maintain nuclear development capability
 - ◆ Reduce danger of global nuclear proliferation
 - ◆ Maintain security of nuclear assets
 - ◆ Provide nuclear power plants to U.S. Navy
- ◆ Federal Employees (full time equivalent) 2,593
 - ◆ Operational Net Costs (in millions) \$6,041
 - ◆ Net Budget Authority (in millions) \$7,117

Energy Resources

- ◆ Promote energy conservation
 - ◆ Modernize the energy infrastructure
 - ◆ Increase energy supplies
 - ◆ Protect the environment
 - ◆ Increase energy security
- ◆ Federal Employees (full time equivalent) 6,322
 - ◆ Operational Net Costs (in millions) \$2,151
 - ◆ Net Budget Authority (in millions) \$2,321

Science

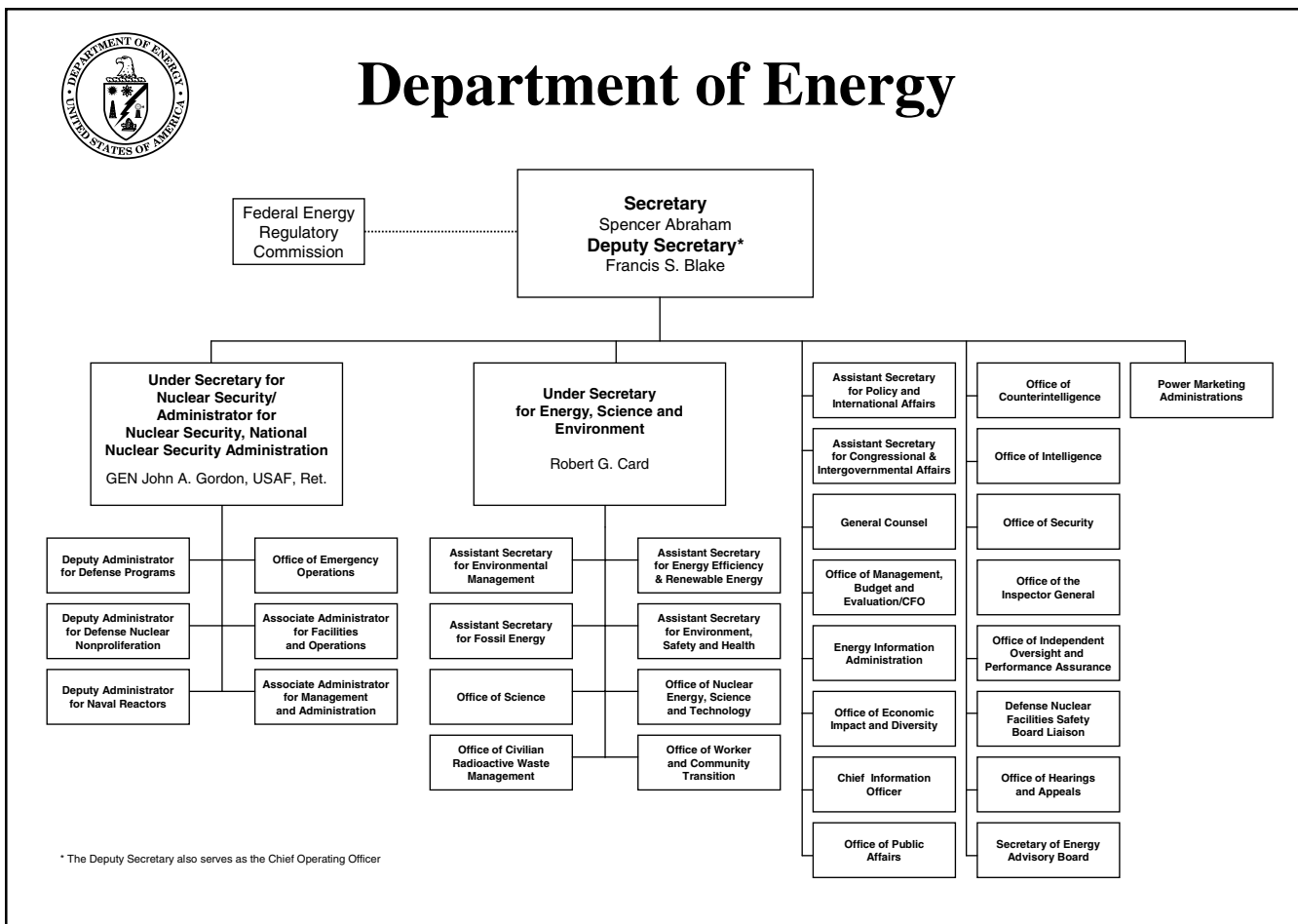
- ◆ Develop future energy technology options
 - ◆ Develop scientific foundations to protect our planet
 - ◆ Understand impact of energy on health and environment
 - ◆ Maintain U.S. scientific leadership
- ◆ Federal Employees (full time equivalent) 1,112
 - ◆ Operational Net Costs (in millions) \$2,758
 - ◆ Net Budget Authority (in millions) \$3,282

Environmental Quality

- ◆ Cleanup nuclear contamination at DOE sites
 - ◆ Establish repository for U.S. civilian and defense high-level nuclear waste
- ◆ Federal Employees (full time equivalent) 2,617
 - ◆ Operational Net Costs (in millions) \$216
 - ◆ Net Budget Authority (in millions) \$7,028

Corporate Management

- ◆ Ensure safety and health of workforce and public
 - ◆ Maintain effective management of all DOE activities
- ◆ Federal Employees (full time equivalent) 2,958
 - ◆ Operational Net Costs (in millions) \$207
 - ◆ Net Budget Authority (in millions) \$382



Our Departmental Challenges

The Federal Managers' Financial Integrity Act requires the Department to annually evaluate its management controls and identify any material weaknesses. This requirement covers all of the Department's programs and administrative functions. At the Department of Energy, we refer to these material weaknesses as Departmental Challenges.

The Department identified the following Departmental Challenges for FY 2001. More information can be found on the page shown.

As we at the Department of Energy work to serve the American people, we must administer our programs as efficiently and economically as possible. To do this, we rely on our system of management controls and have reasonable assurance that these controls are working effectively; however, we have identified 13 areas where Departmental Challenges exist. This report describes these areas and explains the actions we are taking.

Spencer Abraham
Secretary of Energy

Stockpile Surveillance and Testing

There are problems with DOE's surveillance and testing of the Nation's nuclear weapons stockpile ... Page 15

Project Management

Cost overruns, schedule slippages and other problems have occurred in large, important projects ... Pages 16 and 49

Managing Physical Assets

DOE needs to address deteriorating facilities ... Pages 18, 37 and 42

Surplus Fissile Materials

There are nonproliferation and storage issues related to U.S. and Russian fissile materials that are no longer needed for defense purposes ... Page 19

Security and Counterintelligence

There are nationally recognized shortfalls in DOE's security and counterintelligence programs ... Page 21

Energy Markets

Volatility in U.S. energy markets reflects the need to strengthen energy production and delivery systems ... Page 28

Environmental Standards and Stewardship

There are long-term environmental problems at DOE facilities resulting from past nuclear weapons activities ... Page 41

Nuclear Waste Disposal

The opening of a permanent repository for the Nation's civilian radioactive waste has experienced a number of delays ... Page 43

Safety and Health

Safety and health issues at DOE facilities have the potential to impact both current and previous workers ... Page 46

Human Capital Management

DOE needs to ensure that its federal workforce has the skills necessary to meet its missions ... Page 48

Performance Management

DOE's programs are not always results driven or focused on achieving outcome-oriented goals ... Page 48

Contract Management

DOE's reliance on contractors for the operation of many of its facilities requires increasing scrutiny of its contracting practices ... Page 50

Information Technology Management

DOE needs to meet federal requirements for improved and more cost-effective use of information technology ... Page 51

The Remainder of this Overview Section

The remainder of this Overview section presents information on the Department's business lines and corporate management function. Information presented includes a brief explanation of each business line as well as corporate management; summarized results of significant FY 2001 performance commitments; as well as detailed explanations of any Departmental Challenges that exist in the business line programs or corporate management activities.

The relevance and reliability of the performance information contained in this report is based on the Department's policy that the primary tool used at all levels to assess and evaluate results is self-assessment. The Department's program offices have provided the performance information and concurred in this report.

National Nuclear Security



The Nation is facing a new and complex set of challenges in the national security arena. The fragmentation of the former Soviet Union has led to concerns about the accountability, control and disposition of its nuclear materials and information. The events of September 11 and the continuing threat posed by terrorist organizations seeking weapons of mass destruction - chemical, biological and

nuclear - along with the technology and expertise pose very profound security concerns.

The Department plays a critical role in enhancing United States' national security through the military application of nuclear technology and reduction of the global danger from the proliferation of weapons of mass destruction. The National Nuclear Security Administration (NNSA), a semi-autonomous Administration within the Department, carries out these responsibilities. Responsibilities of the NNSA include maintaining the safety and reliability of the Nation's stockpile of nuclear weapons; promoting international nuclear safety and nonproliferation; and managing the Naval nuclear propulsion program. Four Department of Energy offices outside of the NNSA also have policy, oversight, and national security responsibilities: the Office of Security and Emergency Operations, the Office of Intelligence, the Office of Counterintelligence, and the Office of Independent Oversight and Performance Assurance. These programs, in coordination with the Department of Defense and other Federal agencies with a national nuclear security mission, help to ensure that we live in a safe and secure world.

National Nuclear Security Activities

The chart below displays the Department's major activities and costs associated with its National Nuclear Security functions in FY 2001.

Activity	\$ in Millions
Directed Stockpile Work	1,007
Campaigns	1,621
Readiness in Technical Base and Facilities	1,460
Secure Transportation Asset	117
Nonproliferation and Verification R&D	232
Arms Control	117
Nuclear Safeguards and Security	159
Fissile Materials Disposition	164
International Nuclear Safety	93
International Material Protection, Control and Accounting	129
Naval Reactors	700
Emergency Management and Response	75
Intelligence	40
Counterintelligence	48
Other	79
Total	6,041

The results achieved for our National Nuclear Security goals and key 2001 performance objectives are discussed below.

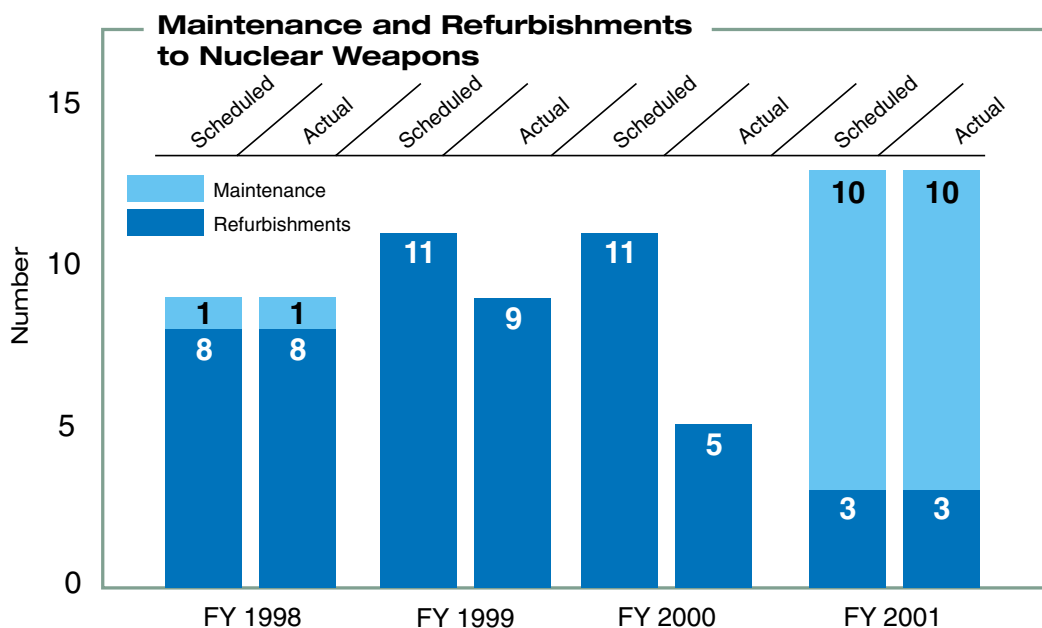
Maintain the Nation's nuclear weapons stockpile

A credible nuclear deterrence is critical to meeting the Nation's security challenges and sustaining domestic and international security. The Department is responsible for maintaining the safety, reliability, and performance of the aging nuclear weapons in the Nation's stockpile. It must accomplish this vital mission without underground nuclear testing and no new warhead production. Both the Secretary of Energy and the Secretary of Defense certify the condition of the stockpile to the President. The Department annually assesses the safety, reliability, and performance of the nuclear weapons stockpile. In FY 2001, the Department met its goal by completing the sixth annual certification process. Final reports on the systems were provided to the Energy and Defense Secretaries in September 2001, and upon approval by the

Nuclear Weapons Council, the report will be transmitted to the President.

The Department's efforts in maintaining the nuclear stockpile include surveillance, maintenance and refurbishment activities. Surveillance of the Nation's nuclear weapons stockpile is essential to assessing its safety and reliability. Maintenance and refurbishment are conducted when surveillance activities indicate a need to replace faulty components, meet changed military requirements, or to extend the life of the weapon. In FY 2001, the Department accomplished its goal to meet all annual weapons maintenance and refurbishment schedules developed jointly with the Department of Defense. Specifically, 10 maintenance requirements were completed on four weapons systems and major life extension refurbishments of three weapons systems were initiated in response to surveillance activities conducted by the Departments of Energy and Defense.

The Department is also responsible for safely and securely dismantling nuclear



warheads that have been removed from the U.S. nuclear weapons stockpile. The Department exceeded its FY 2001 goal to adhere to annual schedules for the dismantlement of nuclear warheads. Although the specific number of warheads dismantled is classified, the Department can report that 117 percent of the FY 2001 dismantlement quantity was completed without safety or security concerns. Disassemblies conducted during FY 2001 included the W-56 Minuteman II warheads and the W-79 Artillery-Fired Atomic Projectile warheads.

Departmental Challenge: Stockpile Surveillance and Testing

Since the moratorium on underground testing of nuclear weapons, the Department's responsibility to ensure the safety, security, and reliability of the nuclear weapons stockpile has been met through its Stockpile Stewardship Program. Successful implementation of the Stockpile Stewardship Program is key to the Secretary of Energy's annual certification to the President that the nuclear stockpile is safe and reliable. Deficiencies have been identified in surveillance tests of stockpiled nuclear weapons, a key component of the Stockpile Stewardship Program. Surveillance testing has been characterized as the first line of defense for maintaining high confidence in the stockpile and the link between stewardship activities and the annual certification process. Each year, the Department randomly selects 100 weapons to conduct surveillance tests. However, since 1996, the Department has not met many of its milestones for surveillance tests. This has resulted in a significant testing backlog. The backlog in surveillance testing puts the Department at risk for not having critical information on the reliability of these weapons. In addition,

defects within the weapon systems can go undetected, since the likelihood of detecting defects decreases when fewer tests are conducted. Some of the laboratory testing backlog was eliminated in FY 2001 and the Department expects to eliminate the remaining backlog by FY 2004.

Deficiencies have also been identified in conducting Significant Finding Investigations to determine the cause and impact of problems identified by surveillance tests, and to recommend corrective actions. The Department has not been meeting internally established timeframes for initiating and conducting investigations of defects and malfunctions in nuclear weapons. As a result of investigation delays, test data and findings related to weapon reliability were not readily available to the Departments of Energy and Defense. If these delays continue, the Department may not be able to certify the aging nuclear weapons stockpile. The Department initiated immediate action to develop and implement a database in FY 2002 to track the notification and resolution phases of the Significant Finding Investigations process to establish a basis for monitoring the Department's progress and accountability.

Maintain nuclear weapons technology capability

The Department is responsible for maintaining the scientific, engineering and manufacturing capability that is needed for the current and future certification of the nuclear weapons stockpile. The Department is deploying new computer technologies to help ensure the continued safety, security and reliability of the stockpile.

The Advanced Simulation and Computing Campaign is being developed to help maintain our existing, aging stockpile through advanced computer simulation and modeling. In FY 2001, the Department met its goal to develop modeling and simulation tools and capabilities required for design and certification of the nuclear weapons stockpile. All five of the milestones for the FY 2001 Advanced

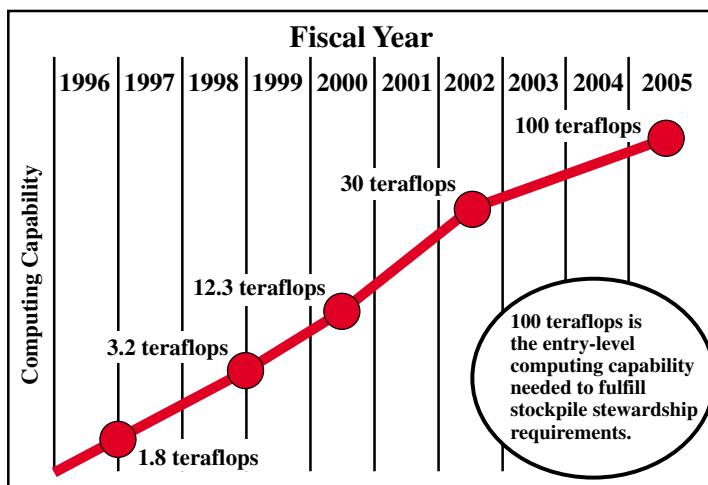
Well on the Way to 100 Trillion

The National Nuclear Security Administration's Advanced Simulation and Computing Campaign utilizes four of the six fastest supercomputers in the world, according to a recent rating by TOP500, the computer performance list published twice a year by the University of Tennessee and the University of Mannheim, Germany. The speed used in these supercomputers is needed to help scientists maintain the nuclear stockpile's safety and reliability by simulating – in three dimensions – the aging and operation of nuclear weapons in a world without nuclear testing. A ten year goal of the Advanced Simulation and Computing Campaign program is to deploy an integrated weapons simulation capability running on a computer capable of 100 trillion calculations per second.

Simulation and Computing Campaign Program Plan were completed on or ahead of schedule. The demonstrated completion of these milestones indicates that the Advanced Simulation and Computing Campaign program is advancing the acquisition of simulation tools and capabilities required for design and certification of the nuclear weapons stockpile in the absence of underground testing.

During FY 2001, the Department met its goal to improve our scientific understanding of nuclear weapons in order to sustain our ability to annually certify the

Computing Capability of the Stockpile Stewardship Program



The goal is to achieve the 100-teraflops (trillion-floating-point-operations-per-second) threshold in 2005.

nuclear weapons stockpile without underground nuclear testing. The Department continues to conduct world-class science needed to support stockpile work and provide a valid scientific basis for the annual certification of the stockpile. Some critical achievements in FY 2001 include: successful experiments to obtain data on the materials behavior of plutonium, a necessary component of nuclear weapons; development of a new plutonium strength model to be incorporated in weapons computer simulation codes; and, successful extraction and analysis of valuable data from previously conducted underground tests to support the validation of computational models.

Departmental Challenge: Project Management

(National Nuclear Security Component)

Credibility in the Department's ability to build new national nuclear security facilities or upgrade existing systems

has been adversely affected by cost overruns, schedule slippages, unplanned mid-course redirection and other project management problems. These issues have led to concerns about the Department's construction project management structure and practices.

An expert panel, under the National Research Council of the National Academy of Sciences, assessed the Department's policies and procedures to identify the root causes of project management deficiencies. In response to the National Research Council's findings, the National Nuclear Security Administration established a new project management organization and launched a 3-year Defense Project Management Campaign designed to address the deficiencies identified.

In addition, a Six Point Plan was developed to address project management issues related to design delays impacting the project schedule and baseline cost for the National Ignition Facility. To address the plan, the National Nuclear Security Administration completed a certification of a new project baseline to Congress and implemented an ongoing project oversight process. In addition, as directed by the plan, the National Ignition Facility was placed on the Department's "watch list" for troubled projects, and quarterly reports are submitted to the Department's Office of Engineering and Construction Management. In October 2000, the Secretary of Energy's Advisory Board issued its final report recommending the best technical course of action on the National Ignition Facility. This was followed by the National Nuclear Security Administration Administrator's certification to Congress in April 2001 that the project was on track and on schedule.

In FY 2002 the Department will continue to strengthen oversight of project management by addressing all recommendations of the National Research Council and completing the Defense related project management improvement campaign.

Information on Department-wide activities related to the Project Management Departmental Challenge can be found in the Corporate Management business line discussion.

Ensure the readiness of the Department's national security enterprise

Maintaining a cost-effective, safe, secure, and environmentally-sound enterprise for the national nuclear security programs is a multifaceted endeavor. It involves ensuring that the facilities required for achievement of the Stockpile Stewardship Program remain operational; downsizing and modernizing our facilities to ensure efficient and effective operations; retaining the capability to resume underground nuclear testing; and protecting our nuclear materials, information and technologies.

During FY 2001, the Department met its goal to ensure its national security facilities are operational, safe, secure, and that a defined state of readiness is sustained. Essential to the Stockpile Stewardship Program is the National Nuclear Security Administration's ability to meet future tritium requirements. Tritium, a radioactive isotope of hydrogen, is necessary for the proper function of all nuclear weapons. Since tritium decays at a rate of about 5 1/2 percent a year, it must be replaced in weapons to ensure they can meet performance requirements. The United States has not produced new tritium for the past 12 years

and has used recycled tritium from dismantled weapons to meet supply requirements. As part of the Department's strategy to meet future tritium requirements, the Savannah River Site's Tritium Extraction Facility is under construction. During FY 2001, construction of the Tritium Extraction Facility continued on schedule, and all facilities were available except for scheduled outages.

Also essential to ensuring the readiness of the Department's national security enterprise is the ability to recapture the capability to fabricate and assemble plutonium pits. Plutonium pits are the core of nuclear weapons and new production is required to support future stockpile requirements. Nuclear production facilities at the Department's Los Alamos and Sandia National Laboratories must remain operational in order for the Department to provide the capability to produce plutonium pits. The facilities were available for operation during FY 2001, meeting all production requirements.

Meeting national nuclear security requirements in a post Cold-war era has required the National Nuclear Security Administration to reevaluate its nuclear weapons complex. Downsizing and modernizing activities at several production sites will ensure that the United States maintains an appropriately-sized, cost-effective, safe and secure national security enterprise. During FY 2001, the Department nearly met all established schedules for downsizing and modernizing its production facilities. Schedules were met for the tritium facilities at Savannah River; weapons assembly/disassembly and high explosive facilities at the Pantex Plant; and non-nuclear production facilities for elec-

tronic, electro-optical devices, plastic and machined parts at the Kansas City Plant. The enriched uranium reduction process restart activity at the Y-12 Plant in Oak Ridge remains on hold, however, due to unresolved safety issues.

**Departmental Challenge:
Managing Physical Assets**

(National Nuclear Security Component)

The aging and deterioration of the Department's defense facilities have resulted in a complex that averages almost 50 years of age, well beyond its expected useful life. The Department is at risk for not being able to meet existing national nuclear security mission objectives if the condition and functionality of its facilities are not adequately addressed. The condition of the Department's facilities is impacting the production mission and negatively influencing the Department's ability to retain its highly-skilled scientific and technical workforce. During FY 2001, Ten-Year Comprehensive Site Plans were submitted by each site comprising the nuclear weapons complex. The Ten-Year Site Plans are being integrated into a five-year budget for submission to Congress as part of the FY 2003 budget request. In addition, designation of a focal point in FY 2001 to integrate weapon systems and production activities with infrastructure capabilities occurred with the creation of the National Nuclear Security Administration's Office of Associate Administrator for Facilities and Operations. An assessment of the defense programs facilities and infrastructure was completed in FY 2001 and the Department will finalize development of the Facilities Management Process Plan for addressing infrastructure modernization needs in FY 2002.

Challenges the Department is facing with aging and deteriorating facilities in other areas are addressed in the Science and Environmental Quality business line discussions.

Reduce the global danger from the proliferation of weapons of mass destruction

Critical to meeting the Nation’s security challenges are international cooperative efforts with the former Soviet Union and other countries to minimize the threat of proliferation of excess fissile materials and the safety risks of aging nuclear power plants. The Department takes an active role in reducing the global danger from weapons of mass destruction by reducing inventories of surplus weapons-usable fissile materials worldwide. Such efforts entail reducing our own weapons stockpile as well as interna-

tional cooperation to dispose of surplus fissile materials, placing excess materials under safeguards of the International Atomic Energy Agency, and reducing the demand for highly enriched uranium in civilian programs.

Departmental Challenge: Surplus Fissile Materials

The United States and Russia have extensive inventories of fissile nuclear materials that are no longer needed for defense purposes. A danger exists in the potential global proliferation of nuclear weapons and in the potential for environmental, safety and health consequences if surplus fissile nuclear materials are not properly managed. Additionally, the Department could save storage, security, maintenance, and handling costs associated with these assets.

In order to reduce the proliferation threat and handling costs associated with surplus fissile materials, the Department has undertaken efforts to convert highly enriched uranium to non-weapons grade low enriched uranium in both the United States and Russia. During FY 2001, the Department planned to make available 9 metric tons of surplus highly enriched uranium to the United States Enrichment Corporation for down blending to low enriched uranium and subsequent sale. The Department nearly met its goal, shipping 6 metric tons of highly enriched uranium. During FY 2001, the Department met its goal to convert an additional 1.2 metric tons of Russian highly enriched uranium to low enriched uranium, increasing the total amount converted to 2.4 metric tons. The Department also continued its efforts in FY 2001 to assist Russia in completing material protection, control and accounting upgrades of its weap-



Global Positioning System (GPS) satellite carrying NNSA nuclear explosion monitoring sensors.

ons-usable nuclear material to provide long-term, enhanced security, thereby, reducing the risk of proliferation. By completing upgrades on an additional 7 percent of 850 metric tons of weapons-usable nuclear material, the Department nearly met its goal to complete upgrades on an additional 8 percent of material.

Peaceful Use for Plutonium

What was once weapons-grade plutonium stocked by the United States and Russia during the Cold War is being experimentally consumed in Canadian civilian nuclear reactors and thus rendered useless for weapons of mass destruction. The Department has a leading role in a joint venture between the United States, Russia, and Canada, called the Parallelx project. The project, one of several concepts being considered, demonstrates the feasibility of converting US and Russian surplus plutonium into mixed-oxide, or MOX, fuel for Canadian civilian reactors.

The Department's focus regarding surplus plutonium has shifted from a hybrid strategy that calls for the disposition of surplus plutonium through immobilization of some plutonium in ceramic form and burning of some as mixed oxide fuel. In FY 2001, the decision was made to suspend work on immobilization and document the results achieved. Design of the planned Mixed Oxide Fuel Fabrication Facility and the Pit Disassembly and Conversion Facility will continue, but the completion date for design of the facilities has slipped to 2003 due to a review of the Surplus Fissile Materials Program being conducted by the National Security Council. During FY 2002, a study will be conducted to examine alternatives aimed at reducing costs in the United States and Russia and making greater use of existing facilities and equipment.

Provide the U.S. Navy with safe, militarily-effective nuclear propulsion plants

Due to its nuclear expertise and state-of-the-art nuclear facilities, the Department of Energy is charged with providing the U.S. Navy safe, militarily-effective nuclear propulsion plants for use aboard Navy warships. In FY 2001, the Department exceeded its goal to ensure the safety, performance reliability, and service-life of operating reactors, including maintaining utilization of at least 90 percent for test reactors and 121 million miles steamed for nuclear-powered ships. During FY 2001, the Department exceeded 90 percent utilization for test reactor plants and nuclear powered warships have accumulated over 122 million miles steamed without a reactor incident.



A bow view of a 688 Class, nuclear-powered, fast attack U.S. Navy submarine.

For FY 2001, the Department also had a goal to develop new technologies, methods and materials to support reactor plant design, including 93-percent completion of the next generation submarine reactor and initiation of detailed design efforts on a reactor plant for the next generation aircraft carrier. This goal was exceeded in FY 2001 with development efforts on a new reactor plant for the next generation submarine reac-

tor over 93 percent complete, and detailed-design initiated on the reactor plant for the next generation aircraft carrier, which is on schedule to meet the planned ship construction start.

Maintain security of nuclear assets

Securing the Department's nuclear weapons, materials, facilities, and information assets requires collaboration among the Offices of Security and Emergency Operations, Intelligence, Counterintelligence, and Independent Oversight and Performance Assurance and the National Nuclear Security Administration.

Departmental Challenge: Security and Counterintelligence

Last year, positive and aggressive actions were taken by the Department to strengthen security and counterintelligence activities. We are continuing to take aggressive actions to improve security and counterintelligence and we have mitigated many concerns. However, recent terrorist activities have prompted the Department to consider new security threats and to identify and implement new security measures on an evolving basis. It is anticipated that we will have to commit significant additional resources to protect against these new evolving threats. Further, we still need to improve certain procedures for cyber security, controls over classified and nuclear weapons-related information, and security of our networking infrastructure necessary for critical systems.

Security: The Department has improved security activities. We established a direct-funded safeguards and security budget and obtained supplemental security funding in response to the September 11, 2001, terrorist attacks. In addition, we have improved our procedures for classified document transmittal, taken action

to correct deficiencies related to foreign visits and are in the process of implementing a Department-wide Integrated Safeguards and Security Management Program. We have performed 22 independent site reviews, including 7 cyber security reviews and 15 combined security and cyber security reviews. Our strategy for continually enhancing security includes: renewing our focus on security strategic planning Department-wide; developing and implementing action plans and metrics for success and improving existing ones; performing continuous oversight reviews; continuing utilization of a direct-funded budget; and developing new policies designed to strengthen controls.

Counterintelligence: With respect to Counterintelligence, we have implemented 42 of 46 recommendations in our Counterintelligence Implementation Plan and have actions well underway to address the remaining four recommendations.

Although the Department has made significant progress, improving security and counterintelligence is an iterative and evolving improvement process, especially with the renewed emphasis placed on this program as a result of the September 11, 2001, terrorist attacks. The Department has reemphasized that our overarching mission is national security. To this end, we are aggressively addressing the challenges presented by a need for improved homeland defense, threats posed by terrorists, and the threat of weapons of mass destruction. Responding to these threats and allocating adequate Departmental resources to these missions will likely have far reaching consequences for the Department's programs and organization.

Accordingly, we anticipate that security and counterintelligence will remain a Departmental Challenge for the foreseeable future.



Energy Resources

Energy is the most vital component of our modern society. It powers business and industry and provides comfort and security for our families. From transpor-

tation to communication, from air conditioning to lighting, energy is critical to nearly everything we do in life and work; however, with energy supply and demand playing increasingly critical roles in our efforts to enhance security, improve the environment and support continued economic growth, it is clear that what we do today will define our future.

In FY 2001, the President presented to the American people a comprehensive National Energy Policy to meet our energy challenges. This Policy has established five key national goals: modernize our conservation efforts; modernize our energy infrastructure; increase energy supplies; accelerate the protection and improvement of the environment; and, increase our Nation's energy security.

The Department supports the National Energy Policy by promoting the development and deployment of energy systems and practices that will provide current and future generations with clean, efficient, affordable, and reliable energy.

Energy Resources Activities

The chart below displays the Department's major activities and costs associated with its Energy Resources functions in FY 2001.

Activity	\$ in Millions
Power Technologies	328
Industrial Technologies	196
Transportation Technologies	288
Building Technologies	307
Federal Energy Management Program	26
Coal Research and Development	249
Petroleum Research and Development	63
Gas Research and Development	35
Clean Coal Technology	115
Nuclear Energy Research Initiative	25
Nuclear Energy Plant Optimization	5
Strategic Petroleum Reserves	42
Naval Petroleum Reserves	12
Power Marketing Activities	279
Energy Information Administration	78
Other Energy Resource Activities	104
Total	2,151

The Department's key performance goals and other activities that support the National Energy Policy are discussed below.

Modernize conservation efforts by using new technologies to increase efficiency

The first line of attack in meeting our energy challenges is to ensure the productive and optimal use of available energy resources. The Department continuously strives to develop and apply new technologies to increase the efficiency and effectiveness of energy consumed.

For FY 2001, we have worked aggressively with our Building America program partners to build energy efficient, environmentally sound, high performance homes. These homes boast little or no incremental construction costs and can save 30 to 50 percent in residential heating and cooling requirements, which equates to an estimated savings of up to \$28,800 in current dollars over the life of the home. In FY 2001, the program successfully completed 3,800 of these homes, exceeding the goal by 800.

In addition, the Department works closely with private industry, governments and consumers to promote products that are more energy efficient and environmentally friendly. The Energy Star program was established in 1992 to identify energy efficient products and reduce carbon emissions. The Department of Energy has partnered with the Environmental Protection Agency to advance this program and, in FY 2001, set a goal to increase the total number of stores marketing Energy Star products to 6,500 by recruiting an estimated 400 new Energy Star partners. Although only 319 new partners were brought on board in FY 2001, we were able to raise the number of new stores

marketing Energy Star products to 13,900, more than doubling that goal.

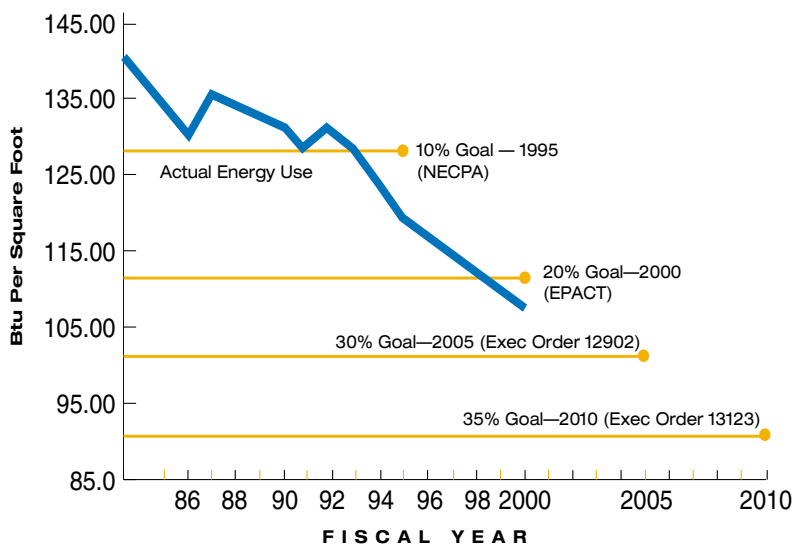
In the industrial sector, we supported approximately 500 cost-shared research and development projects in critical areas identified by industry, with a focus on high-risk but promising technologies that can drastically reduce industrial energy use. In FY 2001, these efforts contributed directly to industrial energy savings of nearly 263 trillion Btus, savings worth over \$1.6 billion.

We also led federal efforts to increase the fuel economy of our nation's transportation system through groundbreaking research and development and public-private partnerships. These efforts catalyze both evolutionary and breakthrough energy saving technologies and processes. In FY 2001, the Department met with U.S. automakers to define a new public-private partnership to develop cost-effective fuel cell powered vehicles.

The Department is also working through our Weatherization Assistance Program to reduce the burden of energy prices on the disadvantaged by making low-income homes more energy efficient. On November 27, 2001, the program celebrated its 25th anniversary by commemorating the weatherization of the 5-millionth home. This program returns an estimated \$2.10 in energy conservation savings for every dollar spent and, last winter alone, the savings for all households weatherized since 1976 totaled more than \$1 billion.

The Federal Government itself is also committed to participating in the conservation efforts we sponsor. As such, the Department has continued the Federal Energy Management Program, which

helps federal agencies reduce their costs, increase energy efficiency, use renewable energy, and conserve water. In fact, data for fiscal year 2000 indicates that the Federal Government achieved a 23.6 percent improvement in energy efficiency since FY 1985, exceeding the 2000 goal of 20 percent. FY 2001 data was not yet available at the time of this report.

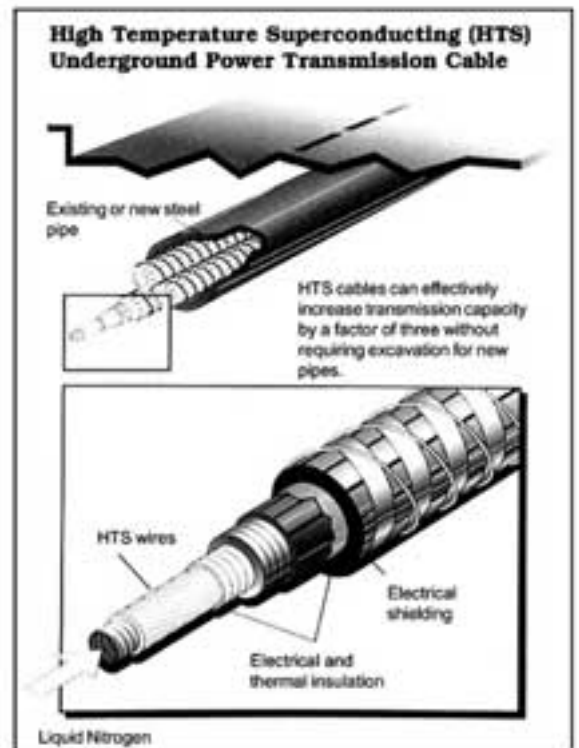


Through these and other programs, the Department has and will continue to foster a national consciousness of the need for energy conservation and, along with other Federal agencies, is committed to leading by example.

Modernize our energy infrastructure

Energy must not only be produced, but also delivered to the consumer. The energy we use passes through a vast network of generating facilities, transmission lines, pipelines and refineries that convert raw resources into the fuel and power we need. The Department’s activities include a number of initiatives to help industry maintain this infrastructure in ways that will keep pace with demand and ensure an uninterrupted supply of energy for the future.

The Department continues to develop new technologies to improve our energy delivery systems and ensure the reliability of current transmission mechanisms. This includes the Distributed Energy Program whose small, on-site power technologies will lessen the need for new central infrastructure, reduce current system stress and improve reliability of both the system and at the site. Another example is phasing work to expand research into superconductivity. This lead-



(American Superconductor)

Diagram of Pirelli superconducting wire installed at Detroit Frisbee substation.

ing edge technology holds the promise of transmitting and using electricity with near-perfect efficiency and at a much higher capacity. In FY 2001, we met our goal to install first-of-a-kind superconducting electrical transmission cables in an urban substation serving 14,000

customers in Detroit. This is a significant achievement, as it marks the first time commercial power has been delivered to customers of a U.S. power utility through superconducting wire.

The continued safe operation of our nuclear facilities is another major infrastructure focus. The Department's Nuclear Energy Plant Optimization program is a government/industry cost-shared research program initiated in FY 2000. This program conducts research and development directed at managing the long-term effects of component aging and improving the reliability, availability and productivity of existing U.S. commercial nuclear power plants. In FY 2001, nine new projects which are expected to contribute significantly to the continued effective operation of our nuclear plants, were awarded to national laboratories, private sector companies and universities.

Additionally, as recommended in the National Energy Policy, the Department and the Federal Energy Regulatory Commission are working on comprehensive energy legislation that will enhance competition, encourage investment in transmission facilities, and improve transmission reliability, while protecting consumers and the environment.

Increase domestic energy supplies

The Department provides cutting-edge research in a broad range of energy sources. As energy demand outpaces supply, the Nation will need to expand its sources of domestic energy production.

A major component of our current and future energy supply is nuclear energy. Currently, nuclear facilities generate 20 percent of the Nation's electricity and



Calvert Cliffs is the first US Nuclear Plant to receive a renewed license from the Nuclear Regulatory Commission. The renewal will allow the plant to continue producing electricity for an additional 20 years.

more than 40 percent in 10 states in the northeast, south, and midwest. The National Energy Policy has recommended the expansion of nuclear energy in the United States. The Department's Nuclear Power 2010 program supports this recommendation by focusing on removing the technical, institutional and regulatory barriers hindering the deployment of new nuclear power plants in the United States by the year 2010. The Department plans to move forward with various research and development, licensing demonstration, and legislative efforts to expand the production of nuclear energy. Further expansion of nuclear energy will be stimulated by the construction of a permanent waste disposal facility.

The Department has also made significant advances in tapping into our country's wealth of renewable energy sources, such as wind, solar, biomass, hydro-power, and geothermal energy. Our renewable energy research and development has made significant progress increasing the conversion efficiency of renewable technologies, reducing the costs of power and renewables generation and demonstrating its reliability and

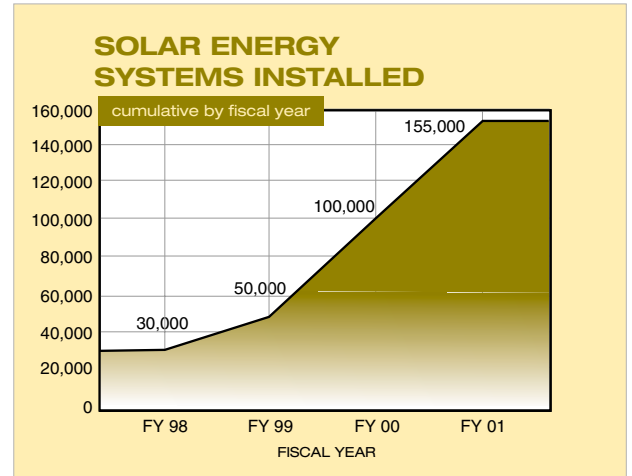
market potential. Geothermal technology harnesses the earth's natural energy to produce heat and power that is clean, reliable and "homegrown." Our mission in this area is to work with industry to increase the role of geothermal energy, expanding its economically competitive contributions to the U.S. energy supply. In 2001, we met our goal to select industrial partners to build two cost-shared geothermal power plants using Enhanced Geothermal System technology. The two power plant projects stemming from these awards will demonstrate the viability of Enhanced Geothermal System technology, which has the potential of more than doubling the amount of developable geothermal resources in the nation. The Enhanced Geothermal System could provide up to 20,000 megawatts of new geothermal capacity by 2030.

For FY 2001, the Department also established a goal to facilitate the installation of 20,000 solar energy systems in support of the Million Solar Roofs Initiative.



An engineer from Sandia National Laboratory checks photovoltaic unit that will be used by Navajo families to furnish power for their homes.

These systems harness the power of the sun to produce energy, thereby diversifying and boosting our domestic energy resources. The Department exceeded this goal by installing 50,000 solar energy systems, bring-



ing the total number of installed systems to 155,000. The initiative is on track to exceed its goal of installing 1 million systems on U.S. buildings by the year 2010.

Domestic oil is also essential to the Nation's energy supply. There is a critical need to increase the U.S. capability to produce and refine domestic oil. In fiscal year 2001, the Department set a goal to demonstrate five advanced technologies estimated to increase near-term incremental oil production by 1.7 million barrels and long-term incremental production by over 2.4 billion barrels. In 2001, the Department successfully demonstrated four of the five technologies, which have produced an incremental 4.4 million barrels of oil in the near-term and can potentially increase long-term future domestic reserves by over 2 billion barrels of oil. Although demonstration of the fifth project has been deferred due to the pending sale of the producing property where the project was defined, the Department fully expects that it will yield sufficient results to meet our 2.4 billion barrel long-term goal when completed. More importantly, these projects have demonstrated

the feasibility of recovery of large domestic oil resources that had once been considered economically unrecoverable. For example, after applying a combination of these advanced technologies and revised production techniques, wells that had been producing a mere 10 barrels of oil per day increased their production to 1,500 barrels of oil per day. Due to this demonstrated success, these technologies are now in use in three adjacent fields.

Through on-going research and careful implementation of the National Energy Policy recommendations, the Department will continue to develop and deploy new technologies that will help ensure an increased supply of energy for America.

Accelerate the protection and improvement of our environment

Protection and improvement of the environment is a key factor in the Department's activities. Besides conservation, which lessens the environment degradation and health impacts associated with energy production and use, solar, wind, hydropower, and geothermal technologies, among others, provide "cleaner" and more environmentally friendly approaches to power generation.

Our work in the alternative and bio-fuels area provides a similar benefit for commercial and consumer transportation.

The Clean Coal Power Initiative is another Departmental effort that is anticipated to yield significant benefits for our environment by providing an opportunity for research, development and demonstration of emerging technologies in coal-based power generation and accelerating their deployment into commercial use.

Finally, the Department is leading the President's National Climate Change Technology Initiative. This interagency initiative will review existing climate change programs and make recommendations by early FY 2002 for the next generation of new technologies needed to address greenhouse gas emissions.

These are but a few of the Department's efforts to provide environmentally friendly solutions to the world's energy challenges. We will continue to help develop and deploy new technologies to provide for the protection of our environment while ensuring a sustainable energy supply.

Departmental Challenge: Energy Markets

Volatility in U.S. energy markets over the last few years has demonstrated the need to strengthen the stability of the Nation's energy production and delivery systems as well as ensure the country's energy security. Recent disruptions in our energy supplies have highlighted both our vulnerability to changing world oil markets and the failure of our domestic energy supplies and delivery systems to keep pace with rapidly increasing demand. Although energy supplies are



Bus powered with biodiesel fuel made of soybeans in Nebraska.

again plentiful, the underlying problems contributing to those earlier market disruptions remain.

Recognizing the need to attack the Nation's energy problems at their roots, in May 2001, the President delivered to the American people a National Energy Policy to promote dependable, affordable and environmentally sound production and distribution of energy for the future. The plan sets forth a comprehensive long-term strategy employing cutting-edge, environmentally-friendly technology to increase energy supply and encourage cleaner, more efficient energy use. The Department of Energy is a key player in the success of this policy and will attack the problem through implementation of the specific recommendations contained in the National Energy Policy.

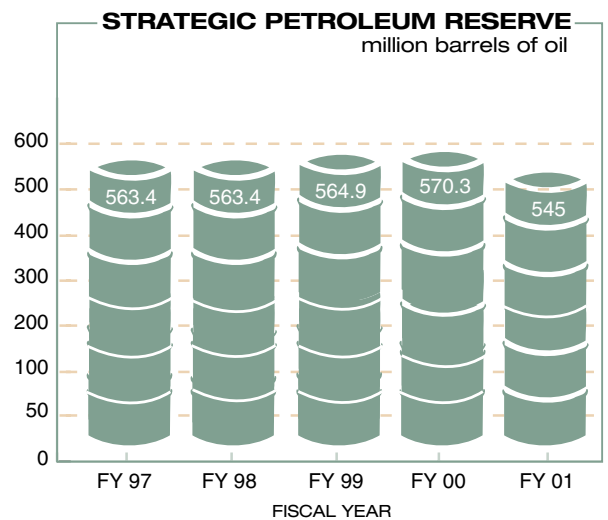
Although the Policy is relatively new, the Department has already taken a number of steps toward its implementation. We have completed a strategic review of our renewable and energy efficiency research and development programs to make sure they are well aligned to meet the National Energy Policy goals. We increased Departmental funding in areas such as weatherization assistance, clean coal technology, and renewable energy research and development to focus on areas emphasized in the President's plan. Internationally, we have promoted energy security through global meetings and summits held to foster a coordinated, worldwide approach to addressing our energy supply issues.

The Department will continue to aggressively pursue implementation of the National Energy Policy recommendations and strengthen our Nation's energy security.

Increase our Nation's energy security

The Department has taken several important steps to strengthen our Nation's energy security by reducing our vulnerability to energy supply disruptions.

The Strategic Petroleum Reserve stands ready as a dependable line of defense against an interruption in foreign oil supplies. At the end of FY 2001, the Reserve's calculated site availability was at 95 percent with the capacity to draw down crude oil at an initial sustainable rate of 4.19 million barrels per day for 90 days should the President so direct.



Note: FY 2001 oil level declined due to the strategic sale of oil from the reserve in the beginning of the year.

Since fiscal year 1999, the Department's "royalty-in-kind" program has been a key initiative for increasing the reserve's oil supplies. Through this program, crude oil is accepted in lieu of cash as payment for royalties owed to the U.S. government by oil producers who lease federally-owned areas. In FY 2001, we met our goal to complete the transfer of 28 million barrels of royalty oil to the Reserve per a FY 1999 agreement. In addition, in October through November

2000, 30 million barrels of the Reserve's crude oil were exchanged for 31.15 million barrels to be delivered one year later. Remaining deliveries from both royalty oil and time exchange contracts were deferred into FY 2002 and 2003 due to logistics and market considerations. As a result of these deferrals, 47 million barrels are scheduled to arrive by January 2003 under these agree-



Oil tanker unloading Department of Energy crude oil at a terminal on the Gulf Coast.

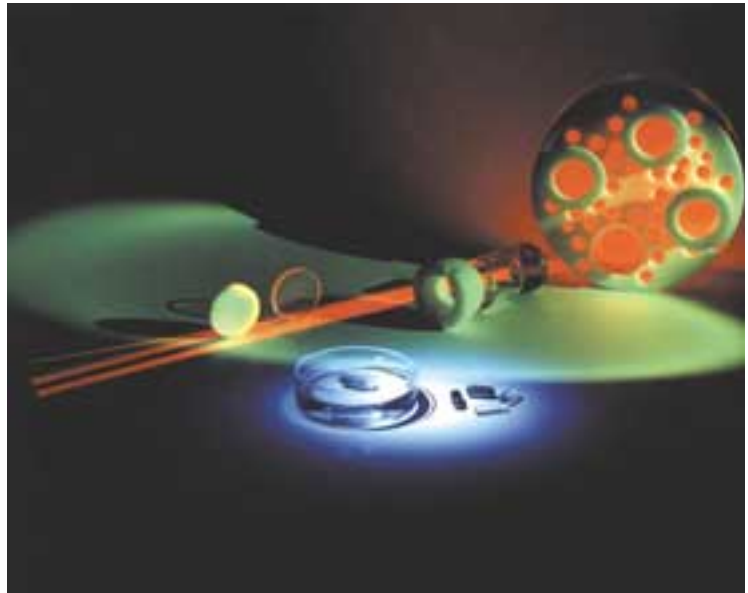
ments. Most recently, the President has directed that the Reserve be filled to its 700 million barrel capacity, which will expand the royalty-in-kind program and add up to 108 million barrels of additional oil to the stockpile. All of these activities help ensure that our nation is well prepared to counter the potential economic harm of a major oil supply disruption.

In addition, the Department has met its goal to establish a Northeast Heating Oil Reserve with storage contracts and physical inventory of 2 million barrels of home heating oil to help protect Americans against possible winter fuel shortages. Establishment of the Heating Oil

Reserve involved the exchange of crude oil from the Strategic Petroleum Reserve for both the 2 million barrels of heating oil and leased storage capacity in New Jersey, Connecticut, and Rhode Island. Government sales procedures and distribution plans are in place to ensure completion of a heating oil drawdown within 12 days of a presidential notice.

The Department also helps increase our Nation's energy security by enhancing the reliability of the electricity system and its ability to rebound from adverse events. These activities include improving the efficiency of the transmission and distribution system, reducing the demand for peak electricity, and facilitating the growth of distributed generation systems. These efforts not only reduce the strain on overburdened transmission systems, but future networks which include distributed on-site power generators will provide local back-up power in the event of an emergency and be much less vulnerable to natural or man-made failures.

The programs addressing the National Energy Policy conservation and energy supply goals also contribute to our nation's energy security by reducing demand for energy and lessening our vulnerability to harmful supply shocks by diversifying our domestic energy resources. Combined, all of these efforts provide effective economic and technological domestic energy security.



Science

Today, the Department is one of the largest sponsors of basic and applied research and development for the Nation. The Department supports thousands of individual research projects at hundreds of research facilities across the United

States, primarily at the Nation's research universities and the Department's national laboratories.

With a focus on exploring mysteries of the natural world, the Science business line leads the nation in its support for the physical sciences and is a significant contributor in the fields of computation, biology and environmental sciences. The Department's cadre of large-scale scientific facilities support the United States' position as the worldwide leader in science.

The goal of our Science business line is to advance the basic research and instruments of science that are the foundations for the Department's applied missions, a base for U.S. technology innovation, and a source of insights into our physical and biological world and the nature of matter and energy. We are working toward this goal through our objectives which include: developing future energy technology options; understanding the fundamental nature of energy; understanding the impact of energy on health and the environment; and, maintaining U.S. scientific leadership.

Science Activities

The chart below displays the Department's major activities and costs associated with its Science functions in FY 2001.

Activity	\$ in Millions
Biological & Environmental Research	425
Fusion Energy Sciences	263
Basic Energy Sciences	685
High Energy Physics	700
Nuclear Physics	391
Advanced Scientific Computing Research	122
Small Business Innovative	94
Technical Information Management Program	10
Advanced Radioisotope Power System	31
University Nuclear Science & Reactor Support	15
Isotope Production & Distribution	19
Other Science Activities	3
Total	2,758

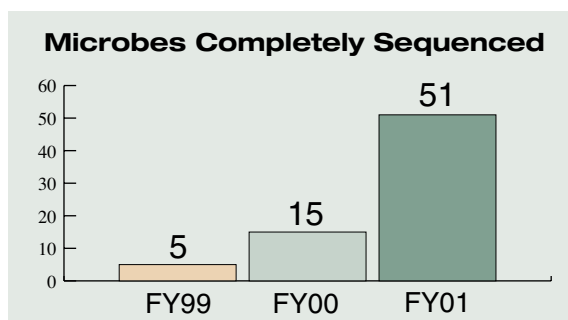
The results achieved for our goals and key 2001 performance objectives follow.

Develop scientific foundations to protect our planet

As the world continues to rely on fossil fuels to fill energy needs, greenhouse gases increase. These greenhouse gases, which include carbon emissions, are believed to contribute to global warming. Decoupling fossil fuel use and greenhouse gas emissions is viewed as a possible solution to global warming. One potential approach to decoupling the two is carbon sequestration, which is the act of capturing carbon emissions and securely storing them so they do not enter the atmosphere.

In order to further research and development in this area, the Department has plant and microbial genomics projects underway to provide detailed knowledge about organismal metabolic networks and interrelationships among different organisms in an ecosystem. Such knowledge will enable a better understanding of ecosystems and how to man-

age their productivities, including carbon sequestration. During FY 2001, the Department committed to complete the genetic sequencing of at least two additional microbes that produce methane or hydrogen from carbonaceous sources or

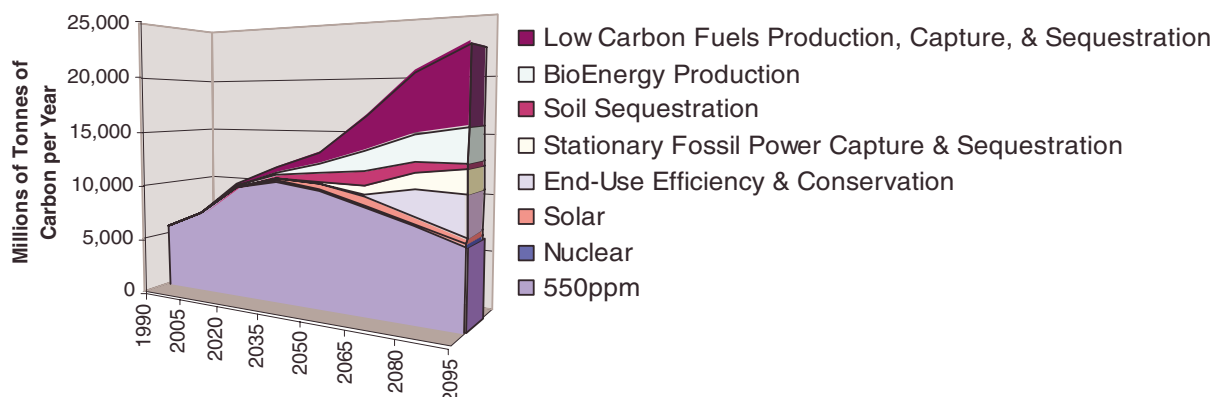


that could be used to sequester carbon. The Department exceeded its goal to determine the DNA sequences of such microbes. Specifically, the Department completed the sequences for three microbes and drafted the sequences of four additional microbes.

Develop future energy technology options

Secure, sustainable sources of energy are vital to the Nation's future. Energy gen-

Carbon Sequestration Technologies Help Fill The Gap



New technologies for solving the greenhouse gas emissions and their estimated contributions over the next century.

erated using a process called "fusion" is expected to be an important constituent of the Nation's energy supply portfolio in the future. Fusion, the process that powers the sun and the stars, occurs when forms of the lightest element - hydrogen - combine in a very hot, ionized gas or "plasma" to form helium. During that process, small amounts of matter are converted into large amounts of energy. Fusion has the potential to be developed into an affordable, virtually inexhaustible, and environmentally acceptable energy source.

The Department committed to undertake discussions with the National Science Foundation during FY 2001 aimed at entering into a Partnership in Basic Plasma Science and Engineering to replace the successful partnership that expired in December 2001. Those discussions are underway and a new agreement will be signed early in FY 2002. The Department also committed to negotiate, during FY 2001, a new research initiative to be part of the long-standing fusion research collaboration between the United States and Japan. These negotiations have been successfully completed.

The largest fusion experiment in the United States is the DIII-D National Fusion Facility. This 15-foot diameter donut-shaped device uses strong magnetic fields to contain the fusion plasma that is heated to about 200 million degrees during experiments. For FY 2001, the Department committed to complete the upgrading of the DIII-D plasma heating capability by 4-megawatts, yielding a total heating capability of 6 megawatts. This enhanced heating capability will permit experiments to be conducted at temperatures more prototypical of those needed for energy production. A technical problem arose during the upgrade that has

delayed the project completion without additional cost until FY 2002.

Understand the impact of energy on health and environment

Decades ago, Congress directed the Department and its predecessor agencies to study and analyze the consequences of human genetic mutations, especially those caused by radiation and the chemical by-products of nuclear energy production.

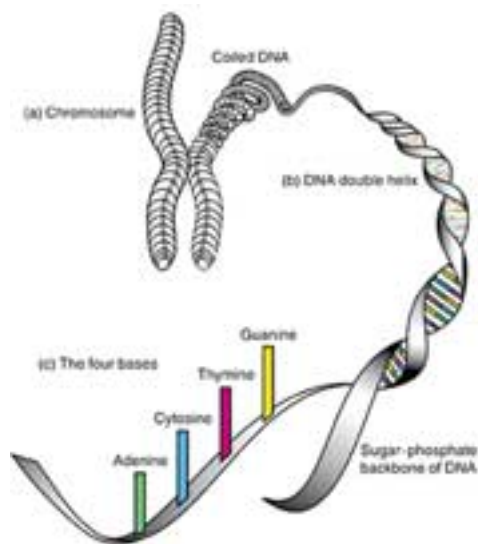
Today, the Department has committed to advancing the understanding of the key building blocks of life through basic research in functional genomics and structural biology. The emphasis in this area is on genetic sequencing, which is the process of decoding the 3 billion parts of our DNA and determining the precise placement of the four "bases" that comprise the entire human genetic code. DNA is sequenced so scientists can hunt for genes. Each of our estimated 30,000 to 100,000 genes is composed of a unique sequence of pairs of the four bases, called base pairs.

More than 99 percent of the human DNA sequence is the same for every one, but the variations in the remaining sequence can have huge implications. For example, earlier research has shown that chromosome 19 is home to the genes that govern lymphoid leukemia, myotonic dystrophy, diabetes mellitus, and susceptibility to polio along with about 2,000 other conditions. A single misplaced base among the 3 billion base pairs may have lethal consequences.

The goal of the Human Genome Project, which is a joint effort of the Department of Energy, National Institute of Health and international scientists, is to locate all the

genes on the human DNA, determine their precise sequence, and learn their function; however, prior to finalization of the sequencing, a high-quality draft provides scientists and medical researchers with information to begin unraveling the mysteries of life and developing new drugs and medical treatments several years before the final sequence is available.

By the end of FY 2001, the Department was to complete the sequencing and submit to public databases 100 million finished and 250 million high-quality draft base pairs of DNA, including both human and mouse. The Department exceeded its FY 2001 DNA sequencing goals. In FY 2001, the Department determined a total of 103.95 million units

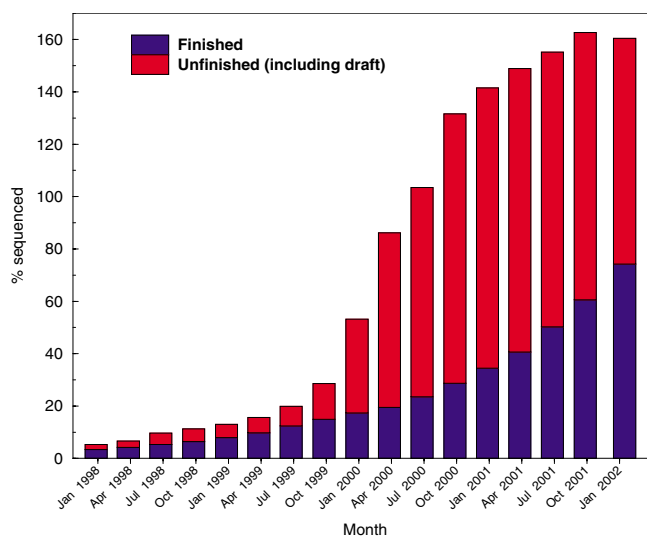


DNA Helix

Basic Genetics Each cell in the human body contains 23 pairs of chromosomes inherited from the individual's parents. (a) Each chromosome is made up of a tightly coiled strand of DNA. (b) Uncoiled the chromosome reveals a double helix shape made up of sugar and phosphate molecules connected by (c) rungs made of chemicals called bases. These four bases: adenine, thymine, guanine and cytosine form interlocking pairs. Their order along the length of the ladder is the DNA sequence.

of the highest quality human and mouse DNA sequence. To date, the Department identified a total of 326.84 million units of high-quality, draft DNA from the human and mouse and 215.5 million units of the highest quality finished human and mouse DNA sequence.

Progress of the Human Genome Project



With respect to the effect energy has on the environment, the Department has established an Atmospheric Radiation Measurement program as a part of our efforts to resolve scientific uncertainties about global climate change. The Atmospheric Radiation Measurement program provides a specific focus on improving the performance of general circulation models used for climate research and prediction. These improved models will help scientists better understand the influences of human activities on the Earth's climate.

During the year, the Department committed to conduct five intensive operations periods on schedule at the Atmospheric Radiation Measurement Southern Plains

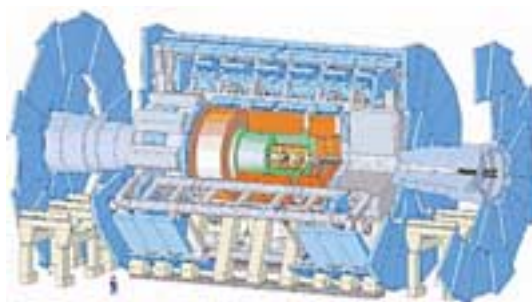
site. In addition, the Department committed to obtain data from a second station on the North Slope of Alaska and make operational the third station in the Tropical Western Pacific on Christmas Island. During FY 2001, seven intensive operation periods were completed at the Southern Plains Site. In addition, data from the North Slope Station is available from the Atmospheric Radiation Measurement Archive. The Tropical Western Pacific site includes three measurement stations, two of which are fully operational. Installation of the third site is underway, and operations began in January 2002.

Maintain U.S. scientific leadership

Working to understand the basic structure of matter is an important element in today's world of science. One project to help scientists conduct research into the basic structure of matter is the Large Hadron Collider, which is due to begin operations in 2006 and is a worldwide collaboration of 150 institutions. The Large Hadron Collider is an accelerator that brings protons and ions into head-on collisions at higher energies than ever achieved. This will allow scientists to penetrate still further into the structure of matter and recreate the conditions prevailing in the early universe, just after the "Big Bang." The Large Hadron Collider will be built near the Franco-Swiss border west of Geneva, at the foot of the Jura mountains in front of the Alps.

For 2001, the Department's goal was to keep on schedule the United States' commitment to the Large Hadron Collider project as reflected in the latest international agreement and corresponding plan. The Department is in charge of building major components for the accelerator and two of the detectors. These detectors are two of the four detectors that will analyze particles generated by collisions at the Large Hadron Collider. As of September 30, 2001, the Department had met its goals for contributing to the Large Hadron Collider. The United States contributions are approximately 60-percent complete.

Another project—the Spallation Neutron Source—is an accelerator-based neutron source being built in Oak Ridge, Tenn., and is designed to provide the most intense pulsed-neutron beams in the world for scientific research and industrial development.



ATLAS is one of four Large Hadron Collider detectors. It is a five story high cylindrical structure with "caps" on its ends. The cylinder is divided into many components for testing different particles. During collision events ATLAS will record millions of points of data for further computer analyses.

As the needs of our high-technology society have advanced, so have our demands for new materials that are stronger, lighter and cheaper, yet perform well under severe conditions. More than ever, major re-

search facilities such as the Spallation Neutron Source are used to understand and engineer materials at the atomic level. Many everyday devices such as credit cards, pocket calculators, compact discs, computer disks, magnetic recording tapes,

shatterproof windshields, adjustable seats, and satellite weather information have all been improved by neutron-scattering research done at facilities preceding the Spallation Neutron Source. Most of these facilities, however, were built decades ago, and although uses and demand have increased, few new facilities have been built. Like other Departmental facilities, the Spallation Neutron Source will be a user facility open to scientists and engineers from universities, industries and government laboratories in the U.S. and foreign countries. The user community has specified the

performance parameters for the Spallation Neutron Source and will design and use its instruments. The Spallation Neutron Source is designed with the future in mind and will be the leading neutron facility for many years to come. The Department committed to meet the cost and schedule milestones for FY 2001. At the end of FY 2001, construction of the Spallation Neutron Source was 33.3 percent complete, versus the scheduled completion of 35.5 percent, and was within cost.

The Department has also committed to operate the National Energy Research Scientific Computing Center and deliver 3.6 teraflops of computing capability, or 3.6 trillion calculations per second, by the end of FY 2001. The Department

has achieved its goal and scientists at universities and national laboratories across the country are now tapping into the power of the world's largest supercomputer dedicated to unclassified research. They have reported important breakthroughs in climate research, materials science and astrophysics. The supercomputer – named “Seaborg” in

honor of Lawrence Berkeley National Laboratory's Nobel Laureate Glenn Seaborg -- is capable of performing 5 teraflops per second. This computer performs the computing power of more than one million desktop per-

sonal computers, all able to work together to tackle some of the world's largest scientific problems. Using the computer, one team studying astrophysics was able to run its model grids, which would have taken several months on smaller computers, in just four days. The new supercomputer not only ran the job faster but also ran up to 20 models at the same time. Other researchers ran a global climate change simulation at the highest spatial resolution ever used, making the model more useful for studying regional climate change.



Artist's conception of the Spallation Neutron Source overlaid on the actual construction site in Oak Ridge, TN.

**Departmental Challenge:
Managing Physical Assets**
(Science Component)

The Department's research and development facilities represent a critical investment in meeting the energy challenges facing our Nation. However, aging and deterioration have resulted in facilities operating well beyond their expected useful life. The Department risks not being able to meet existing mission objectives if the condition and functionality of its facilities are not adequately addressed. Specifically, the Department faces the challenges of maintaining and upgrading its aging research and support facilities to ensure we remain poised to perform world-class science.

During FY 2001, the Department initiated steps to identify modernization needs for

the period of FY 2002 – 2011 at its multiprogram laboratories operated under the Office of Science. Specifically, the Department developed a Strategic Facilities Plan for each laboratory which identifies expected general-purpose infrastructure modernization needs. A summary report based on these plans was issued in April 2001. As a result, an infrastructure budget initiative for FY 2003 was prepared. The Department will complete a five-year program plan for addressing infrastructure modernization needs in FY 2002.

Efforts to address the aging facilities impacting our other mission areas are discussed in our National Nuclear Security and Environmental Quality business line sections of this report.



Environmental Quality

The Department has the monumental task of cleaning up contaminated sites and disposing of radioactive waste. The Department is committed to honoring the government’s obligation to clean up sites that supported the Nation’s production and testing of nuclear weapons and to dispose of nuclear waste residing there.

In addition to cleaning up its own sites, the Department is also responsible for disposing of spent nuclear fuel and high-level radioactive nuclear waste generated by civilian nuclear reactors and nuclear powered Naval vessels. The United States has mounting inventories of spent nuclear fuel from civilian reactors and from atomic energy defense activities, including spent nuclear fuel from nuclear-powered Naval vessels. The national strategy for ultimately disposing of this high-level radioactive waste is geologic disposal.

Environmental Quality Activities

The chart below displays the Department’s major activities and costs associated with its Environmental Quality functions in FY 2001.

Activity	\$ in Millions
Site Cleanup and Defense	
Facilities Closure Projects	2,442
Post 2006 Completion	2,804
Privatization of Cleanup Projects	55
Uranium Programs & Decontamination and Decommissioning	225
Civilian Radioactive Waste Management	187
Nuclear Facilities Management	45
Technology Development	281
Other	86
Reduction to Environmental Liability	(5,909)
Total	216

The results achieved for our goals and key 2001 performance objectives are summarized below.

Cleanup nuclear contamination at the Department's sites

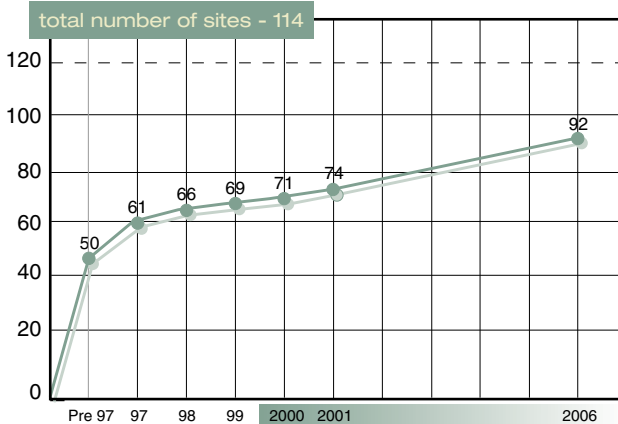
At the beginning of FY 2001, the Department had completed the cleanup of 71 of 114 geographic sites. Our FY 2001 goal was to complete the cleanup of three additional sites - the Argonne

For our Environmental Program, I have two priorities: completing the top-to-bottom review of the entire Environmental Management Program and producing a plan to accelerate the cleanup and closure of all sites where there is no longer a national security mission.

Spencer Abraham
Secretary of Energy

National Laboratory-West Site in Idaho, the Grand Junction Office Site in Colorado, and the General Atomics Site in California. This goal was met, resulting in completion of 74 of 114 geo-

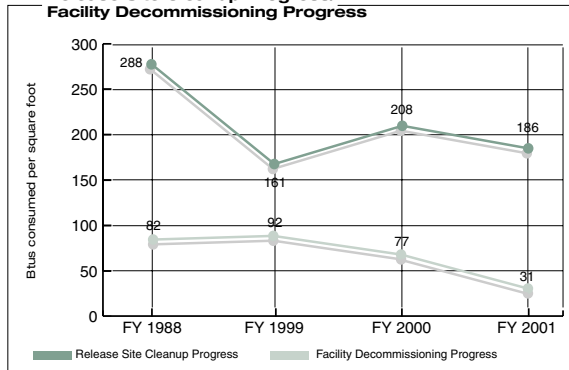
Geographic Site Completions



graphic sites at year's end. It is the Department's goal to complete the cleanup of 92 geographic sites by the end of FY 2006. In addition, the Department continues to make progress in completing cleanup at sites scheduled for completion in the post-2006 time frame.

Interim progress in remediating these geographic sites is measured through the cleanup of portions of the sites designated as release sites and facilities. Cleaning up these areas ultimately leads to the cleanup of the entire geographic site. Release site cleanups are conducted at inactive waste sites or facilities where releases or spills have occurred and contamination has been released into the environment. Release site cleanups represent the completion of all physical cleanup activities. Our goal in FY 2001 was to complete the cleanup of 196 re-

Release Site Cleanup Progress/
Facility Decommissioning Progress



lease sites. During FY 2001, we completed 186 release site cleanups.

Another FY 2001 goal was to complete the decommissioning of 45 facilities. Decommissioning is the final safe dismantling and removal of contamination and contaminated structures. During FY 2001, we completed 31 facility decommissionings.

The FY 2001 goal related to cleaning up our sites was to deactivate 20 facilities. Facility deactivation encompasses activities where the intent is to minimize the risks, hazards, and associated costs at facilities and to make those facilities available for potential re-use or eventual decontamination and decommissioning. During FY 2001, we completed 32 facility deactivations.



Cutaway of transuranic waste containers inside the air support building at Idaho National Engineering and Environmental Laboratory.

**Departmental Challenge:
Environmental Standards and
Stewardship**

The Department faces significant environmental challenges at its facilities due to past operations that left a legacy of unacceptable risk to the environment. These circumstances dictate that continued high priority will be given to evaluating and correcting the impacts of past practices and characterizing and minimizing the possible adverse impacts of present and future activities.

The Department is implementing an aggressive plan to accelerate cleanup of its contaminated sites. The focus of this plan is to clean up as many sites as possible by FY 2006. In addition, the Department will be conducting a top-to-bottom review of the Environmental Management program. This review will

identify opportunities for achieving more and faster cleanup.

The corrective actions associated with this Departmental Challenge are discussed throughout the text in this section.

Types of Waste

Hazardous Waste: Chemicals, explosives, solvents, pesticides, etc.

High-Level Waste: The highly radioactive portion of the waste, primarily liquid waste, resulting from nuclear fuel activities.

Low-Level Waste: Radioactively contaminated rags, filters, tools, equipment and protective clothing

Mixed Low-Level Waste: Containing a wide variety of both radioactive and hazardous components

Transuranic Waste: Waste contaminated with radioactive isotopes that are heavier than uranium, have half-lives greater than 20 years, and are generated primarily during research and development, plutonium recovery, weapons manufacturing, and decontamination and decommissioning.

Dispose of waste generated during past and current activities

The Waste Isolation Pilot Plant became the nation's first operating underground repository for the safe geological disposal of the Department's transuranic, low-level and mixed low-level waste in March 1999. The opening of the Waste Isolation Pilot Plant was a criti-

cal

cal step toward solving the Department's nuclear waste disposal problem with many DOE sites around the country shipping waste there. During FY 2001, the Waste Isolation Pilot Plant received its 200th shipment of transuranic waste.

Our FY 2001 goals for waste disposal were to ship three types of waste to the Waste Isolation Pilot Plant: transuranic waste, mixed low-level waste and low-level waste. Our specific goal for transuranic waste was to ship 2,425 cubic meters. In FY 2001, we nearly met our goal by shipping 1,945 cubic meters of transuranic waste.

In the area of mixed low-level waste, our goal for FY 2001 was to dispose of approximately 8,271 cubic meters of this waste. In FY 2001, the Department nearly met its goal, disposing of 6,988 cubic meters of mixed low-level waste.

In FY 2001, we also had a goal to dispose of approximately 47,908 cubic meters of low-level waste. In FY 2001, we disposed of 64,825 cubic meters of low-level waste, exceeding our goal.

Departmental Challenge:
Managing Physical Assets
(Environmental Quality Component)

The Department began an environmental management Infrastructure Restoration Initiative in 2000 with the recognition that 50-year old facilities and infrastructure would not support the long-term cleanup and multi-program missions at its larger sites. Priorities in the Environmental Management program traditionally have been oriented towards meeting regulatory cleanup commitments and maintaining the sites in a safe posture. As a result, infrastructure improvements and maintenance have been deferred.

In response, the Department's Office of Environmental Management developed Infrastructure Restoration Plans for its three long-term, multi-program sites – Hanford, Savannah River, and Idaho National Engineering and Environmental Laboratory. The plans are tied to current and planned cleanup and other Departmental missions, recognizing current capacities and conditions and the extent of deferred maintenance. The first set of plans was developed in October 2000. Updated plans were developed in May 2001 to identify facility and infrastructure needs and a 10-year profile.

The Office of Environmental Management continues to plan for infrastructure restoration at its three long-term multi-program sites, including updates to its site Infrastructure Restoration Plans. The information developed through this effort is being provided as input to and coordinated with other Departmental facilities and infrastructure cross-cut efforts. In addition, a "top-to-bottom" review of the Environmental Management program is being conducted. The results of the review will provide an additional basis for determining the manner in which the Department will manage its environmental management physical assets.

**Dispose of civilian
nuclear reactor and high-
level radioactive waste**

The Nuclear Waste Policy Act of 1982 directed the Department to investigate sites and design a deep geologic repository for the disposal of our Nation's spent nuclear fuel and high-level radioactive waste. In 1987, Congress directed the Department to focus only on Yucca Mountain, Nevada, to determine whether it was a suitable site for a repository. The

Department has been studying Yucca Mountain, accumulating an enormous amount of scientific and technical information.

In Fiscal Year 2001, our goal was to complete the scientific and technical documents necessary to provide the initial basis for a possible site recommendation to the President. That goal was accom-

The views and the comments of Nevada citizens on this issue are very important. I have received requests advocating many different actions for addressing Yucca Mountain ... My goal is to ensure a fair and impartial process. Moreover, we have taken steps well beyond what the law requires involving the public and beyond what had been planned prior to this Administration's taking office, and we will continue to do so.

Spencer Abraham
Secretary of Energy

plished through the issuance of the Yucca Mountain Science and Engineering Report and the Yucca Mountain Preliminary Site Suitability Evaluation. In keeping with another FY 2001 goal, the Department initiated the public comment period on the Secretary's consideration of the Yucca Mountain site for possible recommendation to the President. Due to the significance of the issues involved and the importance of this decision, the Secretary extended the comment period several times; it ultimately closed on December 14, 2001. It is expected that the submittal of the Site Recommendation to the President, and subsequently to Congress, will be completed in FY 2002.

Departmental Challenge: Nuclear Waste Disposal

Litigation, funding shortfalls, and the need for scientific studies well beyond the levels envisioned when the Nuclear Waste Policy Act was initially passed in 1982, have necessitated several schedule changes, including the delay in the commencement of repository operations until 2010, as announced in 1989. Until a repository opens, high-level radioactive waste and spent nuclear fuel are being stored temporarily at numerous sites around the country.

The Department has completed the scientific and technical work required for a site recommendation in accordance with congressional direction. Assuming the site is determined suitable as a repository, and the President and Congress approve, the Department plans to obtain requisite licenses, construct and, in 2010, begin acceptance of spent nuclear fuel and high-level radioactive wastes at the repository.

In 1998, a U.S. Court of Appeals ruled that the Department had an unconditional obligation to initiate waste acceptance by January 1998; however, lacking a repository or storage facility constructed under the Nuclear Waste Policy Act, the Department is unable to comply with the Court's direction. As a result, several utilities and State regulatory agencies have brought suit against the Department. At the end of FY 2001, 19 utilities had filed lawsuits, alleging damages resulting from the Department's delay in spent fuel acceptance.

Actions the Department has taken to characterize the Yucca Mountain site and resolve this Departmental Challenge were discussed earlier in this section.



Corporate Management

The Department needs a strong corporate management function in order to manage its extensive array of energy programs that are spread over our nationwide complex.

This corporate management function includes the typical administrative, staff, and operational functions associated with an organization, but also encompasses essential cross-cutting activities related to the environment, safety and health of our workforce and members of

the public. These functions provide oversight and internal review of policy issues and budgets, provide leadership on broad Departmental management issues and to represent the Department with other Federal Agencies.

Our corporate management goal is to demonstrate organizational excellence in our environment, safety and health practices and in its management systems to support our programs.

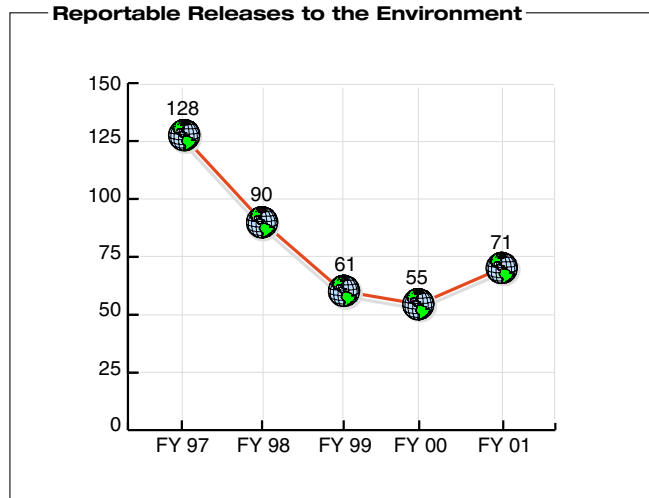
Corporate Management Activities	
The chart below displays the Department's major activities and costs associated with its corporate management functions in FY 2001.	
Activity	\$ in Millions
Health Studies	89
Facility Safety	65
Inspector General	34
Other	19
Total	207

During FY 2001, we have worked to meet the following objectives within our corporate management functions:

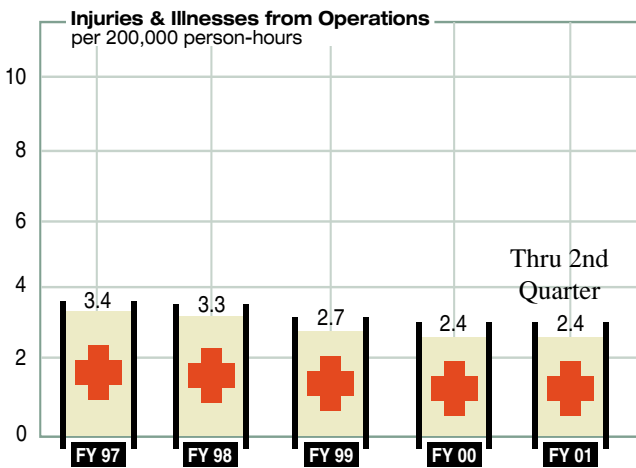
Ensure the safety and health of the Department's work force and the protection of the environment in all Departmental activities

The Department strives to institute a sound environment, safety and health culture and integrate risk-based, outcome oriented environment, safety and health management practices into day-to-day performance. The Department's facility safety program provides technical assistance in the areas of nuclear safety, occupational health and safety, environmental compliance and safeguards and security. These activities provide the basis for formulating safety improvement initiatives and support the Department's

the number of work-related fatalities, serious accidents and environmental releases over the past 5 years. The De-



partment also conducts health studies that include medical surveillance of current and former workers, surveillance of worker injury and illnesses, and public health activities at all sites.



commitment to maintaining a safe and healthy environment to prevent fatalities, minimize serious accidents, and minimize environmental releases at its sites.

Worker safety and health continued to be a priority as the Department reduced

Departmental Challenge: Safety and Health

There are safety issues being encountered at many of the Department's facilities as we work to simultaneously address the consequences of past activities, manage current operations, and prevent future problems. The safety and health of the Department's workers and the public is one of our top priorities, and we are attempting to meet these continuing challenges by implementing a variety of initiatives. To address the consequences of past activities, we are conducting health screening and compensation programs for workers with work-related illnesses. To manage current operations and prevent future problems we are implementing new safety programs and conducting on-site evaluations to monitor con-

duct of operations and compliance with environment, safety and health requirements.

The Department is continuing to take actions that are key to executing our safety and health strategy. In FY 2000, the Department completed the Nuclear Safety Standards Upgrade Project to assure that nuclear activities are accomplished safely. The Department's FY 2001 goal was to implement Integrated Safety Management (ISM) at all of its sites. Prior to FY 2001, all sites but two had completed the implementation of ISM. The Department did not meet its ISM goal in FY 2001. Only one additional site completed ISM implementation during the year, and safety concerns identified at the Oak Ridge Operations Office caused its previously implemented ISM system and that of its contractor to be revoked. To address these recent safety concerns, an independent assessment will be conducted in FY 2002 to determine corrective actions needed.

In addition, operation of NNSA facilities have been impacted by the hold on activities to restart the Y-12 enriched uranium reduction process due to unresolved safety issues. The Department also continued to address worker safety issues at its Paducah site; however, completion of the actions has slipped to FY 2002 due to regulatory delays and technical approach changes. Other efforts to improve the safety and health of the Department's workers during FY 2001 included establishing a beryllium registry to operate as a surveillance program in monitoring worker exposure.

In FY 2001, six on-site safety management evaluations were conducted to monitor the effectiveness of our safety prac-

tices. Additionally, the Department has completed substantive actions correcting the vulnerabilities that were previously identified with our storage of spent nuclear fuel and will conduct monitoring to ensure the timely resolution of the remaining actions.

Final correction of this Departmental Challenge is expected in FY 2002 with the implementation of ISM at all sites and the correction of safety issues at Oak Ridge Operations Office and the Paducah site.

Manage human resources and diversity initiatives

Effective management of human resources is critical to the achievement of the Department's missions. In recognition of this, the Secretary is initiating management processes that are designed to attract and retain the highest-caliber people. Intrinsic to these processes is the establishment of a culture where merit determines promotion and hiring, and diversity is viewed as a key to recruiting and retaining the best people.

For FY 2001, the Department's goal was to improve human capital management by initiating comprehensive human resources strategies such as implementing milestones in the Corporate Training Plan and increasing the electronic transfer documents in the Department's personnel system to 15 percent. The Department met its human capital management performance target by completing all scheduled milestones in the Corporate Training Plan and by increasing the electronic transfer of personnel documents in the system to more than 49 percent.

Departmental Challenge: Human Capital Management

The Department is highly dependent on its Federal workforce for its mission accomplishment. Since 1995, the Department has experienced a 26-percent reduction in the workforce. 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.

Recognizing the situation, the Department has undertaken the task of developing a comprehensive and integrated human capital management strategy. This strategy began with development of a workforce analysis to serve as a baseline of workforce demographics for future change. A Human Capital Summit in July 2001 brought together key leadership of the Department to identify areas of concern and to begin the identification of possible solutions. In addition, in September 2001, the Department submitted a 5-Year Workforce Restructuring Plan with the FY 2003 budget submission to the Office of Management and Budget. This Plan and other initiatives will serve as the blueprint for future improvements in Human Capital Management.

The most important part of achieving excellence is acquiring and retaining the best people and the best managers.

Spencer Abraham
Secretary of Energy

In FY 2002, the Department is implementing a number of human capital management initiatives including: implementing a new Senior Executive Service performance management system; implementing a wide range of diversity initiatives; expanding use of automated human resources systems; and improving leadership and intern programs. In addition, the Office of Inspector General is taking steps to address a long-standing problem regarding inadequate audit resources to review the activities of the Department's major contractors. Other long-term actions include implementing a workforce planning program, including succession planning, and conducting follow-on actions to assess the effectiveness of the Department's efforts.

Departmental Challenge: Performance Management

The Department's performance management processes need improvement to ensure that our programmatic activities are results driven and focused on achieving outcome-oriented goals. The Inspector General, the General Accounting Office, and internal Department of Energy management assessments have identified deficiencies in the Department's processes. These deficiencies include performance measures that are not quantifiable, performance measures that do not support key goals, and underlying processes that are not results oriented.

The President's FY 2002 Management Agenda underscores his commitment and

outlines his plan to provide a results-oriented management process for the federal government. A primary focus of the President's Plan is that funding allocations are based on the achievement of goals. Under-performing programs would have to demonstrate evidence of attaining meaningful goals or face reduced funding or elimination. This Presidential initiative further underscores the need for the Department to improve its performance management practices and successfully demonstrate the results it has achieved.

To address the deficiencies in its performance management, in FY 2001, the Department established an organization with responsibility for program analysis and evaluation functions. This office will work with program managers to establish outcome-oriented, measurable performance measures which link to the budget and the Administration's priorities. These measures will be used to evaluate program performance, flow down to the field, and become incorporated into executive performance appraisals. Operational Program Reviews are intended to ensure that performance measures are used to manage programs and to verify that reported results were actually achieved within the budget limits. These independent reviews will begin in FY 2002. The functions of the Department's new program analysis and evaluation function and Operational Program Review process are to address deficiencies in our current performance management processes.

Manage financial and physical assets

The Department's objective is to manage its financial resources and physical assets in a manner that ensures pub-

lic confidence. This requires the effective management of the Department's finances, contracts, projects, facilities and materials.

The auditors' unqualified opinion on the Department's financial statements underscores the emphasis the Department placed on financial management. Due to this emphasis, the Department has embarked on a major initiative to develop a new Business Management Information System, Phoenix, with special emphasis on financial management. The Department's FY 2001 goal was to complete a design for the Phoenix. Implementation of a new business management system is a dynamic process and the Department was below expectation in meeting its goal to complete the new system design. However, the Department completed the design of the new business management information system in early FY 2002.

Although the Department's emphasis on financial management has been effective, improvements are necessary in other areas, described below.

Departmental Challenge: Project Management

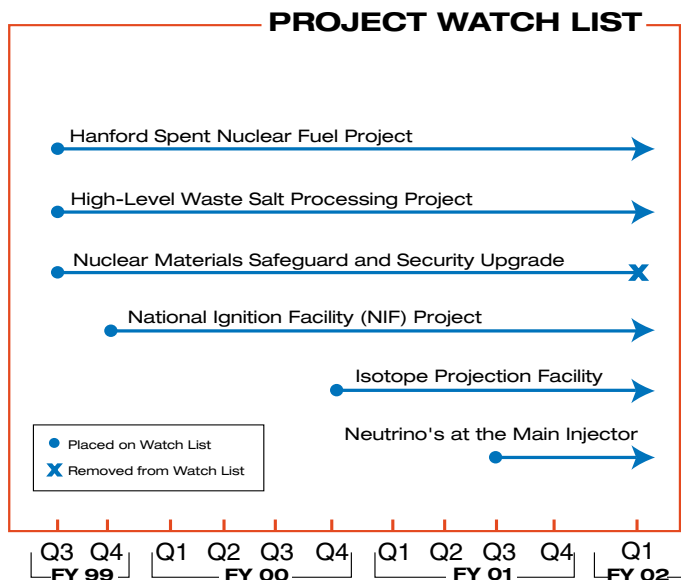
(Corporate Management Component)

Cost overruns, schedule slippages, and other project management problems have adversely affected the credibility in the Department's ability to build new facilities or upgrade existing systems. These issues have led to concerns about the Department's construction project management structure and practices. To identify the root causes of project management deficiencies, an expert panel formed under the National Research Council of the National Academy of Sci-

ences assessed Department-wide policies and procedures. The Department is now implementing the National Research Council's recommendations. Spearheading the Department's improvement efforts is the Office of Management, Budget and Evaluation and its Office of Engineering and Construction Management (OECM) formed in 1999 and Program Analysis and Evaluation formed in 2001. OECM is responsible for driving change in the Department's project management systems and for providing corporate oversight. Project management reforms implemented to date include: establishing a

reporting system to track project performance, conducting a benchmark study of the Department's projects to determine the factors for their success, implementing a Department-wide Value Engineering Program, and establishing a risk-based assessment process to review and approve projects in their conceptual design phase. Final corporate oversight improvement actions are anticipated in FY 2003 with the implementation of a Departmental Project Manager Career Development Program.

Information related to the Project Management Departmental Challenge is also located in the National Nuclear Security business line discussion.



"watch list" which subjects specific projects to stringent review and require a remediation strategy; implementing requirements for External Independent Reviews; and issuing Department-wide policy and operating procedures for project management which include an earned value management system.

In FY 2002, the Department plans to continue strengthening its corporate oversight of project management by implementing a new project assessment and

In the area of contract management, the Department's goal of converting to a new performance-based contracting approach is becoming common practice as evidenced by our FY 2001 goals and actions. One of the Department's goals for FY 2001 was to convert all management and operating contracts awarded during the year to performance-based contracts. The Department met this goal, as all management

and operating contracts awarded during the year were performance based, as planned. While the Department was successful in meeting its current contract management goals, we continue to address other challenges in this area.

Departmental Challenge: Contract Management

The majority of the Department's programs are accomplished through contracts, particularly those which provide

management and operating capabilities for running the Department's facilities. The Department has been criticized for not effectively managing these contracts. Specifically, the criticism has focused on such issues as the absence of competition in contracting for major facility management contracts; the general indemnification of contractors for the cost of all performance failures and liabilities under a contract; the lack of contractual features to ensure contractor performance accountability; the absence of a strong focus on environmental, safety, and health concerns; and weak controls over such areas as records management, overtime, and litigation. Although these are being addressed, continuing issues related to contractor performance and accountability significantly reduce the credibility of the Department's contract management practices.

To address these issues, the Department has drastically changed its contract management policies and practices with respect to its major facility contracts, as well as the overall management of its procurement system. The Department has changed its policies with respect to competing management and operating contracts, and revised its regulations to hold contractors financially accountable for certain fines and penalties, property losses and litigation costs. Fixed-fee management contracts with ill-defined performance expectations have been eliminated, and performance-based management contracts with defined performance objectives and related, at risk, financial incentives have been created. During FY 2001 we issued final rules overhauling regulations for management and operating contractors and adopting federal acquisition regulations; strengthened management's role in adopting and as-

sessing contractor performance management; and completed the competition cycle for management and operating contracts.

We intend to continue strengthening the Department's contracting practices in FY 2002 through actions such as reviewing contractor performance incentives, benchmarking major contracts of other agencies using performance-based contracting, and developing a model solicitation package for use in major contract competitions.

Manage information technology systems

Information technology systems are an essential component of the Department's day-to-day operations and are vital to our programmatic and administrative functions. However, we need to improve our utilization of these resources to maximize effectiveness and reduce duplication.

Departmental Challenge: Information Technology Management

The Department has experienced problems in fully implementing the Clinger-Cohen Act of 1996 and in government-wide information technology management requirements. In summary, these require establishment of Federal Agency Chief Information Officers (CIOs) with a broad set of responsibilities for maximizing agency mission accomplishment through improved and cost-effective use of information technology.

The Inspector General, the General Accounting Office and the Office of Management and Budget have identified a number of specific problems with the Department's approach to information

technology management and implementation of the Act requirements. Specific requirements that the Department has not implemented include establishing an information technology architecture, closely monitoring policy implementation efforts, and acquiring information technology related assets in an effective and efficient manner. The Department has made progress in addressing these problems and implementing its information technology responsibilities.

During FY 2001, the Secretary changed the Department's management structure, making the CIO a direct report and primary management official for Department-wide information management policy development. A CIO Executive Council was also established to provide management direction for Departmental information technology activities. The Department also requested additional funding in FY 2002 to support modernization of corporate systems, provided

the CIO with a stronger role in the budget formulation and approval process, and established a Department-wide software contract providing cost avoidance opportunities. In addition, information technology capital planning processes were incorporated in Departmental directives that will serve as the basis for new policy.

The Department is also directing organizations to stop work on duplicate system applications, developing a baseline that identifies an inventory of the Department's applications and systems, developing internal policy to establish explicit requirements for information technology management and developing performance measures associated with Clinger-Cohen Act implementation. These actions, scheduled to be completed in FY 2003, will posture the Department for the successful implementation of information technology management requirements.

Management’s Response to Audit Reports

The Department responds to audit reports by evaluating the recommendations they contain, formally responding to the Inspector General (IG), and implementing agreed-upon corrective actions. In some instances, we are able to take correction action immediately, and in others, action plans with long-term milestones are developed and implemented. This 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. The Inspector General Act, as amended, requires that we report on the status of our

progress in implementing these corrective actions semiannually. We are fulfilling that requirement by providing that information for the entire fiscal year in this section.

During Fiscal Year 2001, the Department took final action on 49 IG reports with the agreed-upon actions that were open after one year, and had taken final action on four other IG operational, financial and pre-award audit reports. At the end of the period, 96 reports awaited final action. Some of these reports contain recommendations to make changes to our operations in order to save funds that could be reapplied elsewhere in the future. Also during this period, there were no management decisions on three Inspector General contract audit reports. At the end of the fiscal year, there were three contract audit reports pending final action.

Status of Final Action on IG Audit Reports for FY 2001

This table provides more detail on the audit reports with open actions and the dollar value of recommendations that funds be “put to better use” that were agreed to by management.

Audit Reports	Number of Reports	Agreed-upon Funds
◆ Pending final action at the beginning of the period	100	\$175,653,846
◆ With actions agreed upon during the period	49	\$ 2,727,323
◆ Total pending final action	149	\$178,381,169
◆ Achieving final action during the period	53	\$ 298,957
◆ Requiring final action at the end of the period	96	\$178,082,212

GAO AUDIT REPORTS

The U.S. General Accounting Office (GAO) audits are a major component of the Department’s audit follow-up program. During fiscal year 2001, we received 55 audit start notifications and were issued 12 draft and 25 final GAO audit reports. Of the 25 final reports, 17 required corrective actions, and eight did not because the reports did not include actions to be taken by the Department. In addition, we completed agreed upon corrective actions on six audit reports. At the end of FY 2001, there were seven GAO reports with agreed upon actions open after one year.

Inspector General's Report on Management Challenges

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

The following are the most serious challenge areas that the Department will need to address in 2002 and beyond:

- Contract Administration
- Energy Supply
- Environmental Standards and Stewardship
- Human Capital
- Information Technology
- Infrastructure and Asset Management
- Performance Management
- Research and Development Investment
- Security and Safety
- Stockpile Stewardship

In large measure, this list of challenges parallels the lists of years past. While some challenges are amenable to near-term resolution, others can only be addressed by a concerted, continuing effort, resulting in progress over a long period of time. As such, the Office of Inspector General would expect to con-

tinue seeing these challenge areas appear in future years. For example, even under the most optimistic assumptions, the effort to remediate the residual effects of the nuclear weapons program (Environmental Standards and Stewardship) will require decades to complete. It is unrealistic to anticipate that a program of this magnitude can be removed in the near term from a list of major Departmental Challenges. Conversely, areas such as Security and Safety can, in our view, benefit from near term aggressive management action.

Management has initiated a number of positive actions to address some of the management challenges. For example, during the past year the Administration and the Department produced a new National Energy Policy. This Policy, published in May 2001, is designed to ensure that there are adequate energy resources to meet the needs of U.S. citizens. To its credit, the Department has initiated similar actions to address aspects of the other challenge areas. The Department also develops its own inventory of Departmental Challenges in accordance with the Federal Managers' Financial Integrity Act. This has resulted in a list of challenges that is not significantly different from that developed by the Office of Inspector General.

Consistent with the requirements of the Government Performance and Results Act, the Department should aggressively work to develop and implement performance goals and measures that directly address each of the management challenges identified. The Office of Inspector General will continue to evaluate the Department's performance in addressing these and related issues and looks forward to working with the Department's senior staff on these matters.

Message from the Chief Financial Officer

I am pleased to present the Department of Energy's consolidated financial statements for FY 2001. KPMG LLP, an independent public accounting firm working through the Department's Inspector General, has audited these statements. I am proud to report that our financial statements have received an unqualified "clean" opinion. Achieving an unqualified opinion validates our efforts to ensure that the financial statements fairly present the Department's financial position. These statements were prepared in accordance with standards developed by the Federal Accounting Standards Advisory Board, as well as the requirements of the Office of Management and Budget and the Government Management Reform Act of 1994.



The Department has also completed an evaluation of its financial management system using guidance issued by the Office of Management and Budget. This evaluation, which uncovered no material nonconformance, indicated that our financial management system is in general conformance with governmental financial system requirements. Although our existing system meets current requirements, we recognize the future need for a new, up-to-date system that will take advantage of the improved capabilities of new technology. We are developing such a system that will provide state-of-the-art capabilities and greater flexibility to meet our customers' evolving needs. We expect initial operations to begin in fiscal year 2003.

We are also working to improve other areas in financial management. Our new financial information system, when fully implemented, will provide the capability to integrate financial and performance information, thereby improving its usefulness to managers. Further, we are addressing concerns identified as reportable conditions by the auditors when they conducted their review of the Department's financial statements. These reportable conditions concern the quality of performance measures in the Department, access controls for unclassified information systems, cost estimates associated with the environmental remediation of the Department's active facilities, and financial management at the Western Area Power Administration. Although not material weaknesses, these issues require our action and, when corrected, will result in improved financial management at the Department.

My goal is to provide exemplary financial stewardship for the American people, the Congress, the Secretary, and the President. I believe you will find the Department's Performance and Accountability Report to be an informative and useful indicator of the actions we are taking to achieve that goal.

A handwritten signature in black ink that reads "Bruce M. Carnes". The signature is written in a cursive, flowing style.

Bruce M. Carnes
Chief Financial Officer

Financial Highlights

The following financial highlights section is intended to provide a concise description of the Department of Energy's financial position and the results of financial performance measures.

The Department prepares consolidated financial statements that include a Balance Sheet, a Statement of Net Cost, a State-

ment of Changes in Net Position, a Statement of Budgetary Resources, a Statement of Financing, and a Statement of Custodial Activity. Overall, these statements summarize the financial activity and financial position of the Department. The following table highly summarizes these statements and provides a quick overview of significant balances:

Assets	Dollars (in Billions)	
	09/30/01	09/30/00
Fund Balances with Treasury	\$12.7	\$11.5
Primarily appropriated funds to pay current liabilities and finance authorized purchase commitments.		
Investments	\$16.0	\$13.0
Primarily monies managed for the Nuclear Waste Fund and the Uranium Enrichment Decontamination and Decommissioning Fund. Fees paid by owners and generators of spent nuclear fuel and high-level radioactive waste, and fees collected from domestic utilities are deposited in the respective funds to pay current program costs, with any excess funds invested in Treasury securities.		
Accounts Receivable	\$ 5.2	\$ 5.1
<i>Intragovernmental</i> - Primarily for reimbursable work performed for other Federal agencies.		
<i>Governmental</i> - Primarily for Nuclear Waste Fund and Uranium Enrichment Decontamination and Decommissioning Fund fees.		
Inventory Materials	\$36.8	\$37.8
Crude oil at the Strategic Petroleum Reserve, Nuclear Materials and Other Inventory		
General Property, Plant and Equipment	\$19.5	\$18.6
Includes over 126 million square feet of buildings located on over 2.6 million acres of land.		
Regulatory Assets	\$12.1	\$12.3
Associated with the Department's power generation and management responsibilities. These assets represent the Bonneville Power Administration's (BPA) right to future revenues generated from non-Federal power generator projects in return for BPA's payment of debt issued to complete these projects.		
Other Assets	\$ 4.3	\$ 2.6
Total Assets	\$106.6	\$100.9

Liabilities	Dollars (in Billions)	
	09/30/01	09/30/00
Environmental Liabilities Represents the Department's obligation to correct the environmental damage incurred throughout the DOE complex while researching, producing, and testing nuclear weapons.	\$238.3	\$234.3
Debt and Appropriated Capital Owed to Treasury Represent amounts which the Department has obligations to pay for borrowing from Treasury, refinanced appropriations, and non-federal projects.	\$17.5	\$17.1
Accounts Payable <i>Intragovernmental</i> - Includes liability for allocation transfers, accrued expenses and interest <i>Governmental</i> - Includes contract holdbacks and accrued expenses.	\$3.8	\$3.4
Pensions and Other Actuarial Liabilities Represent amounts which the Department has obligations to pay for specified benefits to contractor employees having approved defined benefit pension plans and post-retirement benefits other than pensions.	\$7.6	\$7.1
Other Liabilities, Including Deferred Revenues and Contingencies Primarily, represents the amount of Nuclear Waste Fund revenues that exceed the Nuclear Waste Fund expenses and DOE's unfunded environment, safety and health liability. Nuclear Waste Fund revenues are accrued based on fees assessed against owners and generators of high-level radioactive waste and spent nuclear fuel and are recognized as costs are incurred for Nuclear Waste Fund activities. The environment, safety and health liability represents those activities necessary to bring facilities and operations into compliance with existing laws and regulations.	\$21.6	\$21.8
TOTAL LIABILITIES	\$288.8	\$283.7
BEGINNING NET POSITION	\$(182.8)	\$(178.2)
Net Costs of Programs		
	<u>2001</u>	<u>2000</u>
NNSA and Other National Security	\$6.0	\$5.8
Energy Resources	\$2.1	\$1.5
Science & Technology	\$2.8	\$2.7
Environmental Quality	\$0.2	\$1.8
Corporate Management & Other Programs	\$0.2	\$0.2
Total Business Line Costs	\$11.3	\$12.0
Costs Not Assigned to Programs	\$12.0	\$11.2
Financing Sources Represents appropriations used, taxes, imputed financing, and transfers.	\$22.0	\$18.2
Other Adjustments/Changes to Results of Operations Represents prior period adjustments, change in Nuclear Waste Fund deferred revenues, and decreases in unexpended appropriations.	\$1.9	\$0.4
ENDING NET POSITION	\$(182.2)	\$(182.8)
TOTAL LIABILITIES AND NET POSITION	\$106.6	\$100.9

More detailed explanations of these and other balances on the statements are included in the Notes to the Financial Statements.

Financial Performance Measures

Prompt Payment

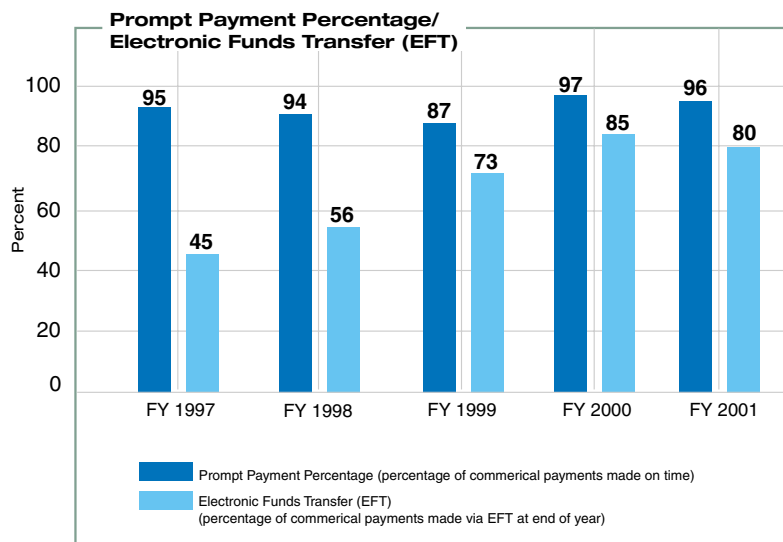
The Prompt Payment Act requires Federal agencies to pay commercial obligations within certain time periods and to pay interest penalties when payments are late. The Department's FY 2001 on-time prompt payment percentage is 96 percent, indicating our continued strong performance.

In FY 1999 the Department experienced a decline due primarily to a new accounting system being installed at the Western Area Power Administration. Corrective actions were successful and the Department is performing well in paying our commitments in a timely manner.

Electronic Funds Transfer

The Debt Collection Improvement Act of 1996 requires the use of Electronic Funds Transfer (EFT) for all Federal payments made after January 1, 1999, with limited exceptions. The Department's percentage of commercial payments made by EFT in FY 2001 is 80 percent.

According to a Treasury Financial Management Service report, 58 percent of all Treasury Disbursed Vendor Payments in FY 2001 were accomplished electronically. The Department continues a strong performance in this area.



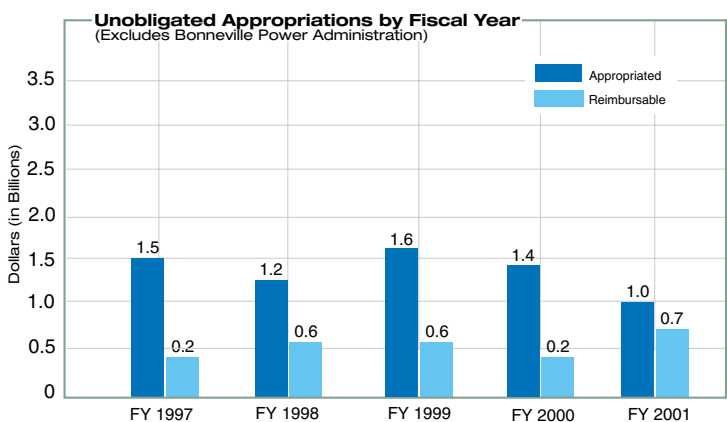
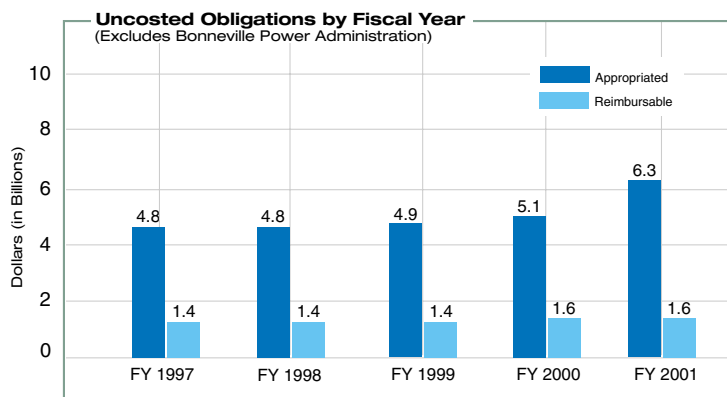
Balances of Uncosted Obligations and Unobligated Appropriations

Significant balances of uncosted obligations occur when a Federal agency contracts out much of its appropriated funds, as does the Department. These uncosted balances represent the portion of contract obligations related to goods and services which have not yet been received. While balances of uncosted obligations are natural and acceptable, it is incumbent upon Federal agencies to evaluate these balances to ensure that the levels maintained are appropriate and consistent with good financial management.

In FY 1993, uncosted balances for the Department had reached \$10.8 billion. Since that time, the Department has taken aggressive actions to understand what drives uncosted obligation balances, and more actively consider these resources when determining budget estimates. By FY 1996, we reduced our uncosted balance to less than half the FY 1993 level and we have continued to maintain that balance at a level consistent with sound financial management.

To ensure that our balances remain appropriate, the Department developed a comprehensive methodology for analyzing uncosted balances. This methodology, which follows comparable principles to those established by the General Accounting Office, applies percentage thresholds for specific types of

financial/contractual arrangements. This allows the Department to evaluate its overall performance based on an analysis of the variance between the calculated thresholds and actual balances. Based on these analyses, we believe any additional reductions in uncosted balances will be relatively minor, barring any extraordinary funding issues. However, we do expect on-going fluctuations of these



(NOTE: Charts exclude data for the Bonneville Power Administration, which is treated as a Government Corporation.)

balances from year to year based on natural business cycles, as is the case in FY 2001.

The Department's uncosted balance increased by \$1.2 billion in FY 2001. The major driver for this upward movement is a marked increase in funding for major construction projects during the fiscal year. While funds are appropriately obligated, these construction projects are multi-year in nature and typically incur fewer outlays in the earlier construction phases. Thus, higher than normal uncosted balances are expected in these

circumstances. Another major driver for the increase in the FY 2001 balance is increased funding for the Cerro Grande fire recovery activities which is a long-term effort to assist in the reconstruction of the Los Alamos area after devastating forest fires swept through the area.

In addition to managing uncosted balances, the Department has charted progress in reducing unobligated appropriations balances to ensure that any excess uncosted balances are being eliminated rather than recategorized.

Financial Statements and Audit Report



Consolidated 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 and the Government Management Reform Act of 1994.

While the statements have been prepared from the Department's books and records in accordance with the formats prescribed by the Office of Management and Budget, the statements are different from the financial reports used to monitor and control budgetary resources which are prepared from the same books and records.

These statements should be read with the understanding that the Department is a component of the United States Government, that liabilities not covered by budgetary resources cannot be liquidated without the enactment of an appropriation by Congress, and that payment of all liabilities other than for contracts can be abrogated by the Federal Government.

Consolidated Balance Sheets

As of September 30, 2001 and 2000

(\$ in millions)

	2001	2000
ASSETS ^(Note 2)		
Intragovernmental		
Fund Balance with Treasury ^(Note 3)	\$ 12,686	\$ 11,474
Investments, Net ^(Note 4)	15,812	12,748
Accounts Receivable, Net ^(Note 5)	557	540
Regulatory Assets ^(Note 6)	5,236	5,228
Other	3	6
Total Intragovernmental	\$ 34,294	\$ 29,996
Investments, Net ^(Note 4)	222	263
Accounts Receivable, Net ^(Note 5)	4,633	4,592
Inventory, Net ^(Note 7)		
Strategic Petroleum and Northeast Home Heating Oil Reserves	14,635	15,307
Nuclear Materials	21,693	22,013
Other	478	481
General Property, Plant, and Equipment, Net ^(Note 8)	19,427	18,538
Regulatory Assets ^(Note 6)	6,906	7,105
Other ^(Note 9)	4,298	2,617
Total Assets	<u>\$ 106,586</u>	<u>\$ 100,912</u>
LIABILITIES ^(Note 10)		
Intragovernmental		
Accounts Payable	\$ 119	\$ 133
Debt ^(Note 11)	8,473	8,628
Appropriated Capital Owed to Treasury ^(Note 12)	2,747	2,004
Deferred Revenues ^(Note 13)	39	26
Other ^(Note 14)	256	202
Total Intragovernmental	\$ 11,634	\$ 10,993
Accounts Payable	3,682	3,287
Debt ^(Note 11)	6,241	6,488
Deferred Revenues ^(Note 13)	16,533	14,498
Environmental Liabilities ^(Note 15)	238,349	234,267
Pension and Other Actuarial Liabilities ^(Note 16)	7,624	7,166
Other ^(Note 14)	2,765	5,004
Contingencies ^(Note 17)	2,028	2,030
Total Liabilities	\$ 288,856	\$ 283,733
NET POSITION ^(Note 25)		
Unexpended Appropriations	7,335	6,179
Cumulative Results of Operations	(189,605)	(189,000)
Total Net Position	<u>\$ (182,270)</u>	<u>\$ (182,821)</u>
Total Liabilities and Net Position	<u>\$ 106,586</u>	<u>\$ 100,912</u>

The accompanying notes are an integral part of these statements

Consolidated Statements of Net Cost
For the Years Ended September 30, 2001 and 2000
(\$ in millions)

	2001	2000
Costs ^(Note 18)		
National Nuclear Security Activities ^(Note 19)		
Program Costs	\$ 6,041	\$ 5,820
Earned Revenues	-	-
Net Cost of National Nuclear Security Activities	<u>\$ 6,041</u>	<u>\$ 5,820</u>
Energy Resources ^(Note 20)		
Program Costs	\$ 7,033	\$ 5,325
Earned Revenues	(4,882)	(3,809)
Net Cost of Energy Resources Programs	<u>\$ 2,151</u>	<u>\$ 1,516</u>
Science ^(Note 21)		
Program Costs	\$ 2,766	\$ 2,673
Earned Revenues	(8)	(7)
Net Cost of Science Programs	<u>\$ 2,758</u>	<u>\$ 2,666</u>
Environmental Quality ^(Note 22)		
Program Costs	\$ 603	\$ 2,269
Earned Revenues	(387)	(459)
Net Cost of Environmental Quality Programs	<u>\$ 216</u>	<u>\$ 1,810</u>
Other Programs ^(Note 23)		
Program Costs	\$ 2,304	\$ 2,414
Earned Revenues	(2,097)	(2,184)
Net Cost of Other Programs	<u>\$ 207</u>	<u>\$ 230</u>
Costs Not Assigned to Programs ^(Note 24)		
Net Cost of Operations	<u>\$ 11,954</u>	<u>\$ 11,136</u>
	<u>\$ 23,327</u>	<u>\$ 23,178</u>

The accompanying notes are an integral part of these statements

Consolidated Statements of Changes in Net Position

For the Years Ended September 30, 2001 and 2000

(\$ in millions)

	2001	2000
Net Cost of Operations	\$ (23,327)	\$ (23,178)
Financing Sources (Other than Exchange Revenues)		
Appropriations Used	18,724	17,571
Other Non-Exchange Revenues	66	10
Imputed Financing	1,670	72
Transfers-in ^(Note 27)	9	568
Transfers-out ^(Note 27)	1,529	(47)
Net Results of Operations	\$ (1,329)	\$ (5,004)
Prior Period Adjustments ^(Note 25)	29	109
Net Change in Cumulative Results of Operations	\$ (1,300)	\$ (4,895)
Unrealized Holding Gain on Investments	695	300
Increase in Unexpended Appropriations	1,156	10
Change in Net Position	\$ 551	\$ (4,585)
Net Position - Beginning of Period	(182,821)	(178,236)
Net Position - End of Period	\$ (182,270)	\$ (182,821)

Consolidated Statements of Budgetary Resources

For the Years Ended September 30, 2001 and 2000

(\$ in millions)

	2001	2000
BUDGETARY RESOURCES ^(Note 26)		
Budgetary Authority	\$ 20,444	\$ 18,136
Unobligated Balances - Beginning of Period, Net of Transfers	3,658	2,864
Spending Authority from Offsetting Collections	7,093	5,820
Actual Recoveries of Prior Year Obligations	25	61
Authority Not Available	(667)	(564)
Total Budgetary Resources	\$ 30,553	\$ 26,317
STATUS OF BUDGETARY RESOURCES		
Obligations Incurred	\$ 27,870	\$ 23,665
Unobligated Balances Available	1,777	1,899
Unobligated Balances Not Available	906	753
Total Status of Budgetary Resources	\$ 30,553	\$ 26,317
OUTLAYS		
Obligations Incurred	\$ 27,870	\$ 23,665
Less Spending Authority from Offsetting Collections and Actual Recoveries of Prior Year Obligations	(7,118)	(5,881)
Obligated Balance, Net - Beginning of Period	8,619	8,219
Less Obligated Balance, Net - End of Period	(10,466)	(8,619)
Total Outlays	\$ 18,905	\$ 17,384

The accompanying notes are an integral part of these statements

Consolidated Statements of Financing

For the Years Ended September 30, 2001 and 2000

(\$ in millions)

	2001	2000
OBLIGATIONS AND NONBUDGETARY RESOURCES		
Obligations Incurred	\$ 27,870	\$ 23,665
Less Spending Authority from Offsetting Collections and Adjustments		
Earned Reimbursements		
Collected	(7,052)	(5,408)
Receivable from Federal Sources	(43)	(146)
Change in Unfilled Orders (Decreases) Increases	(2)	(252)
Recoveries of Prior-Year Obligations	(25)	(61)
Financing Imputed for Cost Subsidies	1,670	72
Transfers, Net ^(Note 27)	1,538	521
Exchange Revenues Not In the Budget	(667)	(791)
Other	(3)	(3)
Total Obligations as Adjusted, and Nonbudgetary Resources	<u>\$ 23,286</u>	<u>\$ 17,597</u>
RESOURCES THAT DO NOT FUND NET COST OF OPERATIONS		
Change in Amount of Goods, Services, and Benefits Ordered but Not Yet Received or Provided	\$ (1,354)	\$ (123)
Costs Capitalized on the Balance Sheet		
General Property, Plant, and Equipment	(2,398)	(1,962)
Purchases of Inventory	(323)	(987)
Financing Sources That Fund Costs of Prior Periods	(5,908)	(5,932)
Other	(1,980)	62
Total Resources that Do Not Fund Net Cost of Operations	<u>\$ (11,963)</u>	<u>\$ (8,942)</u>
COSTS THAT DO NOT REQUIRE RESOURCES		
Depreciation and Amortization	\$ 1,759	\$ 1,325
Revaluation of Assets and Liabilities	(382)	206
Loss on Disposition of Assets	6	11
Other	419	388
Total Costs that Do Not Require Resources	<u>\$ 1,802</u>	<u>\$ 1,930</u>
FINANCING SOURCES YET TO BE PROVIDED ^(Note 28)	<u>\$ 10,202</u>	<u>\$ 12,593</u>
NET COST OF OPERATIONS	<u><u>\$ 23,327</u></u>	<u><u>\$ 23,178</u></u>

The accompanying notes are an integral part of these statements

Consolidated Statements of Custodial Activities

For the Years Ended September 30, 2001 and 2000

(\$ in millions)

	2001	2000
SOURCES OF COLLECTIONS <small>(Note 29)</small>		
Cash Collections		
Interest	\$ 14	\$ 28
Penalties and Fines	3	37
Other	408	379
Net Collections	\$ 425	\$ 444
Accrual Adjustment	10	(38)
Total Revenue	\$ 435	\$ 406
DISPOSITION OF REVENUE		
Transferred to Others		
Department of the Treasury	(258)	(287)
Others	(152)	(123)
Increase (Decrease) in Amounts to be Transferred	14	4
Retained by DOE	(39)	-
Net Custodial Activity	\$ -	\$ -

The accompanying notes are an integral part of these statements

Notes to the Consolidated Financial Statements

1. Significant Accounting Policies

A. Basis of Presentation

These consolidated 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'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 National 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 field organizations.

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 office 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, these statements reflect not only the costs incurred by these contractors, but also include certain contractor assets (i.e., employee advances and prepaid pension costs) and liabilities (i.e., 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-agency balances and transactions have been eliminated in consolidation.

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

Investments in Treasury securities for the Department's Nuclear Waste Fund (NWF) are classified as available for sale and are reported at fair market value in accordance with Statement of Financial Accounting Standards (SFAS) No. 115, *Accounting for Certain Investments in Debt and Equity Securities*, with unrealized holding gains and losses reported as a component of net position. All other investments are reported at cost net of amortized premiums or discounts, as it is the Department's intent to hold the investments to maturity. Premiums or discounts are amortized using the effective interest yield method. (See Note 4).

F. Accounts Receivable, Net of Allowance

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. Inventories

Stockpile materials are recorded at historical cost in accordance with Statement of Federal Financial Accounting Standards 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). When an operational use is found for surplus or excess stockpile materials or other inventories whose value was previously reduced to net realizable value, the inventories are classified as operating materials and their carrying value is increased to historical cost.

H. General Property, Plant, and Equipment

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 \$10,000. (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

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 and increased for leave earned. 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 1 percent of pay and matches any employee contribution up to an additional 4 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 include 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 was the plan sponsor. (See Note 16).

L. Net Cost of Operations

Operating costs are summarized in the *Consolidated Statements of Net Cost* by business lines representing the four major elements of the Department's mission. Operating costs reflect the full costs including all direct and indirect costs consumed by a program or responsibility segment. Full costs are reduced by exchange (earned) revenues to arrive at net operating cost (See Notes 18 — 23).

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. Major sources of the Department's exchange revenues include:

- sales of power by the power marketing administrations (See Note 20);
- reimbursement for work performed at the Department's facilities for other Federal agencies and non-Federal sponsors (See Note 23);
- 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 Department incurs costs for developing and managing a permanent repository for spent nuclear fuel generated by civilian reactors (See Note 22);
- assessments against domestic utilities to pay the costs for decontamination and decommissioning DOE's gaseous diffusion facilities used for uranium enrichment services, and the interest earned on the invested balance of these funds (See Note 22); and
- oil exchange revenues recognized from the deferral of oil deliveries to the Strategic Petroleum Reserve (See Note 20).

The Department's exchange revenues are reported on the *Consolidated Statements of Net Cost* to reduce the reported cost of operations borne by the taxpayer. 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, operating 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*.

Custodial Revenues: The Department collects certain revenues on behalf of others which are designated as custodial revenues. The Department incurs 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 29).

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 2000 amounts have been reclassified to conform to the FY 2001 presentation.

2. Non-Entity Assets	(in millions)	
	<u>FY 2001</u>	<u>FY 2000</u>
<i>Intragovernmental</i>		
Fund balance with Treasury		
Naval Petroleum Reserve Deposit Fund	\$ 323	\$ 323
Elk Hills School Land Fund	226	262
Other	1	5
Investments - Petroleum Pricing Violation Escrow Fund ^(see note 4)	<u>292</u>	<u>302</u>
Subtotal	\$ 842	\$ 892
Investments - Petroleum Pricing Violation Escrow Fund ^(see note 4)	222	222
Accounts receivable - Petroleum Pricing Violation Escrow Fund ^(see note 5)	20	24
Inventories - Department of Defense stockpile oil ^(see note 7)	106	106
Other	9	4
Total non-entity assets	\$ 1,199	\$ 1,248

Assets in the possession of the Department but are not available for its use are considered non-entity assets. Offsetting liabilities are included on the balance sheet for these 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 settlement 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.

Elk Hills School Land 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 fiscal year 2001, the Department made a \$36 million payment pursuant to a legislative directive.

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)***Fiscal Year 2001*

	Appropriated Funds	Revolving Funds	Special Funds	Other Funds	Total
Unobligated budgetary resources					
Available	\$ 1,369	\$ 346	\$ 62	\$ -	\$ 1,777
Unavailable	183	714	9	-	906
Obligated balance not yet disbursed					
Undelivered orders	7,867	20	155	5	8,047
Unfilled customer orders	(1,981)	-	-	-	(1,981)
Receivables for reimbursements earned	(297)	(387)	(17)	-	(701)
Accounts payable and deposit fund liabilities	4,030	914	384	375	5,703
Other adjustments					
Appropriations not available pursuant to law					
Clean Coal Technology	82				82
Budgetary resources invested in Treasury securities					
Nuclear Waste Fund			(94)		(94)
Uranium Enrichment D&D Fund			(3)		(3)
Uranium Facilities Maintenance and Remediation	(178)				(178)
U.S. Enrichment Corporation revolving fund		(872)			(872)
Total FY 2001 fund balance with Treasury	\$ 11,075	\$ 735	\$ 496	\$ 380	\$ 12,686

Fiscal Year 2000

	Appropriated Funds	Revolving Funds	Special Funds	Other Funds	Total
Unobligated budgetary resources					
Available	\$ 1,412	\$ 448	\$ 39	\$ -	\$ 1,899
Unavailable	271	482	-	-	753
Obligated balance not yet disbursed					
Undelivered orders	6,418	27	213	5	6,663
Unfilled customer orders	(1,991)	-	-	-	(1,991)
Receivables for reimbursements earned	(304)	(360)	(5)	1	(668)
Accounts payable and deposit fund liabilities	3,704	761	417	350	5,232
Other adjustments					
Appropriations not available pursuant to law					
Clean Coal Technology	186				186
Defense Nuclear Waste Disposal	85				85
Budgetary resources invested in Treasury securities					
Nuclear Waste Fund			(72)		(72)
Uranium Enrichment D&D Fund			(135)		(135)
U.S. Enrichment Corporation revolving fund		(478)			(478)
Total FY 2000 fund balance with Treasury	\$ 9,781	\$ 880	\$ 457	\$ 356	\$ 11,474

4. Investments, Net

(in millions)

	<u>Cost</u>	<u>Amortized (Premium) Discount</u>	<u>Investments Net</u>	<u>Market Value</u>
<i>Fiscal Year 2001</i>				
<i>Intragovernmental Non-Marketable</i>				
Nuclear Waste Fund	\$ 10,384	\$ 647	\$ 11,031	\$ 11,674
Net unrealized holding gains			643	
Uranium Enrichment D&D Fund	2,621	(31)	2,590	2,590
United States Enrichment Corporation	1,261	(5)	1,256	1,256
Petroleum Pricing Violation Escrow Fund	289	3	292	292
Subtotal	\$ 14,555	\$ 614	\$ 15,812	\$ 15,812
<i>Non-intragovernmental Marketable Securities</i>				
Petroleum Pricing Violation Escrow Fund	222	-	222	222
Total FY 2001 investments	\$ 14,777	\$ 614	\$ 16,034	\$ 16,034
<i>Fiscal Year 2000</i>				
<i>Intragovernmental Non-Marketable</i>				
Nuclear Waste Fund	\$ 9,524	\$ 305	\$ 9,829	\$ 9,777
Net unrealized holding losses			(52)	
Uranium Enrichment D&D Fund	2,200	(19)	2,181	2,160
United States Enrichment Corporation	478	10	488	488
Petroleum Pricing Violation Escrow Fund	298	4	302	303
Subtotal	\$ 12,500	\$ 300	\$ 12,748	\$ 12,728
<i>Non-intragovernmental Marketable Securities</i>				
Du Pont pension receipts	41	-	41	41
Petroleum Pricing Violation Escrow Fund	222	-	222	215
Subtotal	\$ 263	\$ -	\$ 263	\$ 256
Total FY 2000 investments	\$ 12,763	\$ 300	\$ 13,011	\$ 12,984

Pursuant to statutory authorizations, the Department invests monies in Treasury securities and commercial certificates of deposit which are secured by the Federal Deposit Insurance Corporation. The Department's investments primarily involve the NWF and the Uranium Enrichment Decontamination and Decommissioning 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 on July 28, 1998, OMB and Treasury designated the Department as successor to USEC for purposes of disposition of balances remaining in the United States Enrichment Corporation Fund. Funds in excess of those needed to pay current program costs are invested in Treasury securities. During FY 2001, Treasury made available an additional \$725 million for investment which corrected an erroneous transfer of United States Enrichment Corporation Fund balances to Treasury in FY 1998. (See Note 13.)

5. Accounts Receivable, Net**(in millions)**

	FY 2001			FY 2000		
	Receivable	Allowance	Net	Receivable	Allowance	Net
Intragovernmental	\$ 557	\$ -	\$ 557	\$ 540	\$ -	\$ 540
Non-intragovernmental						
Nuclear Waste Fund	\$ 2,835	\$ -	\$ 2,835	\$ 2,697	\$ -	\$ 2,697
Uranium Enrichment D&D Fund	1,054	-	1,054	1,255	-	1,255
Power marketing administrations	590	(15)	575	472	-	472
Petroleum Pricing Violation Escrow Fund	2,100	(2,080)	20	2,132	(2,108)	24
Credit programs	58	(26)	32	61	(26)	35
Other	183	(66)	117	177	(68)	109
Subtotal	\$ 6,820	\$ (2,187)	\$ 4,633	\$ 6,794	\$ (2,202)	\$ 4,592
Total accounts receivable	\$ 7,377	\$ (2,187)	\$ 5,190	\$ 7,334	\$ (2,202)	\$ 5,132

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 related to earned revenues on investments held in Treasury securities.

Non-intragovernmental receivables primarily represent amounts due for NWF and Uranium Enrichment Decontamination and Decommissioning (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 result from agreements or court orders with individuals or firms that violated petroleum pricing and allocation regulations during the 1970s. The majority of these receivables are with individuals or firms that are in bankruptcy, or collection action is being taken by the Department of Justice. Many cases handled by the Department of Justice will result in complete write-offs or settlement agreements for amounts significantly less than the original agreement. Allowance accounts have been established to reflect the realistic potential for recovery of amounts owed. The methodology used to calculate the allowance accounts was derived through an intensive analysis of each case. The receivables were categorized based on the status of the case, the financial condition of the debtor, the collections received to date, and any pertinent information from the Office of General Counsel related to each case. Based on this analysis and categorization, percentages for the probability of collection were determined. The allowance account as of September 30, 2001, and 2000, includes interest receivable of \$1,550 million and \$1,570 million, respectively.

6. Regulatory Assets	(in millions)	
	FY 2001	FY 2000
<i>Intragovernmental</i>		
Appropriation refinancing asset	\$ 5,236	\$ 5,228
<i>Non-intragovernmental</i>		
Operating regulatory assets	\$ 2,442	\$ 2,488
Non-operating regulatory assets	3,874	3,967
Conservation and fish and wildlife projects	590	650
Subtotal	\$ 6,906	\$ 7,105
Total regulatory assets	\$ 12,142	\$ 12,333

The Department's power marketing administrations record certain amounts as assets in accordance with SFAS No. 71, *Accounting for the Effects 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.

Appropriation Refinancing Asset

The Bonneville Power Administration (BPA) Appropriations Refinancing Act, 16 U.S.C. 8381, required that the outstanding balance of the Federal Columbia River Power System (FCRPS) federal appropriations, which BPA is obligated to set rates to recover, be reset and assigned prevailing market rates of interest as of Sept. 30, 1996. These appropriations include the unpaid balance of capital appropriations of the power generating assets of the Corps of Engineers and Bureau of Reclamation associated with the FCRPS. The resulting principal amount of appropriations was determined to be equal to the present value of the principal and interest that would have been paid to Treasury in the absence of the Act, plus \$100 million. The amount of appropriations refinanced was \$6.6 billion. After refinancing, the appropriations outstanding were \$4.1 billion. The \$2.5 billion difference was recorded as a capitalization adjustment and represents the increased interest expense over the remaining repayment period. This adjustment is being amortized over the remaining period of repayment. Amortization of the capitalization adjustment was \$68.8 million for fiscal 2001 and \$67.5 million for fiscal 2000.

In accordance with SFAS No. 71, offsetting regulatory assets are recognized which represent the ability of BPA to repay this appropriated capital from the proceeds of power sales generated from the Corps and Bureau of Reclamation assets.

Operating Regulatory Assets

The BPA has acquired the generating capability of one operating nuclear power plant, as well as several hydroelectric projects. BPA pays the annual operating costs including debt service. These project costs are recovered through BPA's electric rates. Because these projects' current and future costs can be recovered through BPA's electric rates, 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 generating capability of four terminated nuclear power plants. The government's contracts require BPA to pay all or part of the annual projects' budgets, including debt service of the terminated plants. Because these projects' current and future costs can be recovered through BPA's electric rates, the *Consolidated Balance Sheets* include a regulatory asset and an offsetting related debt.

Conservation and Fish and Wildlife Projects

The conservation and fish and wildlife projects consist of facilities constructed 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 Northwest Power Act. BPA pays for the construction of the facilities and recovers the costs in rates but does not retain ownership of the facilities. These facilities are amortized and recovered in rates over a 15-year period.

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, and other inventory consisting primarily of operating materials and supplies.

The Strategic Petroleum Reserve consists of crude oil stored in salt domes, terminals, and pipelines. As of September 30, 2001, and 2000, the Reserve contained 545 million and 570 million barrels of crude oil respectively with an historical cost of \$14,558 million and \$15,278 million. 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 at September 30, 2001 and 2000. (See Notes 2, 9, and 14).

The Northeast Home Heating Oil Reserve was established in FY 2000 pursuant to the Energy Policy and Conservation Act. As of September 30, 2001, the reserve contained 2 million barrels of petroleum distillate in the New England, New York, and New Jersey geographic area valued at historical cost of \$77 million. As of September 30, 2000, the reserve contained 1.4 million barrels of petroleum valued at historical cost of \$29 million.

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) is instrumental to the U.S. Government in negotiations with Russia concerning the future of 34 metric tons of Russia's weapons grade plutonium. On September 1, 2000, the U.S. Government signed the United States-Russian Federation Agreement for irreversibly transforming excess weapons plutonium into forms unusable for weapons. This accomplishment advances the critical task of reducing stockpiles of excess weapons plutonium and contributes to key arms control and non-proliferation objectives.

In March 1999, the United States and the Russian Federation executed agreements resulting in the Department's acquisition of 11,000 metric tons of uranium. These agreements require the Department to stockpile 22,000 metric tons of uranium, including the uranium acquired from Russia, for ten years prior to disposition.

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. Estimates of revenues and processing costs for surplus HEU were updated during FY 2000 and FY 2001. Based upon these estimates, the carrying value of HEU for which the LEU blending product will have levels of contamination exceeding nuclear fuel specifications was reduced to zero. A disposition liability for estimated costs to process this "off-spec" material, most of which will be blended to LEU for use in Tennessee Valley Authority nuclear power reactors, is included in environmental liabilities. 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 2001			FY 2000		
	Acquisition	Accumulated	Net Book	Acquisition	Accumulated	Net Book
	<u>Costs</u>	<u>Depreciation</u>	<u>Value</u>	<u>Costs</u>	<u>Depreciation</u>	<u>Value</u>
Land and land rights	\$ 1,384	\$ (624)	\$ 760	\$ 1,255	\$ (586)	\$ 669
Structures and facilities	31,008	(20,825)	10,183	29,691	(20,009)	9,682
Internal use software	83	(35)	48	61	(32)	29
Equipment	13,966	(9,595)	4,371	14,211	(9,717)	4,494
Natural resources	103	(8)	95	101	(8)	93
Construction work in process	3,970	-	3,970	3,571	-	3,571
Total property, plant and equipment	\$ 50,514	\$ (31,087)	\$19,427	\$ 48,890	\$ (30,352)	\$ 18,538

9. Other Non-Intragovernmental Assets**(in millions)**

	FY 2001	FY 2000
Prepaid pension plan costs ^(Note 16)	\$ 2,373	\$ 1,653
Oil due from others	1,256	414
Other	669	550
Total other non-intragovernmental assets	\$ 4,298	\$ 2,617

Oil Due from Others

The Department entered into a Royalty-In-Kind exchange arrangement with the Department of the Interior's Mineral Management Service (MMS) to receive 28 million barrels of crude oil from Gulf of Mexico Federal offshore leases. The oil from the MMS offshore leases was exchanged for approximately 29.3 million barrels of other crude oil (exchange oil) of differing quality to be delivered to the Strategic Petroleum Reserve through December 31, 2001. As a result of companies deferring the delivery of some this exchange oil until FY 2002, the Department will receive an additional 3.4 million barrels as a premium. The value of the deferred exchange and premium barrels of oil as of September 30, 2001 and 2000 was \$312 million and \$414 million, respectively. The Department also released 30 million barrels from the reserve in early FY 2001 in exchange for 34.5 million barrels to be delivered back to the reserve during FY 2001 and FY 2002. As of September 30, 2001, the value of these outstanding oil deliveries was \$940 million. In addition to oil due from exchange transactions, \$4 million in oil was due from other lease activities at the Strategic Petroleum Reserve as of September 30, 2001. (See also Note 20).

10. Liabilities Not Covered By Budgetary Resources

(in millions)

	<u>FY 2001</u>	<u>FY 2000</u>
Intragovernmental		
Appropriated capital owed to Treasury ^(Note 12)	\$ 2,747	\$ 2,004
Other	17	18
Total intragovernmental	<u>\$ 2,764</u>	<u>\$ 2,022</u>
Deferred revenues ^(Note 13)		
Nuclear Waste Fund	14,376	13,144
United States Enrichment Corporation	1,041	477
Environmental liabilities ^(Note 15)	236,365	232,822
Pension and other actuarial liabilities ^(Note 16)	7,624	7,166
Other liabilities		
Compensation program for occupational illnesses ^(Note 14)	-	1,600
Environment, safety and health compliance activities ^(Note 14)	623	1,279
Accrued annual leave for Federal employees	93	88
Other	50	54
Contingencies ^(Note 17)	2,028	2,030
Total liabilities not covered by budgetary resources	<u>\$ 264,964</u>	<u>\$ 260,682</u>

FY 2000 balances were restated to conform with the FY 2001 presentation. Bonneville Power Administration debt was reclassified to liabilities covered by budgetary resources since Bonneville has indefinite permanent appropriation authority and borrowing authority which by definition constitute available budgetary resources for these liabilities. Appropriated capital owed to Treasury was also increased by \$61 million due to reclassifications from other liabilities by the power marketing administrations.

11. Debt**(in millions)**

	<u>FY 2001</u>	<u>FY 2000</u>
<i>Intragovernmental</i>		
Borrowing from Treasury	\$ 2,689	\$ 2,513
Refinanced appropriations	3,524	3,786
Capitalization adjustment	<u>2,260</u>	<u>2,329</u>
Subtotal	\$ 8,473	\$ 8,628
<i>Non-intragovernmental</i>		
Non-Federal projects	6,241	6,488
Total debt	\$ 14,714	\$ 15,116

Borrowing from Treasury

To finance its capital programs, the BPA is authorized to issue to Treasury up to \$3,750 million of interest-bearing 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. The weighted average interest rates as of September 30, 2001 and 2000, were 6.5 percent and 6.6 percent, respectively. These rates exceed the rates which 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, 2001 and 2000, for similar maturities, exceeds carrying value by approximately \$389 million and \$188 million, respectively. BPA's policy is to refinance debt that is callable when associated benefits exceed costs of refinancing.

Refinanced Appropriations

The BPA Appropriations Refinancing Act of 1994 required that the unpaid balance, as of September 30, 1996, of 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. The weighted average interest rates were 6.9 percent and 7.1 percent in FY 2001 and 2000, respectively. The majority of the refinanced appropriations represent the unpaid capital appropriations of the Corps of Engineers and the Bureau of Reclamation (See Note 6).

Capitalization Adjustment

The amount of appropriations refinanced as a result of the BPA Appropriations Refinancing Act of 1994 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 the remaining period of repayment. Amortization of the capitalization adjustment was \$69 million and \$67 million for FY 2001 and 2000, respectively. The weighted average interest rate was 6.9 percent and 7.1 percent in FY 2001 and 2000, respectively.

Non-Federal Projects

As discussed in Note 6, the non-Federal projects debt represents the BPA’s liability to pay all or part of the annual budgets, including debt service, of the generating capability of five nuclear power plants as well as several hydroelectric projects.

The following table summarizes future principle payments required for the debt described above:

(in millions)				
Fiscal Year	Borrowing from Treasury	Refinanced Appropriation	Capitalization Adjustment	Non-Federal Projects
2002	\$ 106	\$ 24	\$ 67	\$ 217
2003	207	26	68	289
2004	176	17	68	323
2005	199	-	65	278
2006	110	17	68	314
2007+	1,891	3,440	1,924	4,820
Total	\$2,689	\$3,524	\$2,260	\$ 6,241

12. Appropriated Capital Owed to Treasury

Appropriated capital owed to Treasury 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. 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 to Treasury 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 the BPA, receives an annual appropriation to fund operation and maintenance expenses. These appropriated funds are repaid to Treasury 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 Treasury, and as such, the 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, the Department’s financial statements do not reflect the Federal investment in power generating facilities owned by the U.S. Department of Defense, Army Corps of Engineers; the U.S. Department of Interior, Bureau of Reclamation; and the U.S. 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 29)

13. Deferred Revenue**(in millions)**

	FY 2001	FY 2000
Intragovernmental	<u>\$ 39</u>	<u>\$ 26</u>
Non-intragovernmental		
Nuclear Waste Fund	\$ 14,376	\$ 13,144
United States Enrichment Corporation	1,041	477
Power marketing administrations	902	644
Reimbursable work advances	193	211
Other	<u>21</u>	<u>22</u>
Subtotal	<u>\$ 16,533</u>	<u>\$ 14,498</u>
Total deferred revenues	<u>\$ 16,572</u>	<u>\$ 14,524</u>

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.

United States Enrichment Corporation

Upon privatization of the USEC on July 28, 1998, OMB and Treasury designated the Department as successor to USEC for purposes of disposition of balances remaining in the United States Enrichment Fund, including payment of final bills associated with privatization. During FY 2001, Treasury transferred funds to the Department which corrected an erroneous transfer of United States Enrichment Corporation Fund balances to Treasury in FY 1998.

Power Marketing Administrations

The power marketing administrations' deferred revenues represent primarily amounts paid to BPA from participants under various alternating current intertie capacity agreements 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.

14. Other Liabilities	(in millions)	
	FY 2001	FY 2000
Intragovernmental		
Oil held for DOD ^(Note 7)	\$ 106	\$ 106
Other	<u>150</u>	<u>96</u>
Subtotal	<u>\$ 256</u>	<u>\$ 202</u>
Non-intragovernmental		
Compensation program for occupational illnesses	\$ -	\$ 1,600
Environment, safety and health compliance activities	623	1,279
Accrued payroll and benefits	813	746
Petroleum Pricing Violation Escrow Fund ^(Note 2)	534	548
Naval Petroleum Reserve Deposit Fund ^(Note 2)	323	323
Elk Hills School Land Fund ^(Note 2)	226	262
Other	<u>246</u>	<u>246</u>
Subtotal	<u>\$ 2,765</u>	<u>\$ 5,004</u>
Total other liabilities	<u><u>\$ 3,021</u></u>	<u><u>\$ 5,206</u></u>

The current portion of other liabilities includes accrued payroll and benefits and most of the amounts captioned as “other” above. The remaining amounts are predominantly non-current liabilities.

Compensation Program for Occupational Illnesses

Public Law 106-398, the Energy Employees Occupational Illness Compensation Program Act of 2000, authorized compensation for certain illnesses suffered by employees of the Department, its predecessor agencies, and contractors who performed work for the nuclear weapons program. Covered illnesses include cancers resulting from exposure to radiation; chronic beryllium disease; silicosis; and other illnesses arising from exposure to toxic substances during employment at atomic weapons facilities. In general, each employee and survivors of deceased employees eligible for compensation will receive compensation for the costs of medical care related to covered illness(es) and a choice of either lost wages or a lump sum payment of \$200,000.

Under an executive order signed by the President on December 7, 2000, the Department of Labor has primary responsibility for administering the compensation program. Therefore, the \$1.6 billion estimated liability accrued in FY 2000 was transferred to the Department of Labor in FY 2001. In FY 2001, the Department of Labor accrued an additional \$1.6 billion increasing the total estimated liability to \$3.2 billion for this program. As a result, the additional \$1.6 billion was included as an imputed cost and as an imputed financing source on the Department of Energy's *Consolidated Statements of Net Cost* and *Consolidated Statements of Financing*, respectively. (See Notes 24, 27 and 28).

Significant claims have been initiated as a result of the Energy Employees Occupational Illness Program. Although it is anticipated that the majority of resulting claims will be administered and funded by the Department of Labor, the Act also allows separate claims for benefits from state workers compensation programs. Nothing in the Act changes criteria by which claims are assessed by the individual states. To the extent that claims qualify for compensation under state programs, such claims will be funded by the Department. However, at this time, the Department has no basis upon which to estimate the ultimate cost of these separate state claims.

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 2001 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. In addition, the Department reduced the ES&H liability by \$597 million in FY 2001 to correct an error in the ES&H liability estimate reported in prior years.

Accrued Payroll and Benefits

Accrued payroll and benefits represent amounts owed to the Department's federal and contractor employees.

Other Liabilities

This balance consists primarily of liabilities associated with other deposit funds, suspense accounts, receipts due to Treasury, and contract advances.

15. Environmental Liabilities
(in millions)

	<u>FY 2001</u>	<u>FY 2000</u>
Environmental Management baseline estimates	\$ 184,257	\$ 182,728
Active and surplus facilities - other programs	31,370	26,006
High-level waste and spent nuclear fuel disposition	14,578	14,281
Other	<u>8,144</u>	<u>11,252</u>
Total environmental liabilities	\$ 238,349	\$ 234,267
Amount funded by current appropriations	(1,984)	(1,445)
Total unfunded environmental liabilities	<u>\$ 236,365</u>	<u>\$ 232,822</u>
<i>Changes in environmental liabilities</i>		
Total environmental liabilities, beginning balance	\$ 234,267	\$ 230,640
Prior period adjustments	<u>6</u>	<u>1</u>
Adjusted beginning balance	\$ 234,273	\$ 230,641
<i>Changes to environmental liability estimates</i>		
Environmental Management baseline estimates	7,623	5,090
Active and surplus facilities - other programs	5,469	713
High-level waste and spent nuclear fuel disposition	506	(554)
Other	<u>(3,085)</u>	<u>4,596</u>
Total changes in estimates ^(Note 24)	\$ 10,513	\$ 9,845
Operating expenditures related to remediation activities ^(Note 22)	(5,909)	(5,935)
Capital expenditures related to remediation activities	<u>(528)</u>	<u>(284)</u>
Total environmental liabilities	<u>\$ 238,349</u>	<u>\$ 234,267</u>

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 pristine 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 pristine 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 includes a contingency estimate intended to account for the uncertainties associated with the technical cleanup scope of the program. For example, the precise nature and quantities of material being addressed are not always known, and some baseline estimates, including EM's baselines for treatment of high-level wastes, are incomplete because suitable cleanup technologies are under development.

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 liabilities as of September 30, 2001 and 2000, are stated in FY 2001 dollars and FY 2000 dollars, respectively, as required by Federal accounting standards. Future inflation could cause actual costs to be substantially higher than the recorded liability.

Components of the Liability

Environmental Management Baseline Estimates

The Department's Office of Environmental Management (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 and is also responsible for cleanup of contaminated soil and water. The EM life cycle cost estimates reflect a strategic vision to clean up most of the Department's sites by 2006. This strategy provides for a site by site projection of the work required to complete all EM projects, while complying with compliance 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; managing nuclear materials; and post-cleanup monitoring and stewardship. These life cycle cost estimates, which were developed by the cognizant field offices, cover the costs of these activities to 2070. Some post-cleanup monitoring and other long-term stewardship activities are expected to continue beyond 2070, but the Department believes the costs of those activities cannot be reasonably estimated. The baseline estimates also include costs for related activities such as landlord responsibilities, program management, and legally prescribed grants for participation and oversight by native American tribes, regulatory agencies, and other stakeholders.

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 10,500 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/or regulatory decisions have not been made for most 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.
- The first geologic repository for high-level radioactive waste is scheduled to open in 2010. At that time, it will accept spent nuclear fuel from commercial utilities and the Department's high-level waste and spent nuclear fuel. Delays in opening the repository could increase settlement costs with civilian nuclear utilities and cause EM project costs to increase.
- The Waste Isolation Pilot Plant (WIPP), a geologic repository for the disposal of mixed transuranic waste, opened in March 1999, and expects to receive and dispose all of the Department's transuranic waste over its planned 35-year operating period. Any significant disruptions in the availability of WIPP to receive transuranic waste from other sites could cause delays in site cleanup projects and increase life cycle costs.
- Only existing technologies, such as pumping and treating groundwater, are assumed to be available for estimating cleanup costs where applicable. Estimates were 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. Significant sites for which cleanup costs are excluded include nuclear explosion test areas such as the Nevada Test Site; large surface water bodies including the Clinch and Columbia rivers; and most contaminated ground water for which, even with treatment, future use will remain restricted.

Changes to the EM baseline estimates during FY 2001 and 2000 resulted from inflation adjustments to reflect current year constant dollars; additions for facilities transferred from the active and surplus category discussed below; improved and updated estimates for the same scope of work; revisions in technical approach or scope; regulatory changes; and cleanup activities performed.

The Secretary directed EM to conduct a top-to-bottom review to find efficient and cost effective ways to achieve greater real cleanup and risk reduction. The review's major observation is that EM has been oriented towards managing risks rather than actually reducing the risks to the public, workers, and the environment. The estimated future cost of maintaining this cleanup approach as of September 30, 2001, approximates \$184 billion and could increase if EM continues to manage the risks rather than reducing them.

The Department will pursue implementation of proposals from the top-to-bottom review over the next 18 months. This could accelerate activities related to site or facility closure or result in alternative cleanup strategies. Many of the proposals would require reaching a new understanding with state and Federal regulators, as well as fundamental changes in how the Department conducts business. The Department believes that implementing recommendations from the top-to-bottom review will have a positive impact on the cost and schedule of the cleanup program.

Active and Surplus Facilities — Other Programs

This liability includes anticipated remediation costs for active and surplus facilities managed by the Department's ongoing program operations which will ultimately require stabilization, deactivation, and decommissioning. The estimate is largely based on 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. The increase in this liability during FY 2001 is due primarily to modifications of the contingency estimates included in the cost-estimating model.

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 which 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 2001 and 2000 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 the Department's estimated costs to dispose of surplus plutonium, depleted uranium, and highly enriched uranium (HEU — see discussion in Note 7). Changes during FY 2000 were primarily caused by increases in estimated costs to dispose of surplus plutonium. In FY 2001, the liability was reduced to reflect the Secretary's decision to convert substantially all surplus plutonium by converting it into mixed oxide fuel.

16. Pension and Other Actuarial Liabilities (in millions)

	FY 2001	FY 2000
Contractor pension plans	\$ 543	\$ 396
Contractor postretirement benefits other than pensions	6,964	6,661
Contractor disability and life insurance plans	21	25
Federal Employees' Compensation Act	96	84
Total pension and other actuarial liabilities	\$ 7,624	\$ 7,166

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. Since the Department approves the contractors' pension and postretirement benefit plans and is ultimately responsible for funding the plans, the responsibility for any related liabilities rests with the Department.

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, 2001, the Department has prepaid pension costs of \$2,402 million before minimum liability adjustment and \$2,371 after minimum liability adjustment; accrued pension costs of \$443 million before minimum liability adjustment and \$543 million after minimum liability adjustment. The Department has a continuing obligation for a variety of contractor-sponsored pension plans (43 qualified and 8 nonqualified). In this regard, benefit formulas consist of final average pay (35 plans), career average pay (8 plans), dollar per month of service (7 plans), and one defined contribution plan with future contributions for retired employees. Twenty-one of the plans cover nonunion employees only, 13 cover union employees only, and 17 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.

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 3.5 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 in determining the pension estimates. The weighted average discount rates of 8.0 percent for FY 2001 and 7.5 percent for FY 2000 were used, the average long-term rate of return on assets was 8.4 percent in FY 2001 and 8.31 percent in FY 2000, and the average rate of compensation increase was 4.8 percent in FY 2001 and 4.7 percent in FY 2000 in determining the net periodic pension cost.

The weighted average discount rates used to determine the benefit obligations as of September 30, 2001 and 2000 were 7.25 percent and 8.0 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, 2001 and 2000, the Department has an accrued PRB liability of \$6,964 million and \$6,661 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 6 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 (40 contractors), dental (16 contractors), life insurance (24 contractors), and Medicare Part B premium reimbursement (4 contractors). Thirty-seven of the contractors sponsor a traditional indemnity plan, a PPO, an HMO, or similar plan. Twenty of these also have a point of service plan, an HMO, or similar plan. Three additional contractors have 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 at all ages for a point of service plan, an HMO, or similar plan, grade from 8.2 percent in 2000 down to 5.5 percent in 2007 and later. The medical trend rates for under age 65 for a PPO, a traditional indemnity plan, or similar plan, grade from 9.0 percent in 2000 down to 5.5 percent in 2007 and later, and the medical trend rates for over age 64 grade from 10.0 percent in 2000 down to 5.5 percent in 2007 and later. The dental trend rates at all ages grade down from 6.7 percent in 2000 to 5.5 percent in 2007 and later.

The weighted average discount rates of 8.0 percent for FY 2001 and 7.5 percent for FY 2000 were used, and the average long-term rate of return on assets was 7.63 percent in FY 2001 and 7.71 percent in FY 2000 in determining the net periodic postretirement benefit cost. The rate of compensation increase was the same rate as each contractor used to determine pension contributions.

The weighted average discount rates used to determine the benefit obligation as of September 30, 2001 and 2000 were 7.25 percent and 8.0 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.

<i>(in millions)</i>	Pension Benefits		Other Postretirement Benefits	
	2001	2000	2001	2000
<i>Reconciliation of funded status</i>				
Accumulated benefit obligation	\$14,152	\$11,262		
Effect of future compensation increases	2,193	1,760		
Benefit obligation	\$16,345	\$13,022	\$6,897	\$5,507
Plan assets	21,482	23,202	122	123
Funded status	\$5,137	\$10,180	(\$6,775)	(\$5,384)
Unrecognized net (asset)/obligation at transition	(1,099)	(1,220)		
Unrecognized prior service cost	384	79	(69)	(115)
Unrecognized actuarial (gain)/loss	(2,463)	(7,772)	(118)	(1,160)
Net amount recognized	\$1,959	\$1,267	(\$6,962)	(\$6,659)
Minimum liability adjustment	(131)	(12)	—	—
Prepaid/(accrued) benefit cost after minimum liability	\$1,828	\$1,255	(\$6,962)	(\$6,659)
Total prepaid benefit cost after minimum liability	2,371	1,651	2	2
Total (accrued) benefit cost after minimum liability	(\$543)	(\$396)	(\$6,964)	(\$6,661)
<i>Components of net periodic costs</i>				
Service costs	\$415	\$415	\$152	\$162
Interest costs	1,091	994	454	415
Actual return on plan assets	(1,729)	(1,591)	(9)	(9)
Net amortization and deferral	(461)	(392)	(65)	(70)
Impact of curtailment or special termination benefits	29	12	(5)	(2)
Total net periodic costs	(\$655)	(\$562)	\$527	\$496
<i>Contributions and benefit payments</i>				
Employer contributions	\$43	\$58	\$226	\$205
Participant contributions	4	4	37	21
Benefit payments	751	765	263	226

17. Contingencies**(in millions)**

	<u>FY 2001</u>	<u>FY 2000</u>
Spent nuclear fuel litigation	\$ 2,000	\$ 2,000
Other	28	30
Total contingencies	\$ 2,028	\$ 2,030

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 (NWPAct), 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 NWPAct, and does not anticipate there will be such a facility until at least 2010, the Department has been unable to begin disposal of the utilities' SNF as required by the contracts. Significant litigation has ensued as a result of this delay.

To date, that litigation has conclusively established that the Department's obligation to begin disposal of SNF is legally binding notwithstanding the lack of a facility to receive SNF. Currently, 18 utilities have filed suits in the Court of Federal Claims for breach of contract, in which they collectively seek \$5.94 billion. The industry is reported to estimate that damages for all utilities with which the Department has contracts will be at least \$50 billion. The Department, however, believes that the industry estimate is highly inflated and that, if the Department prevails on some key disputed issues, the actual total damages suffered by all utilities as a result of the delay in beginning SNF disposal is more likely to be in the range of between \$2 billion and \$3 billion, and has recorded a liability for the low end of that range.

Liability is certain in this matter. Other than ascertaining the actual amount of damages, the only outstanding issue is how that liability is to be satisfied. At this time, it is uncertain whether damages would be paid from the Judgment Fund, the Nuclear Waste Fund, or some other source.

- *Alleged Exposures to Radioactive and/or Toxic Substances* - A number of class action and/or multiple plaintiff tort suits have been filed against the Department's former contractors, and in some cases against individual managers and supervisors of the Department and its 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 arises 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 \$199 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. Accordingly, the Department believes that, to the extent that there is a reasonable possibility of an unfavorable outcome in any of 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 consolidated financial statements.

- *Uranium Enrichment Services Pricing* - In Florida Power & Light Co. et al. v. United States, No. 96-644C, (Fed. Cl.), the court recently found that remedial action and depleted uranium costs at the gaseous diffusion plants that the Department had taken into consideration in May 1992 in projecting it would recover the Government's cost over a twelve year period if it charged a selected price for fiscal year 1993 enrichment services, were to be paid from the Decontamination and Decommissioning Fund following the passage of the Energy Policy Act of 1992 and thus were no longer appropriate Government costs for recovery after EPACT's effective date of October 23, 1992. The Court determined that the utilities should receive a retroactive price reduction despite the Government's failure to recover all of its other costs as of July 1, 1993 (when the enrichment contracts were also transferred to the United States Enrichment Corporation). Following the Court's decision, the nine FP&L plaintiffs filed another complaint seeking additional amounts back to 1986. Three additional complaints were filed involving another twenty-five plaintiffs. In aggregate, the five cases pending to date seek approximately \$804 million. The Government has filed an appeal from the adverse decision in FP&L and intends to continue vigorously contesting the cases. No related liabilities are recorded in the Department's consolidated financial statements.
- *Uranium Enrichment Decontamination and Decommissioning Fund* — The Energy Policy Act of 1992 required the Department to collect from domestic utilities up to \$150 million a year (to be adjusted for inflation) for 15 years for deposit into the Uranium Enrichment Decontamination and Decommissioning (UE D&D) Fund, which is available to the Department to pay for cleaning up the gaseous diffusion enrichment plants. Utilities have brought a number of lawsuits alleging that the assessment constitutes an unlawful retroactive price increase in breach of their contracts and violates both the Takings and Due Process clauses of the Fifth Amendment by imposing an unlawful retroactive burden upon utilities. The Government has won one of the lawsuits, Yankee Atomic Electric Co. v. United States, 112 F.3d 1569 (Fed. Cir. 1997), *cert. denied*, 524 U.S. 951 (1998), that focused primarily on the breach of contract claims. The Government has subsequently prevailed in the Court of Federal Claims in five other cases in which the utilities sought to distinguish their Takings and Due Process claims from those in Yankee Atomic. Four of those cases were affirmed on appeal to the Court of Appeals for the Federal Circuit in opinions issued November 20, 2001.

In an effort to evade the precedential effect of the Yankee Atomic decision in the Court of Federal Claims, many utilities also pursued similar claims in United States District Court cases that were consolidated in the Southern District of New York for purposes of pretrial proceedings. The focus there became the jurisdictional issue of whether the cases belong in the Court of Federal Claims or the District Courts. The parties disagreed whether the Court of Federal Claims could decide the utilities' restated Due Process claims and could provide the utilities with adequate relief should they prevail. The Government successfully appealed the District Court's denial of the Government's motion to transfer the cases to the Court of Federal Claims, and the United States Court of Appeals for the Federal Circuit ordered the cases transferred to the Court of Federal Claims. That order was stayed pending the outcome of the utilities' petition for certiorari to the United States Supreme Court in Consolidated Edison Co. of NY, et.al. v. United States No. 01-205(S.Ct), which the Court denied on December 3, 2001.

The Government is represented by the Department of Justice in all of the above referenced matters and continues to vigorously contest all challenges to the UE D&D Fund. The remaining cases in the United States Court of Federal Claims are subject to the favorable precedent in the Yankee Atomic and Commonwealth Edison cases, and the district court cases should be transferred to the Court of Federal Claims in the near future.

The most significant remaining actions should be the resolution of the anticipated petitions for certiorari in the Commonwealth Edison, Maine Yankee, Omaha and SMUD cases. In addition, two other utilities have subsidiary claims relating to resales of enrichment services that will not be precluded by the precedent to date, however those claims total less than \$250,000.

In the unlikely event that the Government should ultimately lose as a result of Supreme Court action, the assessments could be declared unconstitutional or otherwise invalid. Future collections could be enjoined and the Government could be required to repay prior assessments, which commenced in fiscal year 1993, from either the UE D&D Fund or the Judgment Fund.

- *Natural Resource Damage Claims* — The Department is disclosing a contingency for potential natural resource damage (NRD) claims filed under the Comprehensive Environmental Response, Compensation, and Liability Act. Such liabilities could result from potential claims filed against the Department for natural resource injuries, primarily those remaining at the Department's facilities after cleanup. Although any estimate of such exposure is by necessity extremely speculative, the estimated range of the Department's NRD claim contingencies range from \$1.4 billion to \$2.5 billion.

Notwithstanding the potential for such claims, there neither are currently pending claims against the Department for injuries caused at its sites nor have there been any successful NRD claims against the Department. The Department's practice of addressing natural resource injuries during the remedy selection process should limit the exposure to potential NRD claims. The Department has initiated other efforts as well that are intended to minimize the potential for NRD claims. These efforts include: creating site-specific advisory boards at its facilities; ensuring participation of interested parties in the remedial planning process; and forming natural resource trustee councils at facilities where there is sufficient interest. In view of the foregoing, the Department currently considers estimating its potential NRD liability speculative and any potential payment less than probable but reasonably possible. Therefore, the Department has not recognized specific figures representing NRD liability in its financial statements to date.

- The State of New Mexico has recently filed a claim it values at \$260 million for injuries to ground water resources at a third party site, South Valley near Albuquerque. The Department's liability, while reasonably possible, would be less than the amount claimed as remediation is already underway pursuant to a prior settlement agreement. Any such liability would be paid from the Judgment Fund.
 - A sex discrimination suit under California Fair Employment and Housing Act has recently been filed by six females that worked at Lawrence Livermore National Laboratory alleging that they were paid less than similarly situated male employees. The judge has ruled that the case will be certified as a class action. The complaint seeks various forms of relief, but does not state a sum certain. However, given the potential size of the class, any adverse ruling could result in large costs. The plaintiffs' attorneys at a "town hall" meeting gave an estimate of \$250 million; however, it is believed that any recovery will be significantly less. No related liabilities are recorded in the Department's consolidated financial statements.
 - The Department's Savannah River Site and the State of South Carolina's Department of Health and Environmental Control are discussing proposed National Pollutant Discharge Elimination System operating permits that would implement Environmental Protection Agency standards governing effluent discharged from facilities at the site. The Department believes that its current discharges are not harmful due to the very soft water, which reduces toxicity, at the site and that imposing the EPA standards is not warranted. The cost to fully comply with the proposed permits would exceed \$420 million; however, no provision for these costs is recorded in the accompanying financial statements.
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- There is currently an unasserted claim by USEC for compensation for, or the replacement of approximately 9,550 metric tons of normal or natural uranium allegedly contaminated with Technetium (“Tc99”) above acceptable levels. The claim would involve, among others, an allegation that the Department of Energy was required by the Energy Policy Act of 1992, the USEC Privatization Act of 1996, and by the terms of the transfer documents to transfer to USEC 9,950 metric tons of natural uranium containing no more than one part per billion of Tc99. Among other responses, the Government could respond that neither the Energy Policy Act of 1992 nor the USEC Privatization Act required the transfer of uncontaminated uranium; that the uranium that was transferred to USEC met the requirements of the applicable laws; that because USEC knew or should have known that the uranium could be contaminated, USEC could not now complain that it selected contaminated uranium for transfer; and that the courts lack jurisdiction to hear USEC’s claim because USEC, at the time of the transfers, was an agency of the federal government (one executive agency cannot sue another executive agency). To the extent an estimate can be made, the potential loss may exceed \$100 million, if a claim is asserted and if USEC is successful in prosecuting the claim. No related liabilities are recorded in the Department’s consolidated financial statements.

18. Gross Cost and Earned Revenue by Budget Functional Classification	(in millions)
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Budget Functional Classification	Intragovernmental			Total		
	Gross Cost	Earned Revenues	Net Cost	Gross Cost	Earned Revenues	Net Cost
<i>FY 2001</i>						
Atomic Energy Defense	\$ 1,900	\$ (1,085)	\$ 815	\$ 19,237	\$ (1,127)	\$ 18,110
Energy Supply	684	(1,263)	(579)	7,573	(5,759)	1,814
General Science	42		42	2,475		2,475
Energy Conservation	20		20	765	(2)	763
Energy Information	297	(75)	222	512	(299)	213
Emergency Energy Preparedness	1		1	139	(187)	(48)
Total	\$ 2,944	\$ (2,423)	\$ 521	\$ 30,701	\$ (7,374)	\$ 23,327
<i>FY 2000</i>						
Atomic Energy Defense	\$ 357	\$ (999)	\$ (642)	\$ 17,071	\$ (1,105)	\$ 15,966
Energy Supply	821	(1,105)	(284)	8,876	(5,085)	3,791
General Science	55		55	2,392		2,392
Energy Conservation	24		24	685		685
Energy Information	232	(48)	184	474	(253)	221
Emergency Energy Preparedness	2		2	139	(16)	123
Total	\$ 1,491	\$ (2,152)	\$ (661)	\$ 29,637	\$ (6,459)	\$ 23,178

Gross cost and earned revenues are reported by budget functional classification codes to Treasury for inclusion in the Consolidated Financial Statements of the federal government. These classification codes are established by the Office of Management and Budget and Treasury for government-wide reporting purposes and differ from the classifications used for the Department’s financial statements.

19. Supporting Schedule of Net Cost for National Nuclear Security Activities**(in millions)**

	<u>FY 2001</u>	<u>FY 2000</u>
Directed stockpile work	\$ 1,007	\$ 743
Campaigns	1,621	1,715
Readiness in technical base and facilities	1,460	1,433
Secure transportation asset	117	94
Nonproliferation and verification research and development	232	225
Arms control	117	118
Nuclear safeguards and security	159	122
Fissile materials disposition	164	130
International nuclear safety	93	111
International material protection, control and accounting	129	152
Naval reactors	700	693
Emergency management	24	29
Emergency response	51	78
Worker and community transition	36	52
Intelligence	40	35
Counterintelligence	48	35
Cerro Grande fire activities	43	55
Total net costs for national nuclear security activities	\$ 6,041	\$ 5,820

FY 2000 amounts have been restated to conform with the FY 2001 presentation in order to reflect changes in the Department's budget structure.

NATIONAL NUCLEAR SECURITY ACTIVITIES - effectively support and maintain a safe and reliable enduring nuclear weapons stockpile without underground nuclear testing; safely dismantle and dispose of excess weapons; and provide technical leadership for national and global nonproliferation activities.

Directed Stockpile Work — Supports the National Nuclear Security Administration's mission to maintain the safety, security, reliability, and performance of the nuclear stockpile without underground nuclear testing, and is designed to ensure that stockpiled weapons meet military requirements. Encompasses the broad range of activities that directly support weapons in the enduring nuclear stockpile, as directed by the Presidentially approved Nuclear Weapons Stockpile Plan, including current maintenance and day-to-day care; research, development, engineering, and certification activities; procurement of materials (exclusive of nuclear materials); fabrication and assembly of nuclear weapons and weapon components; lifetime surety, maintenance and reliability assessments; and weapon dismantlement and disposal.

Campaigns — Focused scientific and engineering efforts across the nuclear weapons complex that develop and maintain special capabilities and tools needed for continued certification of the stockpile, now and in the future, in the absence of underground nuclear testing. Addresses current or future questions concerning the stockpile through multi-year, multi-functional efforts by employing the best available scientists and engineers and applying the most advanced sciences and technologies.

Readiness in Technical Base and Facilities — Ensures that the right facilities and infrastructure are in place to manufacture and certify the nuclear weapons stockpile; and also ensures that all sites within the nuclear weapons complex are implementing the technologies and methods to make construction, operation, and maintenance of the facilities safe, secure, reliable, and cost effective. Provides the physical and operational infrastructure required to conduct the scientific, technical, and manufacturing activities of the Stockpile Stewardship Program with the goal of a constant readiness level.

Secure Transportation Asset — provide safe, secure movement of nuclear weapons, special nuclear materials, selected non-nuclear weapons components, limited-life components, and any other Department materials requiring safe, secure transport to and from military locations, between nuclear weapons complex facilities and to other government locations within the continental United States.

Nonproliferation and Verification R&D — conduct research and development to provide the science and technology required for treaty monitoring, material control, and early detection and characterization of the proliferation of weapons of mass destruction and special nuclear materials, including arms control treaty verification; intelligence collecting and processing supporting Presidential arms control and nonproliferation initiatives; and providing intelligence support in assessing nuclear threats.

Arms Control — advance U.S. nonproliferation export control objectives to halt the spread of weapons of mass destruction, and support the implementation of bilateral and multilateral arms control and nonproliferation initiatives.

Nuclear Safeguards and Security — provide direction and training for protection of nuclear weapons, nuclear materials, classified information, and facilities, including related technology development, and directing classification and declassification activities.

Fissile Materials Disposition — dispose of surplus HEU and plutonium, and provide technical support for U.S. initiatives to reduce foreign surplus of weapons-usable plutonium. Provide safe, secure, environmentally sound, and inspectable long-term storage of weapons-usable fissile materials.

International Nuclear Safety — enhance the safety of Soviet-designed nuclear power plants, help host countries upgrade their nuclear safety cultures and supporting infrastructures, reduce the proliferation threats posed by plutonium and HEU materials available in Russia and other states of the Former Soviet Union, and cooperate and coordinate with other Departmental Offices and Government Agencies in the implementation of U.S. Non-Proliferation Policy by increasing confidence that Russian LEU sold to the USEC is derived from HEU removed from dismantled Russian nuclear weapons.

International Material Protection, Control, and Accounting — upgrade the security of Russian weapons-usable nuclear material at Russian Navy, commercial and weapons complex sites, and support the Russian Nuclear Cities Initiative.

Naval Reactors — design, development, testing, and production of safe, long-lived, militarily-effective nuclear power plants for U.S. Navy ships and submarines, including over 100 operating reactors in nine different operational classes.

Emergency Management — provide control and direction to ensure comprehensive and integrated planning, preparedness, and response capability for emergencies involving the Department's operations or facilities.

Emergency Response — administer and direct the programs of the Department's emergency response operations to ensure their availability and viability in responding to nuclear and radiological emergencies within the U.S. and abroad.

Worker and Community Transition — mitigate adverse impact on workers and communities resulting from restructuring, including local economic assistance for job-based conversion.

Intelligence — provides the Department, other U.S. Government policy makers, and the Intelligence Community with timely, accurate, high impact foreign intelligence analyses and provides quick-turnaround, specialized technology applications and operational support to the intelligence, special operations, and law enforcement communities. Ensures that the Department’s technical, analytical, and research expertise is made available to the Intelligence Community in accordance with Executive Order 12333, “United States Intelligence Activities.”

Counterintelligence — enhances the protection of sensitive technologies, information, and expertise against foreign intelligence and terrorist attempts to acquire nuclear weapons information or advanced technologies from the Department’s National Laboratories, production plants, and other operating facilities.

Cerro Grande Fire Activities — supplemental appropriation to meet the emergency requirements for recovery activities necessitated by the fire near the Los Alamos National Laboratory in New Mexico. Fire recovery activities include the following: physical damage and destruction repair and risk mitigation; restoring services for utilities, electrical infrastructure and communications; emergency response costs including overtime pay, fire risk reduction and mitigation, and fire fighting equipment; and resumption of normal laboratory support and programmatic operations.

20. Supporting Schedule of Net Cost for Energy Resources		(in millions)	
	FY 2001		FY 2000
Power technologies	\$ 328		\$ 301
Building technology, state and community programs	307		290
Federal energy management program			
Program costs	\$ 29	\$ 27	
Less earned revenues, intragovernmental	<u>(3)</u>	<u>-</u>	
	26		27
Industrial technology	196		161
Transportation technology	288		262
Coal research and development	249		215
Petroleum research and development	63		55
Gas research and development	35		59
Clean coal technology			
Program costs	\$ 115	\$ 54	
Less earned revenues, public	<u>-</u>	<u>(1)</u>	
	115		53
Nuclear energy research initiative	25		20
Nuclear energy plant optimization	5		1
Strategic Petroleum Reserve			
Program costs	\$ 228	\$ 210	
Less earned revenues, public	<u>(186)</u>	<u>(15)</u>	
	42		195
Naval petroleum reserves			
Program costs	\$ 24	\$ 26	
Less earned revenues, public	<u>(12)</u>	<u>(10)</u>	
	12		16
Power marketing administrations			
Program costs	\$ 4,959	\$ 3,518	
Less earned revenues, public	(4,601)	(3,750)	
Less earned revenues, intragovernmental	<u>(80)</u>	<u>(33)</u>	
	278		(265)
Elk Hills School Lands Fund	36		-
Nuclear energy technologies	7		-
Advanced accelerator applications	30		10
Energy Information Administration	78		74
Other fossil energy activities	31		38
Other nuclear energy activities	-		4
Total net costs for energy resources	\$ 2,151		\$ 1,516

FY 2000 amounts have been restated to conform with the FY 2001 presentation.

ENERGY RESOURCES ACTIVITIES - encourage energy efficiency; advance alternative and renewable energy technologies; increase energy choices for all consumers; assure adequate supplies of clean, conventional energy; and reduce U.S. vulnerability to external energy supply disruptions.

Power Technologies - research and development programs that contribute to strengthening the Nation's energy security, providing a cleaner environment, enhancing global sales of U.S. energy products, and increasing industrial competitiveness and Federal technology transfer. Activities range from basic cost-shared research in universities and national laboratories to applied research, development, and field validations in full partnership with private sector manufacturers.

Building Technology, State and Community Programs - research and development to improve the energy efficiency of appliances, building equipment, and the building envelope complemented by programs designed to move advanced technologies into the marketplace and produce near-term energy savings with associated economic and environmental benefits.

Federal Energy Management Program - reduction in the cost of government by advancing energy efficiency and water conservation, and the use of solar and other renewable energy as a means to reduce energy costs. Major emphasis is placed on using private sector investments to retrofit Federal facilities using energy savings performance contracting, thus stretching federal leveraging to the maximum.

Industrial Technology - cost shared research in critical technology areas identified by industry, with focus on high-risk but promising technologies that decrease industry's use of raw materials and depletable energy and reduce generation of wastes and pollutants.

Transportation Technology - development and commercialization of transportation technologies which can radically alter current projections of U.S. and world demand for energy, particularly oil, and reduce the associated environmental impacts such as greenhouse gas emissions.

Coal Research and Development - research and development of coal technologies to meet future national energy and environmental demands and to position the U.S. coal industry to respond to growing export market opportunities while maintaining our national energy security.

Petroleum Research and Development - research and development of increased domestic oil production technology, enhanced processing and utilization technologies, and reservoir life extension.

Gas Research and Development - research and development of natural gas exploration, production, processing, and storage technologies.

Clean Coal Technology - joint federal and private industry development of promising advances in coal-based technologies and demonstration of commercial marketplace potential.

Nuclear Energy Research Initiative - support R&D to address the key issues affecting the future use of nuclear power. Through competitively selected, peer reviewed projects by universities, laboratories, and industry participants, research focuses on the development of advanced nuclear technologies including advanced (Generation IV) reactor systems, and power conversion cycles, proliferation resistant reactor and fuel concepts, advanced nuclear fuels, amelioration of nuclear waste, and fundamental science.

Nuclear Energy Plant Optimization Program (NEPO) - supports R&D to ensure that the current fleet of 104 licensed reactors operate with improved efficiency and are available for electricity production beyond the 2020-2025 time frame, as recommended by the President's Committee of Advisors on Science and Technology. NEPO R&D activities are identified based on input from electric utilities, national laboratories, the Nuclear Regulatory Commission, universities, and other stakeholders, and are cost shared with industry.

Strategic Petroleum Reserve - operation and maintenance of the nation's emergency stored oil supply at four sites in Texas and Louisiana and the operation and maintenance of the Northeast Home Heating Oil Reserve. Revenues include \$184 million earned from companies that deferred oil deliveries to the reserve and will repay the Department in additional quantities of oil to be delivered in the future. (See Note 9).

Naval Petroleum Reserves - the Naval Petroleum and Oil Shale Reserves program (NPOSR) operates a Government-owned oil field in Wyoming (Naval Petroleum Reserve Numbered 3), and administers leases and monitors environmental compliance on Reserve land in California (Naval Petroleum Reserve Numbered 2). All proceeds from sales and royalties from leased acreage were returned to Treasury.

NOSRs -1 and -3, located in Colorado, were transferred to the Department of the Interior as mandated by the National Defense Authorization Act for FY 1998 (Public Law 105-85), although some environmental monitoring responsibility remains with the Department of Energy. During FY 2001, NOSR-2, an undeveloped property located in Utah, was transferred to the Ute Indian Tribe in accordance with the Floyd D. Spence National Defense Authorization Act for FY 2001 (P.L. 106-398). The Act provides for the transfer of the majority of NOSR-2 to the Tribe, and the remainder to the Department of the Interior.

This action will leave NPR-3 and the Rocky Mountain Oilfield Testing Center, co-located with NPR-3, as the only remaining NPOSR assets. NPOSR is directing resources toward enhancing the Rocky Mountain Oilfield Testing Center for public and private research and development.

Power Marketing Administrations - 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.

Elk Hills School Land Fund - subsequent to the sale of the Naval Petroleum Reserves -1 to Occidental Petroleum in 1998 and pursuant to Congressional directive, \$298 million (9 percent of the net sales proceeds) was set-aside in a special Treasury account. Through annual Congressional directives, the Department of Energy makes payment to the State of California State Teachers' Retirement Fund. In fiscal year 2001, the Department made a payment of \$36 million.

Nuclear Energy Technologies - the Nuclear Energy Technologies program focuses not only on the traditional goals of safety and cost-competitiveness, but of equal importance, on the fuel cycle and overall systems aspects that make nuclear energy sustainable in terms of the consumption of fuel and structural materials, and its ultimate radioactive waste products. The Generation IV Technology Roadmap will provide a comprehensive R&D plan to close existing technology gaps and permit the design and construction of Generation IV systems.

The Department initiated studies in FY 2001 to assess improvements needed to Advanced Light Water Reactor technology to improve economic competitiveness; assess the feasibility of small reactors in remote regions; and plan and implement activities for commercial applications of the gas reactor technology being developed for nuclear weapons material disposition.

Advanced Accelerator Applications - the Advanced Accelerator Applications (AAA) program is designed to make important advances for the Nation in areas of: energy security; national security; science and technology; and improving the U.S. education infrastructure. The mission of the AAA program is to conduct scientific, engineering research, development and demonstration on (1) transmutation of spent nuclear fuel and waste; (2) accelerator production of tritium as a backup of technology; (3) materials science; and (4) other advanced accelerator applications. Its major component is the development, design, and construction of a new facility to support U.S. advanced nuclear technology research in the 21st century.

Energy Information Administration - The Energy Information Administration functions as an independent statistical/analytical agency, develops and maintains a comprehensive energy database, publishes a wide variety of energy reports and analysis as required by law, and responds to energy information inquiries from the Department's decision and policymakers, the Congress, other government entities, and the general public. Information disseminated includes data on energy reserves, production, distribution, consumption, prices, technology, and related international economic and financial market information.

21. Supporting Schedule of Net Cost for Science

(in millions)

	<u>FY 2001</u>	<u>FY 2000</u>
Biological and environmental research	\$ 425	\$ 397
Fusion energy sciences	263	237
Basic energy sciences	685	665
High energy physics	700	675
Nuclear physics	391	379
Advanced scientific computing research	122	137
Small business innovative research / technology transfer	94	86
Technical information management program	10	11
Advanced radioisotope power system	31	35
University nuclear science and reactor support	15	15
Isotope production and distribution		
Program costs	\$ 27	\$ 32
Less earned revenues	<u>(8)</u>	<u>(7)</u>
	19	25
Other science activities	3	4
Total net cost for science	\$ 2,758	\$ 2,666

SCIENCE ACTIVITIES - provide science and tools needed to develop energy technology options, to understand the health and environmental implications of energy activities, and to understand the fundamental nature of energy and matter; provide large scale facilities required in natural sciences to ensure U.S. leadership in the search for knowledge; and apply research and development competencies to help ensure the availability of scientific talent.

Biological and Environmental Research - fundamental science in the pursuit of understanding the consequences to health and the environment of energy production, development, and use, including the Department's support of the national Human Genome and Global Climate Change programs, and providing unique national user facilities for the scientific community.

Fusion Energy Sciences - research and development needed for an economically and environmentally attractive fusion energy source, namely advancing plasma science, developing fusion science, technology, and plasma confinement innovations, and pursuing fusion energy science and technology as a partner in the international effort.

Basic Energy Sciences - fundamental research on materials sciences, chemical sciences, geosciences, biosciences, and engineering sciences that underpins the Department's missions in energy and the environment, that advances energy related basic science on a broad front, and that provides unique national user facilities for the scientific community.

High Energy Physics - research to understand the nature of matter and energy at the most fundamental level, as well as the basic forces which govern all processes in nature, that requires accelerators and detectors utilizing state-of-the-art technologies in many areas, including fast electronics, high speed computing, superconducting magnets, and high power radio-frequency devices.

Nuclear Physics - research to understand the structure and properties of atomic nuclei and the fundamental forces between the constituents that form the nucleus. Nuclear processes determine essential physical characteristics of our universe and the composition of the matter that forms it.

Advanced Scientific Computing Research - research that extends from fundamental investigations to technology development, which includes high performance computing and communications, information infrastructure, advanced energy concepts, and technology transfer research.

Small Business Innovative Research/Small Business Technology Transfer - research and development support for energy related technology that will significantly benefit U.S. businesses, including a pilot technology transfer program initiative.

Technical Information Management Program - activities to direct, coordinate, and implement the management and dissemination of scientific and technical information resulting from the Department's research and development and environmental programs. The program also provides worldwide energy information to the Department, U.S., industry, academia, and the public through scientific and technical information exchange agreements.

Advanced Radioisotope Power System - development, demonstration, testing, and delivery of radioisotope power systems for special national security applications and NASA's space exploration missions.

University Nuclear Science and Reactor Support - provides assistance to the Nation's university nuclear engineering programs including reactor fuel assistance and instrumentation and equipment upgrades for university research reactors.

Isotope Production and Distribution - serve the national need for a reliable supply of isotope products and services for medicine, industry, and research by developing new or improved isotope products and services that enable medical diagnoses and therapy, and other applications that are in the national interest.

22. Supporting Schedule of Net Cost for Environmental Quality**(in millions)**

	<u>FY 2001</u>	<u>FY 2000</u>
Uranium enrichment decontamination and decommissioning		
Program costs	\$ 369	\$ 288
Less earned revenues		
Public	(31)	(41)
Intragovernmental	<u>(142)</u>	<u>(123)</u>
	\$ 196	\$ 124
Civilian radioactive waste management		
Program costs	\$ 401	\$ 403
Contingent liability costs (See Note 17)	-	1,500
Less earned revenues		
Gross revenues, public	(803)	(801)
Gross revenues, intragovernmental	(737)	(628)
Deferred revenue adjustment	<u>1,326</u>	<u>1,134</u>
	187	1,608
ANL - West operations	45	50
Uranium programs	29	39
Fast flux test facility	41	42
Nuclear facilities management	45	59
EM privatization	55	372
Site project completion	1,029	1,181
Defense facilities closure projects	1,413	1,407
Post 2006 completion	2,804	2,605
Technology development	281	258
Legacy waste cleanup adjustment	(5,909)	(5,935)
Total net cost for environmental quality	\$ 216	\$ 1,810

FY 2000 amounts have been restated to conform with the FY 2001 presentation in order to reflect changes in the Department's budget structure.

ENVIRONMENTAL QUALITY ACTIVITIES - understand and reduce environmental, safety, and health risks and threats and develop the technologies and institutions required for solving domestic and global environmental problems.

Uranium Enrichment Decontamination and Decommissioning - consists of facility decommissioning and related environmental cleanup activities at the uranium enrichment plants in Kentucky, Ohio, and Tennessee, and, additionally, provides for partial reimbursement of remediation costs attributable to other uranium and thorium purchased by the Federal government. 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 \$142 million and \$123 million for FY 2001 and 2000, respectively.

Civilian Radioactive Waste Management - development and management of a permanent Federal repository for spent nuclear fuel and high-level radioactive waste in a manner that assures public and worker safety and protects the environment. 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 assessed in FY 2001 and FY 2000 totaled \$716 million and \$707 million, respectively. Interest earned on fees owed and on accumulated funds in excess of those needed to pay current program costs totaled \$824 million and \$722 million for FY 2001 and FY 2000, respectively. Adjustments are made annually to defer the recognition of revenues until earned (i.e., as costs are incurred for the Civilian Radioactive Waste Management program). In FY 2000, the Department recorded a \$1,500 million increase in its estimated liabilities associated with spent nuclear fuel litigation.

Argonne National Laboratory-West (ANL-W) Operations - this program maintains and operates essential facilities at ANL-W; safely and securely managing all special nuclear materials at ANL-W; and deactivating unneeded facilities.

Uranium Programs - manage the Department's excess uranium and depleted uranium hexafluoride inventories, pre-existing contractual liabilities, and maintain nonleased facilities in a safe and environmentally sound condition.

Fast Flux Test Facility - is a U.S. Government-owned 400 megawatt, sodium-cooled research reactor located on the Hanford Site near Richland, Washington. In December 2001, after a review of possible missions and future commercial uses for the Fast Flux Test Facility, the Department determined that restart of the FFTF is impracticable. Accordingly, activities to permanently deactivate the facility are underway, and the Department will write off facilities and equipment whose net book value exceeds \$60 million during FY 2002.

Nuclear Facilities Management - in the FY 2001 Energy and Water Appropriation, this program was formed from the previous "Termination Costs" program to more accurately represent the activities being performed at Argonne National Laboratory-West (ANL-W). The mission of this program includes the shutdown and deactivation of the Experimental Breeder Reactor-II (EBR-II) at ANL-W and carrying out the long-term treatment and management of DOE's sodium-bonded spent nuclear fuel.

EM Privatization - provides for the privatization of projects at the Oak Ridge and Idaho Operations Offices and allows the Department to reimburse contractors in the event the Government incurs liabilities for termination of privatization contracts.

Site/Project Completion - provides for cleanup for sites and/or projects that will be completed by FY 2006 at national laboratories and other facilities where the Department will continue to conduct missions beyond 2006.

Defense Facilities Closure Projects - provides for cleanup of designated sites for accelerated closure. EM's goal is to cleanup these sites by 2006. After the cleanup mission is complete at these sites, no further Departmental mission is envisioned, except for long-term surveillance and maintenance and the sites will be available for alternative uses.

Post 2006 Completion - provides for cleanup projects that are projected to continue well beyond 2006. As cleanup is completed, it will be necessary for EM to maintain a presence at most sites to monitor, maintain, and provide information on the contained residual contamination. These activities will be necessary to ensure that the reduction in risk to human health is maintained.

Technology Development - research and development of new more effective and less expensive technological remedies to the environmental and safety problems of the Environmental Management Program. The new technologies are necessary to reduce risks to humans and the environment, reduce cleanup cost, and resolve significant related problems for which no solutions currently exist. Operating expenditures related to legacy waste cleanup activities represent a reduction of the Department's environmental liabilities and are therefore reflected as a legacy waste cleanup adjustment. These costs are excluded from current year program expenses since the expense was accrued in prior years when the Department recorded the environmental liabilities.

Legacy Waste Cleanup Adjustment - current year operating expenditures for the remediation of contaminated facilities and wastes generated from past operations represent a reduction of the Department's environmental liabilities. These expenditures are excluded from current year program expenses since the expense was accrued in prior years when the Department recorded the environmental liabilities.

23. Supporting Schedule of Net Cost for Other Programs

(in millions)

	<u>FY 2001</u>		<u>FY 2000</u>
Inspector General	\$ 34		\$ 33
Facility safety	65		62
Health studies	89		98
Federal Energy Regulatory Commission			
Program costs	\$ 191		\$ 174
Less earned revenues with the public	<u>(190)</u>		<u>(178)</u>
		1	(4)
Reimbursable and cooperative work programs			
Intragovernmental gross costs	\$ 1,436		\$ 1,375
Less intragovernmental revenues	<u>(1,428)</u>		<u>(1,331)</u>
Intragovernmental net costs	\$ 8		\$ 44
Gross costs with the public	312		537
Less earned revenues from the public	<u>(303)</u>		<u>(522)</u>
Net costs with the public	\$ 9		\$ 15
Total reimbursable work program net costs		17	59
Technology transfer activities			
Program costs	70		86
Less earned revenues with the public	<u>(72)</u>		<u>(85)</u>
		(2)	1
Other revenues and costs of services provided			
Intragovernmental gross costs	\$ 12		\$ 18
Less intragovernmental revenues	<u>(52)</u>		<u>(31)</u>
Intragovernmental net revenues	\$ (40)		\$ (13)
Gross costs with the public	64		29
Less earned revenues from the public	<u>(52)</u>		<u>(37)</u>
Net revenues with the public	\$ 12		\$ (8)
Total other net revenues		(28)	(21)
Other programs		31	2
Total net costs for other programs	\$ 207		\$ 230

Inspector General - The Office of Inspector General conducts investigations, audits, and inspections to detect and prevent fraud, abuse, and violations of law, and promotes economy, efficiency, and effectiveness of the Department's operations.

Facility Safety - The Office of Environment, Safety and Health provides Departmental management with technical assistance and conducts independent oversight in areas of nuclear safety, occupational health and safety, environmental compliance implementation assistance including the National Environmental Policy Act activities, and safety assistance. These are the bases for such initiatives as the Integrated Safety Management System formulated for improving safety Department-wide.

Health Studies - The Office of Environmental Safety and Health Evaluation conducts health studies which include Occupational Medicine which is medical surveillance of current and former workers, Epidemiologic Studies which is surveillance of worker injury and illnesses, Public Health Activities which encompasses health studies, health education, and other health related activities at the Department's sites, International Health Programs which provide health related studies and activities in the Marshall Islands, the former Soviet Union, and Japan through the Radiation Effects Research Foundation.

Federal Energy Regulatory Commission - The Federal Energy Regulatory Commission (FERC) is an independent regulatory organization within the Department of Energy 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. These revenues are returned to the Department of Treasury when collected.

Reimbursable and Cooperative Work Programs - The Department performs work for other Federal agencies and private companies on a reimbursable work basis and on a cooperative work basis. Whereas reimbursable work is generally not the Department's direct mission, but part of the customer's mission, cooperative work is part of the Department's direct mission. Reimbursable work is financed by funds of Federal agencies ordering the work or by cash advances from non-Federal customers, and the Department receives no appropriated funds for such work or services. Cooperative work, however, is financed by funds appropriated to the Department that may be used in a cooperative effort with one or more Federal or non-Federal participants. Authorities for the Department to perform reimbursable work include the Economy Act of 1932, the Atomic Energy Act of 1954, Intergovernmental Cooperation Act of 1968, Intergovernmental Personnel Act of 1970, and Department of Energy Organization Act of 1977. Authorities for performance of cooperative work include Public Law 98-438, the Energy Reorganization Act of 1974, section 107(a), and Public Law 95-224, the Federal Grant and Cooperative Agreements Act of 1977.

The Department's policy is to establish prices for materials and services provided to public entities at the Department's full cost and to other Federal agencies at the Department's full cost less depreciation. In some cases, the full cost information reported by the Department in accordance with OMB's Statement of Federal Financial Accounting Standards Number 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.

OMB's Statement of Federal Financial Accounting Standards Number 7, *Accounting for Revenue and Other Financing Sources*, requires that when goods and services are provided to the public or another Federal agency, reporting entities should disclose practices where revenue received is less than the full cost of the goods and services provided, as well as an estimate, if practicable, of the amount of revenue foregone. The amount for reimbursable and cooperative work was estimated by computing the difference between the full cost reported for the financial statement purposes, including appropriate allocations of costs, and the revenue reported for financial statement purposes, including collections of the Federal administrative charge. Accordingly, the Department estimates revenue foregone for reimbursable and cooperative work activities for FY 2001 and FY 2000 amounted to \$17 million and \$59 million, respectively.

Technology Transfer Activities - The Department 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. This program is primarily implemented through Cooperative Research and Development Agreements between the Department's laboratories and the private sector (may include industry, non-profits, universities, state or local governments, or individuals). The non-Federal party may provide funds, personnel, services, facilities, equipment or other resources to conduct specific research and development work consistent with the mission of the laboratory.

24. Costs Not Assigned to Programs	(in millions)	
	<u>FY 2001</u>	<u>FY 2000</u>
Change in unfunded environmental liability estimates ^(Note 15)	\$ 10,513	\$ 9,845
Change in unfunded safety and health liabilities ^(Note 14)	(59)	(43)
Change in compensation program for occupational illnesses ^(Note 14)	1,600	1,600
Other	(100)	(266)
Total costs not assigned to programs	\$ 11,954	\$ 11,136

25. Prior Period Adjustments	(in millions)	
	FY 2001	FY 2000
Custodial revenues	\$ (488)	\$ -
Environment, safety and health liability ^(Note 14)	597	-
Other	(80)	109
Total prior period adjustments	\$ 29	\$ 109

Custodial Revenues

Custodial revenues collected by the Department's Western Area Power Administration were reported in prior years as earned revenues of the Department in error. The cumulative effects of these errors resulted in an overstatement of appropriated capital owed to Treasury and cumulative results of operations balances as of September 30, 2000.

26. Statement of Budgetary Resources**(in millions)**

The FY 2000 amounts have been restated to conform with the FY 2001 presentation. These restatements included the following:

- The Department restated the FY 2000 budgetary resources associated with the Bonneville Power Administration's revolving fund. The restated balances give recognition to BPA's unique funding status as a government corporation with a permanent and indefinite appropriation. BPA's budgetary resources available to fund its obligations are broader than most other Federal agencies. Without a fiscal year limitation, BPA has the authority to incur obligations for authorized purposes and may do so in excess of borrowing authority and cash in its revolving fund. Any such obligations that are not satisfied during the current fiscal year are not considered a use of the current year's budgetary resources. Instead, they represent commitments against future resources to be derived from BPA's ability to recover its costs through sales of power and transmission services to its customers. In recognition of this unique budgetary authority, the Department restated BPA's FY 2000 Statement of Budgetary Authority which had the effect of eliminating obligated carryforward balances and limiting obligations incurred to those satisfied during the fiscal year which were recognized as accrued costs and/or cash outlays. These restatements resulted in the following reductions: \$741 million of Budgetary Resources, \$175 million of Obligations, and \$103 million of Outlays.
- Clarification of Treasury guidance resulted in the removal of balances related to allocation accounts belonging to other Federal agencies, reducing Budgetary Resources by \$5 million.
- Treasury guidance also resulted in the removal of unavailable receipts invested by the Department from the Statement of Budgetary Resources. This is merely a presentation change; total Budgetary Resources were not affected.

Details of Obligations Incurred:

	<u>FY 2001</u>	<u>FY 2000</u>
Direct, subject to apportionment	\$ 20,504	\$ 18,129
Direct, not subject to apportionment	4,914	2,968
Reimbursable, subject to apportionment	2,452	2,568
Total obligations incurred	\$ 27,870	\$ 23,665

Adjustments to Beginning Balances of Budgetary Resources:

	<u>FY 2001</u>	<u>FY 2000</u>
Prior year unobligated balance, net - end of period		
Available, adjusted for BPA FY 2000 restatement	\$ 1,899	\$ 2,077
Not available	753	1,065
Total	\$ 2,652	\$ 3,142
Prior year balance temporarily not available pursuant to public law	271	325
Prior year balance to be carried forward	\$ 2,923	\$ 3,467
Net transfers of prior year unobligated balances	735	9
Restatements		
Elimination of non-DOE allocation accounts		(5)
Restated BPA unobligated balance, start of period		(607)
Current year unobligated balance, start of period, net of transfers	\$ 3,658	\$ 2,864

Unobligated Balances Not Available:

	<u>FY 2001</u>	<u>FY 2000</u>
United States Enrichment Corporation Fund	\$ 710	\$ 478
Reimbursable work/collections in excess of amount anticipated	175	234
Prior year deobligations in excess of apportioned amount	13	36
Expired appropriations and other amounts not apportioned	8	5
Total unobligated balances not available	\$ 906	\$ 753

Unobligated balances not available represent budgetary resources that have not been apportioned to the Department.

Reconciliation to the Budget:

	FY 2001			FY 2000		
	Budgetary Resources	Obligations Incurred	Outlays	Budgetary Resources	Obligations Incurred	Outlays
Consolidated Statement of Budgetary Resources	\$ 30,553	\$ 27,870	\$ 18,905	\$ 26,317	\$ 23,665	\$ 17,384
Budgetary resources temporarily not available for obligation but included as resources in the U.S. Budget	451			125		
BPA restatements				741	175	103
Other BPA adjustments	248	(365)		(251)	(250)	(103)
Eliminations	523	523	419	525	525	420
Other	21	(1)	(2)	(13)	(13)	1
Budget of the United States Government	\$ 31,796	\$ 28,027	\$ 19,322	\$ 27,444	\$ 24,102	\$ 17,805

Other BPA adjustments consist primarily of adjustments made to bring BPA original budget execution data submission into agreement with the President's Budget.

27. Transfers In, Net**(in millions)**

	FY 2001	FY 2000
Transfers in		
Oil transferred from the Department of the Interior	\$ -	\$ 568
Other capital assets transferred from other agencies	9	-
Subtotal	\$ 9	\$ 568
Transfers out		
Energy Employees' Occupational Illness Compensation Act liability ^(See Note 14)	1,600	-
Other	(71)	(47)
Subtotal	\$ 1,529	\$ (47)
Total transfers in, net	\$ 1,538	\$ 521

Oil Transferred from the Department of the Interior

In FY 2000, the Department entered into a Royalty-In-Kind exchange arrangement with the Department of the Interior's Mineral Management Service to receive 28 million barrels of crude oil from Gulf of Mexico Federal offshore leases. The market value of this oil was considered and recorded as an intragovernmental transfer.

28. Financing Sources Yet to Be Provided

(in millions)

	<u>FY 2001</u>	<u>FY 2000</u>
Change in unfunded environmental liability estimates ^(Note 15)	\$ 10,513	\$ 9,845
Change in unfunded safety and health liabilities ^(Note 14)	(59)	(43)
Change in unfunded actuarial liabilities and prepaid pension plan liabilities (Notes 9 and 16)	(262)	(321)
Change in Nuclear Waste Fund contingent liability ^(Note 17)	-	1,500
Compensation program for occupational illnesses ^(Note 14)	-	1,600
Change in other unfunded liabilities	10	12
Total financing sources yet to be provided	\$ 10,202	\$ 12,593

29. Custodial Activities

(in millions)

	FY 2001	FY 2000
Cash Collections		
Power marketing administrations	\$ 394	\$ 364
Petroleum Pricing Violation Escrow Fund	16	65
Other	15	15
Total cash collections for custodial activities	\$ 425	\$ 444

Power Marketing Administrations

The Southeastern, Southwestern, and Western Area power marketing administrations are responsible for collecting and remitting to the Department of Treasury revenues attributable to the hydroelectric power projects owned and operated by the U.S. Department of Defense, Army Corps of Engineers; the U.S. Department of Interior, Bureau of Reclamation, and the U.S. 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 1970's and early 1980's. The Department also distributes funds to the U.S. Treasury and to the States, Possessions and Territories of the United States.

Consolidating Schedules

Consolidating Schedules - Balance Sheets

As of September 30, 2001 and 2000

(\$ in millions)

FY 2001

	Federal Energy Regulatory Commission	Power Marketing Administrations	All Other DOE Programs
ASSETS			
Intragovernmental			
Fund Balance with Treasury	\$ 52	\$ 977	\$ 11,657
Investments, Net			15,812
Accounts Receivable, Net		7	1,923
Regulatory Assets		5,236	
Other		11	17
Total Intragovernmental	\$ 52	\$ 6,231	\$ 29,409
Investments, Net			222
Accounts Receivable, Net	24	575	4,034
Inventory, Net			
Strategic Petroleum & Northeast Home Heating Oil Reserves			14,635
Nuclear Materials			21,693
Other		93	385
General Property, Plant, and Equipment, Net	15	5,056	14,356
Regulatory Assets		6,906	
Other		599	3,699
Total Assets	\$ 91	\$ 19,460	\$ 88,433
LIABILITIES			
Intragovernmental			
Accounts Payable	\$ 1	\$ 45	\$ 86
Debt		8,473	
Appropriated Capital Owed to Treasury		2,747	
Deferred Revenues		13	947
Other	25	48	647
Total Intragovernmental	\$ 26	\$ 11,326	\$ 1,680
Accounts Payable	12	368	3,302
Debt		6,241	
Deferred Revenues		901	15,632
Environmental Liabilities			238,349
Pension and Other Actuarial Liabilities		50	7,574
Other	33	50	2,682
Contingencies			2,028
Total Liabilities	\$ 71	\$ 18,936	\$ 271,247
NET POSITION			
Unexpended Appropriations	15	12	7,308
Cumulative Results of Operations	5	512	(190,122)
Total Net Position	\$ 20	\$ 524	\$ (182,814)
Total Liabilities and Net Position	\$ 91	\$ 19,460	\$ 88,433

		FY 2000					
Eliminations	Consolidated	Federal Energy Regulatory Commission	Power Marketing Administrations	All Other DOE Programs	Elimination	Consolidated	
\$ -	\$ 12,686	\$ 50	\$ 1,040	\$ 10,384	\$ -	\$ 11,474	
	15,812			12,748		12,748	
(\$1,373)	557		45	1,900	(\$1,405)	540	
	5,236		5,228			5,228	
(25)	3			21	(15)	6	
\$ (1,398)	\$ 34,294	\$ 50	\$ 6,313	\$ 25,053	\$ (1,420)	\$ 29,996	
	222			263		263	
	4,633	4	472	4,116		4,592	
	14,635			15,307		15,307	
	21,693			22,013		22,013	
	478		75	406		481	
	19,427	18	5,038	13,482		18,538	
	6,906		7,105			7,105	
	4,298		488	2,129		2,617	
\$ (1,398)	\$ 106,586	\$ 72	\$ 19,491	\$ 82,769	\$ (1,420)	\$ 100,912	
\$ (13)	\$ 119	\$ 1	\$ 61	\$ 81	\$ (10)	\$ 133	
	8,473		8,628			8,628	
	2,747		2,004			2,004	
(921)	39			876	(850)	26	
(464)	256	1	11	750	(560)	202	
\$ (1,398)	\$ 11,634	\$ 2	\$ 10,704	\$ 1,707	\$ (1,420)	\$ 10,993	
	3,682	6	168	3,113		3,287	
	6,241		6,488			6,488	
	16,533	4	644	13,850		14,498	
	238,349			234,267		234,267	
	7,624		48	7,118		7,166	
	2,765	40	46	4,918		5,004	
	2,028			2,030		2,030	
\$ (1,398)	\$ 288,856	\$ 52	\$ 18,098	\$ 267,003	\$ (1,420)	\$ 283,733	
	\$7,335	11	10	6,158		6,179	
	(189,605)	9	1,383	(190,392)		(189,000)	
\$ -	\$ (182,270)	\$ 20	\$ 1,393	\$ (184,234)	\$ -	\$ (182,821)	
\$ (1,398)	\$ 106,586	\$ 72	\$ 19,491	\$ 82,769	\$ (1,420)	\$ 100,912	

Consolidating Schedules of Net Cost

For the Years Ended September 30, 2001 and 2000

(\$ in millions)

FY 2001

	Federal Energy Regulatory Commission	Power Marketing Administrations	All Other DOE Programs
Costs			
National Nuclear Security Activities			
Program Costs	\$ -	\$ -	\$ 6,050
Earned Revenues			
Net Cost of National Nuclear Security Activities	\$ -	\$ -	\$ 6,050
Energy Resources			
Program Costs	\$ -	\$ 4,959	\$ 2,074
Earned Revenues		(4,699)	(201)
Net Cost of Energy Resources Programs	\$ -	\$ 260	\$ 1,873
Science			
Program Costs	\$ -	\$ -	\$ 2,792
Earned Revenues			(8)
Net Cost of Science Programs	\$ -	\$ -	2,784
Environmental Quality			
Program Costs	\$ -	\$ -	\$ 603
Earned Revenues			(387)
Net Cost of Environmental Quality Programs	\$ -	\$ -	\$ 216
Other Programs			
Program Costs	\$ 191	\$ -	\$ 2,196
Earned Revenues	(190)		(1,990)
Net Cost of Other Programs	\$ 1	\$ -	\$ 206
Costs Not Assigned to Programs	\$ -	\$ -	\$ 11,858
Net Cost of Operations	\$ 1	\$ 260	\$ 22,987

		FY 2000				
Eliminations	Consolidated	Federal Energy Regulatory Commission	Power Marketing Administrations	All Other DOE Programs	Eliminations	Consolidated
\$ (9)	\$ 6,041	\$ -	\$ -	\$ 5,820	\$ -	\$ 5,820
\$ (9)	\$ 6,041	\$ -	\$ -	\$ 5,820	\$ -	\$ 5,820
\$ - 18	\$ 7,033 (4,882)	\$ -	\$ 3,518 (3,783)	\$ 1,807 (26)	\$ -	\$ 5,325 (3,809)
\$ 18	\$ 2,151	\$ -	\$ (265)	\$ 1,781	\$ -	\$ 1,516
\$ (26)	\$ 2,766 (8)	\$ -	\$ -	\$ 2,686 (7)	\$ (13)	\$ 2,673 (7)
\$ (26)	\$ 2,758	\$ -	\$ -	\$ 2,679	\$ (13)	\$ 2,666
\$ -	\$ 603 (387)	\$ -	\$ -	\$ 2,269 (459)	\$ -	\$ 2,269 (459)
\$ -	\$ 216	\$ -	\$ -	\$ 1,810	\$ -	\$ 1,810
\$ (83) 83	\$ 2,304 (2,097)	\$ 174 (178)	\$ -	\$ 2,322 (2,088)	\$ (82) 82	\$ 2,414 (2,184)
\$ -	\$ 207	\$ (4)	\$ -	\$ 234	\$ -	\$ 230
\$ 96	\$ 11,954	\$ -	\$ -	\$ 11,043	\$ 93	\$ 11,136
\$ 79	\$ 23,327	\$ (4)	\$ (265)	\$ 23,367	\$ 80	\$ 23,178

Consolidating Schedules of Changes in Net Position

For the Years Ended September 30, 2001 and 2000

(\$ in millions)

	FY 2001		
	Federal Energy Regulatory Commission	Power Marketing Administrations	All Other DOE Programs
Net Cost of Operations	\$ (1)	\$ (260)	(22,987)
Financing Sources (Other than Exchange Revenues)			
Appropriations Used	(15)	9	18,632
Other Non-Exchange Revenues			66
Imputed Financing	8	1	1,661
Transfers-in			7,765
Transfers-out	4		(6,212)
Net Results of Operations	\$ (4)	\$ (250)	\$ (1,075)
Prior Period Adjustments		(621)	650
Net Change in Cumulative Results of Operations	\$ (4)	\$ (871)	\$ (425)
Unrealized Holding Gain on Investments			695
Increase in Unexpended Appropriations	4	2	1,150
Change in Net Position	\$ -	\$ (869)	\$ 1,420
Net Position - Beginning of Period	20	1,393	(184,234)
Net Position - End of Period	\$ 20	\$ 524	\$ (182,814)

Consolidating Schedules of Budgetary Resources

For the Years Ended September 30, 2001 and 2000

(\$ in millions)

	FY 2001		
	Federal Energy Regulatory Commission	Power Marketing Administrations	All Other DOE Programs
BUDGETARY RESOURCES			
Budgetary Authority	\$ 3	\$ 410	\$ 20,450
Unobligated Balances - Beginning of Period, Net of Transfers	7	473	3,178
Spending Authority from Offsetting Collections	175	4,969	2,053
Actual Recoveries of Prior Year Obligations			25
Authority Not Available			(667)
Total Budgetary Resources	\$ 185	\$ 5,852	\$ 25,039
STATUS OF BUDGETARY RESOURCES			
Obligations Incurred	\$ 174	\$ 5,621	\$ 22,598
Unobligated Balances Available	11	222	1,544
Unobligated Balances Not Available		9	897
Total Status of Budgetary Resources	\$ 185	\$ 5,852	\$ 25,039
OUTLAYS			
Obligations Incurred	\$ 174	\$ 5,621	\$ 22,598
Less Spending Authority from Offsetting Collections and Actual Recoveries of Prior Year Obligations	(175)	(4,969)	(2,078)
Obligated Balance, Net - Beginning of Period	25	561	8,033
Less Obligated Balance, Net - End of Period	(26)	(714)	(9,726)
Total Outlays	\$ (2)	\$ 499	\$ 18,827

		FY 2000				
Eliminations	Consolidated	Federal Energy Regulatory Commission	Power Marketing Administrations	All Other DOE Programs	Eliminations	Consolidated
\$ (79)	\$ (23,327)	\$ 4	\$ 265	\$ (23,367)	\$ (80)	\$ (23,178)
98	18,724	(8)	5	17,474	100	17,571
	66			10		10
	1,670	7	6	59		72
(7,756)	9			3,974	(3,406)	568
7,737	1,529	(3)		(3,430)	3,386	(47)
\$ -	\$ (1,329)	\$ -	\$ 276	\$ (5,280)	\$ -	\$ (5,004)
	29		105	4		109
\$ -	\$ (1,300)	\$ -	\$ 381	\$ (5,276)	\$ -	\$ (4,895)
	695			300		300
	1,156	8	(1)	3		10
\$ -	\$ 551	\$ 8	\$ 380	\$ (4,973)	\$ -	\$ (4,585)
	(182,821)	12	1,013	(179,261)		(178,236)
\$ -	\$ (182,270)	\$ 20	\$ 1,393	\$ (184,234)	\$ -	\$ (182,821)

		FY 2000				
Eliminations	Consolidated	Federal Energy Regulatory Commission	Power Marketing Administrations	All Other DOE Programs	Eliminations	Consolidated
\$ (419)	\$ 20,444	\$ 3	\$ 433	\$ 18,120	\$ (420)	\$ 18,136
-	3,658	4	296	2,564	-	2,864
(104)	7,093	175	3,363	2,387	(105)	5,820
	25			61		61
	(667)		(294)	(270)		(564)
\$ (523)	\$ 30,553	\$ 182	\$ 3,798	\$ 22,862	\$ (525)	\$ 26,317
\$ (523)	\$ 27,870	\$ 175	\$ 3,325	\$ 20,690	\$ (525)	\$ 23,665
	1,777	7	473	1,419		1,899
	906			753		753
\$ (523)	\$ 30,553	\$ 182	\$ 3,798	\$ 22,862	\$ (525)	\$ 26,317
\$ (523)	\$ 27,870	\$ 175	\$ 3,325	\$ 20,690	\$ (525)	\$ 23,665
104	(7,118)	(175)	(3,363)	(2,448)	105	(5,881)
	8,619	20	555	7,644		8,219
	(10,466)	(25)	(561)	(8,033)		(8,619)
\$ (419)	\$ 18,905	\$ (5)	\$ (44)	\$ 17,853	\$ (420)	\$ 17,384

Consolidating Schedules of Financing

For the Years Ended September 30, 2001 and 2000

(\$ in millions)

FY 2001

	Federal Energy Regulatory Commission	Power Marketing Administrations	All Other DOE Programs
OBLIGATIONS AND NONBUDGETARY RESOURCES			
Obligations Incurred	\$ 174	\$ 5,621	\$ 22,598
Less Spending Authority from Offsetting Collections and Adjustments			
Earned Reimbursements			
Collected	(175)	(4,896)	(2,085)
Receivable from Federal Sources		(45)	2
Change in Unfilled Orders (Decreases) Increases		(28)	26
Recoveries of Prior-Year Obligations		(1)	(24)
Financing Imputed for Cost Subsidies	8	1	1,661
Transfers, Net	4		1,134
Exchange Revenues Not In the Budget	(14)	(148)	(505)
Other	(3)		
Total Obligations as Adjusted, and Nonbudgetary Resources	\$ (6)	\$ 504	\$ 22,807
RESOURCES THAT DO NOT FUND NET COST OF OPERATIONS			
Change in Amount of Goods, Services, and Benefits Ordered but Not Yet Received or Provided	\$ (2)	\$ 11	\$ (1,363)
Costs Capitalized on the Balance Sheet			
General Property, Plant, and Equipment	1	(331)	(2,070)
Purchases of Inventory		(23)	(300)
Financing Sources That Fund Costs of Prior Periods		1	(5,909)
Other		(380)	(1,600)
Total Resources that Do Not Fund Net Cost of Operations	\$ (1)	\$ (722)	\$ (11,242)
COSTS THAT DO NOT REQUIRE RESOURCES			
Depreciation and Amortization	\$ 3	\$ 338	\$ 1,418
Revaluation of Assets and Liabilities		15	(397)
Loss on Disposition of Assets		6	
Other	6	116	297
Total Costs that Do Not Require Resources	\$ 9	\$ 475	\$ 1,318
FINANCING SOURCES YET TO BE PROVIDED	\$ -	\$ 3	\$ 10,103
NET COST OF OPERATIONS	\$ 2	\$ 260	\$ 22,986

		FY 2000				
Eliminations	Consolidated	Federal Energy Regulatory Commission	Power Marketing Administrations	All Other DOE Programs	Eliminations	Consolidated
\$ (523)	\$ 27,870	\$ 175	\$ 3,325	\$ 20,690	\$ (525)	\$ 23,665
104	(7,052)	(175)	(3,205)	(2,130)	102	(5,408)
	(43)		(158)	12		(146)
	(2)	1	1	(257)	3	(252)
	(25)			(61)		(61)
	1,670	7	6	59		72
400	1,538	(3)		124	400	521
	(667)	(4)	(336)	(451)		(791)
	(3)	(3)				(3)
\$ (19)	\$ 23,286	\$ (2)	\$ (367)	\$ 17,986	\$ (20)	\$ 17,597
\$ -	\$ (1,354)	\$ (2)	\$ 12	\$ (133)	\$ -	\$ (123)
2	(2,398)	(3)	(426)	(1,540)	7	(1,962)
	(323)		(14)	(973)		(987)
	(5,908)		4	(5,936)		(5,932)
	(1,980)		62			62
\$ 2	\$ (11,963)	\$ (5)	\$ (362)	\$ (8,582)	\$ 7	\$ (8,942)
	\$ 1,759	\$ 3	\$ 330	\$ 992		\$ 1,325
	(382)			206		206
	6		11			11
	419		111	277		388
\$ -	\$ 1,802	\$ 3	\$ 452	\$ 1,475	\$ -	\$ 1,930
\$ 96	\$ 10,202	\$ -	\$ 12	\$ 12,488	\$ 93	\$ 12,593
\$ 79	\$ 23,327	\$ (4)	\$ (265)	\$ 23,367	\$ 80	\$ 23,178

Consolidating Schedules of Custodial Activities

For the Years Ended September 30, 2001 and 2000

(\$ in millions)

FY 2001

	Federal Energy Regulatory Commission	Power Marketing Administrations	All Other DOE Programs
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SOURCES OF COLLECTIONS

Cash Collections

Interest

\$ -	\$ -	\$ 14
------	------	-------

Penalties and Fines

3

Other

14	394
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Net Collections

\$ 14	\$ 394	\$ 17
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Accrual Adjustment

10

Total Revenue

\$ 14	\$ 394	\$ 27
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DISPOSITION OF REVENUE

Transferred to Others

Department of the Treasury

\$ -	\$ (248)	\$ (10)
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Others

(14)	(108)	(30)
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Increase (Decrease) in Amounts to be Transferred

14

Retained by DOE

(38)	(1)
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Net Custodial Activity

\$ -	\$ -	\$ -
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Required Supplementary Information

This section of the report provides required supplementary information for the Department on deferred maintenance, required supplementary stewardship information, budgetary resources by major budget account and intra-governmental balances.

Deferred Maintenance

Deferred maintenance information is a requirement under the Office of Management and Budget's Statement of Federal Financial Accounting Standards Number 6, *Accounting for Property, Plant and Equipment* and Statement of Federal Financial Accounting Standards Number 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 Standard 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 (1) buildings, and other structures and facilities and (2) capital equipment.

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.

In accordance with standards identified in the National Association of College and University Business Officers, in "Managing the Facilities Portfolio", the acceptable operation condition standard is equal to a Facility Condition Index (FCI) of ≤ 5 percent.

As of September 30, 2001, an amount of \$2,203 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 77 percent.

Capital Equipment

Pursuant to the cost/benefit considerations provided in Statement of Federal Financial Accounting Standards Number 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 specifications, and other methods, as appropriate.

An amount of \$237.7 million of deferred maintenance was estimated to be needed as of September 30, 2001, to return capital equipment assets to acceptable operating condition.

**REQUIRED SUPPLEMENTARY STEWARDSHIP REPORT
FOR RESEARCH AND DEVELOPMENT
(IN THOUSANDS)**

	<u>FY 2001</u>	<u>FY 2000</u>	<u>FY 1999</u>	<u>FY 1998</u>
BASIC				
NNSA and Other National Security				
Nonproliferation and Verification Research & Development	15,520	13,492	2,294	9,582
Total NNSA and Other National Security	<u>15,520</u>	<u>13,492</u>	<u>2,294</u>	<u>9,582</u>
Energy Resources				
Power Technologies	25,925	27,104	17,189	26,969
Building, Technology, State and Community Programs	41	3,000	3,000	3,016
Industrial Technology	32	—	—	—
Transportation Technology	28	—	—	—
Coal Research and Development	5,751	3,003	2,826	1,943
Power Marketing Administrations	3,090	1,373	732	3,379
Other Fossil Energy Activities	1,404	—	—	—
Total Energy Resources	<u>36,271</u>	<u>34,480</u>	<u>23,747</u>	<u>35,307</u>
Science				
Biological & Environmental Research	320,894	317,427	314,125	303,722
Fusion Energy Sciences	233,305	213,121	197,142	202,857
Basic Energy Sciences	592,778	609,900	585,284	571,788
High Energy Physics	552,508	527,720	548,658	494,312
Nuclear Physics	301,177	302,830	265,062	205,695
Advanced Scientific Computing Research	114,532	124,006	49,691	121,857
Small Business Innovative Research/ Technology Transfer	88,724	—	83,816	90,186
Superconducting Super Collider	—	—	8	4,379
Other Science Activities	896	1,045	1,886	—
Total Science	<u>2,204,814</u>	<u>2,096,049</u>	<u>2,045,672</u>	<u>1,994,796</u>
Environmental Quality				
Technology Development	33,832	39,478	60,103	57,386
Total Environmental Quality	<u>33,382</u>	<u>39,478</u>	<u>60,103</u>	<u>57,386</u>
Total Basic	<u>2,290,437</u>	<u>2,183,499</u>	<u>2,131,816</u>	<u>2,097,071</u>

**REQUIRED SUPPLEMENTARY STEWARDSHIP REPORT
FOR RESEARCH AND DEVELOPMENT
(IN THOUSANDS)**

	<u>FY 2001</u>	<u>FY 2000</u>	<u>FY 1999</u>	<u>FY 1998</u>
APPLIED				
NNSA and Other National Security				
Direct Stockpile Stewardship	277,290	—	—	—
Campaigns	1,138,268	—	—	—
Readiness in Technical Base & Facilities	640	—	—	—
Nonproliferation and Verification Research & Development	75,910	65,959	62,912	113,727
Stockpile Stewardship	—	1,126,296	1,085,516	985,968
Stockpile Management	—	86,808	55,544	36,709
Total NNSA and Other National Security	<u>1,492,108</u>	<u>1,279,063</u>	<u>1,203,972</u>	<u>1,136,404</u>
Energy Resources				
Power Technologies	116,582	97,217	140,133	112,086
Building, Technology, State and Community Programs	24,091	18,312	25,300	4,021
Industrial Technology	46,590	27,021	—	29,280
Transportation Technology	42,735	65,487	58,892	51,803
Coal Research and Development	95,855	50,053	47,105	48,582
Petroleum Research and Development	20,841	17,504	13,354	22,989
Gas Research and Development	11,611	48,028	42,578	43,759
Nuclear Energy Research Initiative	22,650	—	—	—
Nuclear Energy Plant Optimization Program	4,167	—	—	—
Power Marketing Administrations	10,780	10,470	10,470	10,470
Other Fossil Energy Activities	4,709	—	—	—
Other Energy Resource Activities	—	4,383	4,790	5,380
Total Energy Resources	<u>400,611</u>	<u>338,475</u>	<u>342,622</u>	<u>328,370</u>
Science				
Biological & Environmental Research	72,238	62,441	51,613	—
Advanced Scientific Computing Research	8,807	13,317	1,378	(4)
Isotope Production and Distribution	1,712	—	—	—
University and Science Education	—	—	(7)	3,409
Total Science	<u>82,757</u>	<u>75,758</u>	<u>52,984</u>	<u>3,405</u>
Environmental Quality				
Civilian Radioactive Waste Management	60,393	58,662	59,006	62,108
Technology Development	77,726	72,192	61,323	115,141
Total Environmental Quality	<u>138,119</u>	<u>130,854</u>	<u>120,329</u>	<u>177,249</u>
Total Applied	<u>2,113,595</u>	<u>1,824,150</u>	<u>1,719,907</u>	<u>1,645,428</u>

**REQUIRED SUPPLEMENTARY STEWARDSHIP REPORT
FOR RESEARCH AND DEVELOPMENT
(IN THOUSANDS)**

	<u>FY 2001</u>	<u>FY 2000</u>	<u>FY 1999</u>	<u>FY 1998</u>
DEVELOPMENT				
NNSA and Other National Security				
Readiness in Technical Base & Facilities	643,257	—	—	—
Nonproliferation and Verification Research & Development	73,083	88,922	95,237	85,860
Nuclear Safeguards and Security	21,499	—	—	—
Fissile Materials Disposition	6,006	49,921	43,906	49,533
Naval Reactors	604,473	633,531	588,597	588,534
Intelligence	8,775	6,488	4,375	—
Stockpile Stewardship	—	497,618	463,390	410,294
Total NNSA and Other National Security	<u>1,357,093</u>	<u>1,276,480</u>	<u>1,195,505</u>	<u>1,134,221</u>
Energy Resources				
Power Technologies	112,984	76,782	132,012	102,005
Building, Technology, State and Community Programs	45,257	36,367	22,804	16,161
Industrial Technology	114,607	108,666	131,175	91,686
Transportation Technology	193,362	192,981	145,605	150,534
Coal Research and Development	90,103	47,050	44,278	46,639
Petroleum Research and Development	34,004	28,559	21,788	34,483
Gas Research and Development	16,708	69,113	61,271	65,638
Clean Coal Technology	—	—	—	84,795
Nuclear Energy Research Initiative	—	18,119	5,866	—
Nuclear Energy Plant Optimization Program	—	833	—	—
Power Marketing Administrations	8,660	9,640	11,600	17,144
Other Fossil Energy Activities	6,134	—	—	—
Other Energy Resource Activities	—	5,650	6,849	8,982
Total Energy Resources	<u>621,819</u>	<u>588,110</u>	<u>576,399</u>	<u>618,067</u>
Science				
Advanced Radioisotope Power System	5,275	29,703	40,433	27,931
Total Science	<u>5,275</u>	<u>29,703</u>	<u>40,433</u>	<u>27,931</u>
Environmental Quality				
Civilian Research & Development	—	7,629	—	—
Uranium Programs	—	364	1,401	5,880
Technology Development	116,589	108,288	91,984	56,711
Termination Costs	—	—	81,937	—
Total Environmental Quality	<u>116,589</u>	<u>116,281</u>	<u>175,322</u>	<u>62,591</u>
Total Development	2,100,776	2,010,574	1,987,659	1,842,810
Total Research & Development	<u>\$6,504,808</u> ^{***}	<u>\$6,018,223</u> ^{***}	<u>\$5,839,382</u> ^{***}	<u>\$5,585,309</u> ^{***}

*** In accordance with SFFAS Number 8 Chapter 7, the Department applied the requirements of SFFAS Number 4 and the full amount invested in research and development was \$7,578,162 in FY 2001, \$6,810,217 in FY 2000, \$6,700,897 in FY 1999 and \$6,468,557 in FY 1998.

Required Supplementary Stewardship Information for Research and Development

NNSA and Other National Security

Directed Stockpile Work *Applied* - Activities providing the scientific understanding and engineering development capabilities necessary to support near-term and long-term requirements of the nuclear stockpile.

Campaigns *Applied* - Activities providing the scientific understanding of the nuclear package of the weapons systems in our to sustain our ability to certify the nuclear weapons stockpile, support stockpile refurbishment and life extensions and to provide the capabilities necessary to support maintenance and refurbishment in the absence of nuclear testing.

Readiness in Technical Base and Facilities *Applied & Development* - Activities ensuring that the weapons complex and its facilities and infrastructure are in place to manufacture and certify the 21st century nuclear weapons stockpile.

Nonproliferation & Verification R&D *Basic, Applied & Development* - Activities conducted to provide the science and technology required for treaty monitoring and material control, as well as the 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.

Nuclear Safeguards and Security *Development* - Activities related to systems development that may be used or shared with other federal agencies and private industry.

Fissile Materials Disposition *Development* - Activities included the development and demonstration of technologies that enable the Department and the world to dispose of surplus weapons effectively.

Naval Reactors *Development* - Activities included development, demonstration, improvement, and

safe operation of nuclear propulsion plants and reactor cores for application to submarines and surface ships.

Intelligence Development - Activities associated with assessing science and technologies and accomplishing the Intelligence Program.

Energy Resources

Power Technologies *Basic, Applied & Development* - Research was conducted in solar technologies and other renewable energy programs, including electric energy, geothermal, photovoltaic, hydrogen and hydropower.

Building Technology, State & Community Programs *Basic, Applied & Development* - Activities related to energy conservation for the building sector, including residential building, commercial building and retrofit technologies.

Industrial Technology *Basic, Applied & Development* - Activities conducted to support energy conservation and energy supply for the industry sector.

Transportation Technology *Basic, Applied & Development* - Activities conducted in support of energy conservation for the transportation sector, including automotive alternative fuels and electric vehicles.

Coal R&D *Basic, Applied & Development* - Activities related to improving acceptable technology for converting coal to gaseous fuels, improving methods for the direct combustion of coal, and advancing power conversion systems for generating electricity from coal.

Petroleum R&D *Applied & Development* - Activities conducted to support advanced technologies for the recovery of oil and natural gas, technologies and development in drilling, oil production and refining, and characterization and utilization research.

Gas R&D *Applied & Development* - Activities carried out in support of natural gas recovery methods.

Nuclear Energy Research Initiative *Applied* - Activities carried out to address key issues affecting the future of Nuclear Energy.

Nuclear Energy Plant Optimization *Applied* - Activities carried out to address technical and regulatory barriers to continued safe and economic operation of existing nuclear power plants. Specifically, aging and plant efficiency improvements.

Power Marketing Administrations *Basic, Applied & Development* - Research activities primarily supported the Fish and Wildlife programs at Bonneville Power Administration.

Other Fossil Energy Activities *Basic, Applied & Development* - Cooperative research activities carried out as a result of awards from competitive solicitations initiated under the Fossil Energy Federal/State Program and other research activities relating to mining research.

Science

Biological and Environmental Research *Basic* - Research activities developed knowledge needed to identify, understand, and anticipate the long term health and environmental consequences of energy production, development, and use. *Applied* - Research activities included developing beneficial applications of nuclear and other energy-related technologies for medical diagnosis and treatment.

Fusion Energy Sciences *Basic* - Broad-based, fundamental research efforts aimed at producing knowledge on fusion.

Basic Energy Sciences *Basic* - Research activities carried out in nuclear sciences, materials sciences, chemical sciences, engineering geosciences, energy biosciences, advanced energy projects and advanced mathematical sciences.

High Energy Physics *Basic* - Fundamental research activities directed at understanding the nature of matter and energy.

Nuclear Physics *Basic* - Research activities were directed at understanding the fundamental forces

and particles of nature as manifested in nuclear matter.

Advanced Scientific Computing *Basic* - Fundamental research was conducted in advanced computing research relevant to complex problems of the Department. Provided world class supercomputer and networking facilities for scientists working on problems important to the Department. Conducted activities to establish the feasibility of novel, energy related concepts spanning the Department's mission. *Applied* - Research activities supported high risk, energy-related research to advance science and technology to enable applications impacting energy economy.

Small Business Innovative Research/Technology Transfer *Basic* - R&D support for energy related technologies that will significantly benefit US businesses, a technology transfer initiative.

Advanced Radioisotope Power System Development *Development* - Activities provided compact, safe nuclear power systems and related technologies to space, national security and other customers.

Isotope Production & Distribution Program *Applied* - Activities related to the development new isotope production processes and the improvement in existing production processes.

Other Science Activities *Basic* - The Energy Research Analyses program evaluated the quality and impact of DOE research programs and projects.

Environmental Quality

Civilian Radioactive Waste Management *Applied* - Research activities were carried out on the long-term storage of high-level nuclear waste in a permanent underground repository.

Technology Development *Basic, Applied & Development* - Activities related to environmental cleanup, waste management and related technologies, technology integration and international technology exchange activities.

**Budgetary Resources by Major Account
For the Year Ended September 30, 2001
(\$ in millions)**

Energy and Water Development Appropriations

	Federal Energy Regulatory Commission 89X0212	Science 89X0222	Energy Supply 89-0224	Departmental Administration 89-0228	Weapons Activities 89-0240	Defense Environmental Restoration 89-0242	Other Defense Activities 89-0243
Budgetary Authority	\$ -	\$ 3,219	\$ 656	\$ 118	\$ 5,146	\$ 5,068	\$ 598
Unobligated Balances - Beginning of Period, Net of Transfers	4	17	80	26	617	25	46
Spending Authority from Offsetting Collections	175		585	107	1,156	55	
Actual Recoveries of Prior Year Obligations	1	1	1	1	1	2	1
Authority Not Available	(7)	(7)	(1)		(11)	(11)	(1)
Total Budgetary Resources	\$ 179	\$ 3,230	\$ 1,321	\$ 252	\$ 6,909	\$ 5,139	\$ 644
STATUS OF BUDGETARY RESOURCES							
Obligations Incurred	\$ 171	\$ 3,221	\$ 1,247	\$ 212	\$ 6,307	\$ 5,103	\$ 603
Unobligated Balances Available	8	9	67	40	446	30	41
Unobligated Balances Not Available			7		156	6	
Total Status of Budgetary Resources	\$ 179	\$ 3,230	\$ 1,321	\$ 252	\$ 6,909	\$ 5,139	\$ 644
OUTLAYS							
Obligations Incurred	\$ 171	\$ 3,221	\$ 1,247	\$ 212	\$ 6,307	\$ 5,103	\$ 603
Less Spending Authority from Offsetting Collections and Actual Recoveries of Prior Year Obligations	(175)	(1)	(586)	(108)	(1,157)	(57)	(1)
Obligated Balance, Net - Beginning of Period	25	1,390	487	64	1,049	1,507	779
Less Obligated Balance, Net - End of Period	(26)	(1,741)	(442)	(58)	(1,518)	(1,857)	(287)
Total Outlays	\$ (5)	\$ 2,869	\$ 706	\$ 110	\$ 4,681	\$ 4,696	\$ 1,094

	Defense Nuclear Waste Disposal 89X0244	Defense Environmental Management 89X0249	Non-defense Environmental Management 89X0250	Defense Facilities Closure Projects 89-0251	Defense Nuclear Nonproliferation 89-0309	Cerro Grande Fire Activities 89X0312	Naval Reactors 89X0314
Budgetary Authority	\$ 200	\$ 95	\$ 287	\$ 1,103	\$ 907	\$ 203	\$ 690
Unobligated Balances - Beginning of Period, Net of Transfers	85	263	2	2	185		1
Spending Authority from Offsetting Collections							
Actual Recoveries of Prior Year Obligations	(75)	(97)	(1)	1	1		(2)
Authority Not Available	210	261	288	(2)	(2)		(2)
Total Budgetary Resources	\$ 210	\$ 261	\$ 288	\$ 1,104	\$ 1,091	\$ 203	\$ 689
STATUS OF BUDGETARY RESOURCES							
Obligations Incurred	\$ 210	\$ 227	\$ 286	\$ 1,102	\$ 867	\$ 203	\$ 688
Unobligated Balances Available		34	2	2	223		1
Unobligated Balances Not Available					1		
Total Status of Budgetary Resources	\$ 210	\$ 261	\$ 288	\$ 1,104	\$ 1,091	\$ 203	\$ 689
OUTLAYS							
Obligations Incurred	\$ 210	\$ 227	\$ 286	\$ 1,102	\$ 867	\$ 203	\$ 688
Less Spending Authority from Offsetting Collections and Actual Recoveries of Prior Year Obligations	9	575	119	(1)	(1)		(1)
Obligated Balance, Net - Beginning of Period	(10)	(638)	(112)	295	8	87	(206)
Less Obligated Balance, Net - End of Period	209	164	293	1,038	374	54	482
Total Outlays	\$ 209	\$ 164	\$ 293	\$ 1,038	\$ 374	\$ 54	\$ 482

**Budgetary Resources by Major Account, Continued
For the Year Ended September 30, 2001
(\$ in millions)**

Energy and Water Development Appropriations (Cont)									
	Uranium Facilities Maintenance 89X0315	Bonneville Power Administration 89-4045	Colorado River Basin 89X4452	Intragovernmental Working Capital Fund 89X4563	Western Area Power Administration 89X5068	Nuclear Waste Disposal Fund 89-5227	All Other Energy & Water Development Appropriations		
Budgetary Authority	\$ 414	\$ 155	\$ -	\$ -	\$ 168	\$ 190	\$ 137		
Unobligated Balances - Beginning of Period, Net of Transfers		423	18	8	29	3	1,211		
Spending Authority from Offsetting Collections		4,269	391	84	265		109		
Actual Recoveries of Prior Year Obligations							1		
Authority Not Available							(371)		
Total Budgetary Resources	\$ 414	\$ 4,847	\$ 409	\$ 92	\$ 462	\$ 193	\$ 1,087		
STATUS OF BUDGETARY RESOURCES									
Obligations Incurred	\$ 394	\$ 4,726	\$ 355	\$ 83	\$ 408	\$ 185	\$ 205		
Unobligated Balances Available	20	121	54	5	45	8	172		
Unobligated Balances Not Available				4	9		710		
Total Status of Budgetary Resources	\$ 414	\$ 4,847	\$ 409	\$ 92	\$ 462	\$ 193	\$ 1,087		
OUTLAYS									
Obligations Incurred	\$ 394	\$ 4,726	\$ 355	\$ 83	\$ 408	\$ 185	\$ 205		
Less Spending Authority from Offsetting Collections and Actual Recoveries of Prior Year Obligations		(4,269)	(391)	(84)	(266)		(109)		
Obligated Balance, Net - Beginning of Period	(174)	367	29	23	138	75	184		
Less Obligated Balance, Net - End of Period		(487)	(23)	(28)	(180)	(87)	(49)		
Total Outlays	\$ 220	\$ 337	\$ (30)	\$ (6)	\$ 100	\$ 173	\$ 231		

Interior Appropriations

	Fossil Energy R&D 89X0213	Energy Conservation 89-0215	Energy Information Administration 89X0216	Strategic Petroleum Reserve 89X0218	All Other Interior Appropriations	Department Elimination Entries	Consolidated Statement of Budgetary Resources
Budgetary Authority	\$ 428	\$ 807	\$ 75	\$ 152	\$ 50	\$ (419)	\$ 20,444
Unobligated Balances - Beginning of Period, Net of Transfers	142	43	3	38	386		3,658
Spending Authority from Offsetting Collections		1				(104)	7,093
Actual Recoveries of Prior Year Obligations	2	2	3	8			25
Authority Not Available	(1)	(2)		(84)			(667)
Total Budgetary Resources	\$ 571	\$ 851	\$ 81	\$ 190	\$ 360	\$ (523)	\$ 30,553
STATUS OF BUDGETARY RESOURCES							
Obligations Incurred	\$ 446	\$ 827	\$ 78	\$ 149	\$ 90	\$ (523)	\$ 27,870
Unobligated Balances Available	125	24	2	41	258		1,777
Unobligated Balances Not Available			1		12		906
Total Status of Budgetary Resources	\$ 571	\$ 851	\$ 81	\$ 190	\$ 360	\$ (523)	\$ 30,553
OUTLAYS							
Obligations Incurred	\$ 446	\$ 827	\$ 78	\$ 149	\$ 90	\$ (523)	\$ 27,870
Less Spending Authority from Offsetting Collections and Actual Recoveries of Prior Year Obligations	(2)	(3)	(3)	(8)		104	(7,118)
Obligated Balance, Net - Beginning of Period	356	600	29	66	358		8,619
Less Obligated Balance, Net - End of Period	(415)	(665)	(29)	(340)			(10,466)
Total Outlays	\$ 385	\$ 759	\$ 75	\$ 215	\$ 100	\$ (419)	\$ 18,905

Schedule of Intragovernmental Amounts
For Fiscal Year 2001
(\$ in millions)

Intragovernmental Assets:

Agency	Fund Balance with Treasury	Investments	Accounts Receivable	Regulatory Assets	Other
U.S. Treasury	\$ 12,686	\$ 15,812	\$ 148	\$ 5,236	\$ -
Defense Agencies			265		
Tennessee Valley Authority			72		
General Services Administration			16		
Other			56		3
Total intragovernmental assets	\$ 12,686	\$ 15,812	\$ 557	\$ 5,236	\$ 3

Intragovernmental Liabilities:

Agency	Accounts Payable	Debt	Appropriated Capital Owed to Treasury	Deferred Revenues	Other
U.S. Treasury	\$ 36	\$ 8,473	\$ 2,747	\$ -	\$ 24
Defense Agencies	12			7	106
Department of Agriculture	11				
General Services Administration	26			12	
Department of State				8	
Office of Personnel Management	6				17
Other	28			12	109
Total intragovernmental liabilities	\$ 119	\$ 8,473	\$ 2,747	\$ 39	\$ 256

Intragovernmental Earned Revenue and Related Costs:

Agency	Earned Revenues
Defense Agencies	\$ 1,124
U.S. Treasury	840
Department of Health & Human Services	103
National Aeronautics and Space Administration	57
Nuclear Regulatory Commission	48
Other	251
Total intragovernmental earned revenues	\$ 2,423

Budget Functional Classification	Gross Costs to Generate Revenues
Atomic Energy Defense	\$ 1,101
Energy Supply	384
Energy Information	17
General Science	5
Total	\$ 1,507

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Audit Reports


**Department of Energy**

Washington, DC 20585

February 13, 2002

MEMORANDUM FOR THE SECRETARY

FROM:


Gregory H. Friedman
Inspector General

SUBJECT:

INFORMATION: Report on the Department of Energy's
Consolidated Financial Statements

I am pleased to inform you that the Department of Energy's consolidated financial statements have received an unqualified audit opinion for the third consecutive year.

This year, the Office of Inspector General contracted with the accounting firm of KPMG LLP to conduct the audit. The accounting firm concluded that the consolidated financial statements present fairly, in all material respects, the Department's financial position as of September 30, 2001, and its net costs, changes in net position, budgetary resources, reconciliation of net costs to budgetary obligations, and custodial activities for the year then ended. We agree with the opinion expressed in the attached report.

As part of the review of the financial statements, the auditors considered internal controls over financial reporting and tested the Department's compliance with certain provisions of applicable laws and regulations that could have a direct and material effect on the consolidated financial statements. The examination revealed four reportable conditions in the Department's system of internal controls. These conditions were:

- The Department has made progress improving its performance measurement reporting, but more remains to be done to satisfy the requirements of the Government Performance and Results Act and related Office of Management and Budget's guidance. Specifically, performance goals, in many cases, were not output- or outcome-oriented, some were not meaningful or relevant, and some were not stated in objective or quantifiable terms. Additionally, the relationship between operating costs and actual outcomes was not transparent. These weaknesses limit the casual reader's ability to properly assess the Department's performance.
- The Department has certain network vulnerabilities and general access control weaknesses that could affect unclassified information system security. As previously reported, full implementation of the Department's Cyber Security Program should help ensure that Federal information standards are met and that information systems are adequately protected against unauthorized access.



- The Department's Western Area Power Administration did not uniformly perform reconciliations and could not promptly prepare account analyses. These problems increased the risk of significant misstatements in Western's financial statement balances and were the principal reason that its Fiscal Year 2001 financial statements were not ready for separate audit. To compensate for the increased control risk created by these conditions, the auditors performed agreed-upon procedures to verify the reliability of Western's financial information and account balances included in the consolidated financial statements.
- The Department's Active Facilities Data Collection System contained inaccurate data, including incorrect facility types and errors in reported square footage which, prior to audit adjustment, overstated the active facilities environmental liability estimate.

In general, management officials concurred with the audit findings supporting these conditions and have initiated or agreed to take corrective action. It should be noted that the first three reportable conditions represent findings that were also disclosed during the prior year audit.

To ensure the quality of the audit and to fulfill our responsibilities under generally accepted Government auditing standards, the Office of Inspector General approved the scope of KPMG's assignment and monitored its work. We also reviewed the audit report and related working papers to ensure compliance with applicable auditing standards.

I would like to thank all elements of the Department for their courtesy and cooperation during the conduct of the audit.

Attachment

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

Audit Report: DOE/IG-FS-02-01



2001 M Street, N.W.
Washington, D.C. 20036

INDEPENDENT AUDITORS' REPORT

The Inspector General, U.S. Department of Energy:

We have audited the accompanying consolidated balance sheets of the U.S. Department of Energy (Department) as of September 30, 2001 and 2000, and the related consolidated statements of net cost, changes in net position, budgetary resources, financing, and custodial activities for the years then ended. The objective of our audits was to express an opinion on the fair presentation of these consolidated financial statements. In connection with our audits, we also considered the Department's internal control over financial reporting and tested the Department's compliance with certain provisions of applicable laws and regulations that could have a direct and material effect on its consolidated financial statements.

Summary

As stated in our opinion, we conclude that the Department's consolidated financial statements as of and for the years ended September 30, 2001 and 2000 are presented fairly, in all material respects, in conformity with accounting principles generally accepted in the United States of America.

The cost estimates supporting the Department's environmental remediation liabilities of \$238 billion and \$234 billion, as of September 30, 2001 and 2000, respectively, are based upon assumptions regarding future actions and decisions, many of which are beyond the Department's control. These matters are discussed in Note 15 to the consolidated financial statements.

Our consideration of internal control over financial reporting identified the following as reportable conditions:

- Performance measurement reporting;
- Unclassified information systems security;
- Financial management at Western Area Power Administration; and
- Environmental liabilities for active facilities.

The results of our tests of compliance with laws and regulations disclosed no instances of noncompliance that are required to be reported herein under *Government Auditing Standards*, issued by the U.S. General Accounting Office, or Office of Management and Budget (OMB) Bulletin No. 01-02, *Audit Requirements for Federal Financial Statements*.



Independent Auditors' Report

The following sections discuss our opinion on the Department's 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 and regulations, management's responsibilities, and our responsibilities.

Opinion on Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of the U.S. Department of Energy as of September 30, 2001 and 2000, and the related consolidated statements of net cost, changes in net position, budgetary resources, financing, and custodial activities for the years then ended.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the U.S. Department of Energy as of September 30, 2001 and 2000, and its net costs, changes in net position, budgetary resources, reconciliation of net costs to budgetary obligations, and custodial activities for the years then ended, in conformity with accounting principles generally accepted in the United States of America.

As discussed in Note 15 to the consolidated financial statements, the cost estimates supporting the Department's environmental remediation liabilities of \$238 billion and \$234 billion, as of September 30, 2001 and 2000, respectively, are based upon assumptions regarding future actions and decisions, many of which are beyond the Department's control.

The information in the Overview and Required Supplementary Information sections of the Department's *Fiscal Year 2001 Performance and Accountability Report* is not a required part of the consolidated financial statements, but is supplementary information required by the Federal Accounting Standards Advisory Board or OMB Bulletin No. 97-01, *Form and Content of Agency Financial Statements*, as amended. We have applied certain limited procedures, which consisted principally of inquiries of management regarding the methods of measurement and presentation of this information. However, we did not audit this information and, accordingly, we express no opinion on it. Based upon our limited procedures, we determined that with respect to assets and liabilities, the Department completed the intragovernmental balance reconciliations with its trading partners, as specified by the January 2000 technical amendment to OMB Bulletin No. 97-01. The Department was unable to complete the intragovernmental balance reconciliations for revenues because certain trading partners were unable to provide the Department with accurate and reliable intragovernmental transaction data.

Our audits were conducted for the purpose of forming an opinion on the consolidated financial statements taken as a whole. The information in the Consolidating Schedules is presented for purposes of additional analysis of the consolidated financial statements rather than to present the financial position, net cost, changes in net position, budgetary resources, reconciliation of net costs to budgetary obligations, and custodial activities of the Department's components individually. The information in the Consolidating Schedules has been subjected to the auditing procedures applied in the audits of the consolidated financial statements and, in our opinion, is fairly stated in all material respects in relation to the consolidated financial statements taken as a whole.

Independent Auditors' Report

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 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 2001 audit, we noted certain matters involving internal control over financial reporting and its operation that we consider to be reportable conditions. However, none of the reportable conditions, described below and in more detail in Exhibit I, are believed to be material weaknesses.

- **Performance Measurement Reporting** – The Department's performance reporting for Fiscal Year 2001 contains certain deficiencies, most of which were noted in previous audits, that limit the casual reader's ability to properly assess the Department's performance. The Department plans to continue improving its performance measurement reporting in response to feedback from OMB, the U.S. General Accounting Office, the Department's Office of Inspector General, and the U.S. Congress.
- **Unclassified Information Systems Security** – We noted network vulnerabilities and weaknesses in access and other security controls in the Department's unclassified computer information systems. Without adequate access and computer security controls, the integrity of essential financial management system data may be threatened. The Department should continue to improve its network security and access controls throughout the Department.
- **Financial Management at Western Area Power Administration (Western)** – Western did not uniformly perform necessary reconciliations and could not promptly prepare account analyses. These problems were the principal reason that Western's Fiscal Year 2001 financial statements were not ready for separate audit. In addition, these problems and ineffective reviews of Western's financial statement balances reported to the Department for inclusion in the consolidated financial statements increased the risk that those balances may be significantly misstated. Western should establish effective reconciliation procedures and make other related financial management improvements, with oversight from the Department's Chief Financial Officer.

Independent Auditors' Report

- Environmental Liabilities for Active Facilities – The Department's Active Facilities Data Collection System contained inaccurate data, including incorrect facility types and errors in reported square footage, which caused its active facilities liability estimate to be overstated. The Department should strengthen its process for collection of active facilities data.

A summary of the status of prior year reportable conditions is included as Exhibit II.

We also noted other matters involving internal control over financial reporting and its operation that we will report to Departmental management in separate letters addressing information technology and non-information technology matters.

Compliance with Laws and Regulations

Our tests of compliance with certain provisions of laws and regulations, as described in the Auditors' Responsibilities section of this report, exclusive of the Federal Financial Management Improvement Act (FFMIA) of 1996, disclosed no instances of noncompliance that are required to be reported herein under *Government Auditing Standards* and OMB Bulletin No. 01-02.

In addition, the results of our tests of compliance with FFMIA requirements disclosed no instances in which the Department's financial management systems did not substantially comply with the three FFMIA requirements discussed in the Auditors' Responsibilities section of this report.

Responsibilities

Management's Responsibilities. The Government Management Reform Act (GMRA) of 1994 requires each Federal agency to report annually to Congress on its financial status and any other information needed to fairly present its financial position and results of operations. To meet the GMRA reporting requirements, the Department prepares annual financial statements.

Management is responsible for:

- Preparing the financial statements in conformity with accounting principles generally accepted in the United States of America;
- Establishing and maintaining internal control over financial reporting, required supplementary stewardship information, and performance measures; and
- Complying with laws and regulations, including the FFMIA.

In fulfilling this responsibility, estimates and judgments by management are required 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.

Independent Auditors' Report

Auditors' Responsibilities. Our responsibility is to express an opinion on the Fiscal Year 2001 and 2000 consolidated financial statements of the Department based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America, the standards applicable to financial audits contained in Government Auditing Standards, issued by the Comptroller General of the United States, and OMB Bulletin No. 01-02. Those standards and OMB Bulletin No. 01-02 require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement.

An audit 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 audits provide a reasonable basis for our opinion.

In planning and performing our Fiscal Year 2001 audit, we considered the Department's internal control over financial reporting by obtaining an understanding of the Department's internal control, determining whether these controls had been placed in operation, assessing control risk, and performing tests of controls in order to determine our auditing procedures for the purpose of expressing our opinion on the consolidated financial statements. We limited our internal control testing to those controls necessary to achieve the objectives described in OMB Bulletin No. 01-02 and *Government Auditing Standards*. We did not test all internal controls relevant to operating objectives as broadly defined by the Federal Managers' Financial Integrity Act of 1982. The objective of our audit was not to provide assurance on internal control over financial reporting and, accordingly, we do not provide an opinion thereon.

As required by OMB Bulletin No. 01-02, we considered the Department's internal control over required supplementary stewardship information by obtaining an understanding of the Department's internal control, determining whether these controls had been placed in operation, assessing control risk, and performing tests of controls. Our procedures were not designed to provide assurance on internal control over required supplementary stewardship information and, accordingly, we do not provide an opinion thereon.

As further required by OMB Bulletin No. 01-02, with respect to internal control over performance measures reported in the Overview section of the Department's *Fiscal Year 2001 Performance and Accountability Report*, we obtained an understanding of the design of significant controls relating to the existence and completeness assertions. Our procedures were not designed to provide assurance on internal control over performance measures and, accordingly, we do not provide an opinion thereon.

Independent Auditors' Report

As part of obtaining reasonable assurance about whether the Department's Fiscal Year 2001 financial statements are free of material misstatement, we performed tests of the Department's compliance with certain provisions of laws and regulations, noncompliance with which could have a direct and material effect on the determination of financial statement amounts, and certain provisions of other laws and regulations specified in OMB Bulletin No. 01-02, including certain provisions referred to in the FFMIA. We limited our tests of compliance to the provisions described in the preceding sentence, and we did not test compliance with all laws and regulations applicable to the Department. Providing an opinion on compliance with laws and regulations was not an objective of our audit and, accordingly, we do not express such an opinion.

Under OMB Bulletin No. 01-02 and the 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 and the U.S. Congress, and is not intended to be and should not be used by anyone other than these specified parties.

KPMG LLP

January 31, 2002

Independent Auditors' Report
Exhibit I – Reportable Conditions

Performance Measurement Reporting

Statement of Federal Financial Accounting Standards (SFFAS) No. 15, *Management's Discussion and Analysis*, requires Federal agencies to include, in documents presenting their financial statements, discussion and analysis of the financial statements and related information. This discussion should provide a clear and concise description of the reporting entity, its mission, activities, accomplishments, and overall financial condition and results. It should also include information on whether and how the mission of the reporting entity is being accomplished.

The Department presents performance measurement data and other information required by SFFAS No. 15 for each of its principal programs in the Overview section of its *Fiscal Year 2001 Performance and Accountability Report*. This performance measurement data is based primarily on information from the Department's *Strategic Plan* and the revised final goals for Fiscal Year 2001 published in the *Fiscal Year 2002 Annual Performance Plan*, which were prepared under the requirements of the Government Performance and Results Act of 1993.

Prior audits of the Department's consolidated financial statements have reported that the usefulness of many programmatic performance measures presented in the Overview was limited. Management has generally concurred with our recommendations and agreed to improve the utility of performance information and its presentation. The Department has made some progress in resolving performance reporting issues, but more remains to be done.

Finding 1: Performance Measurement Reporting

The OMB requires that performance measures, to be useful, be output and outcome oriented, meaningful and relevant, objective and quantifiable, and consistent with the measures developed in the strategic planning process. Performance measures should also be described in terms understandable to the casual reader.

The Department's performance reporting for Fiscal Year 2001 contains the following deficiencies, most of which were noted in previous audits:

- We identified problems with the usefulness and completeness and the assigned organizational responsibility levels of reported goals. Goals in many cases are not output or outcome oriented; some are not meaningful or relevant, or stated in objective or quantifiable terms; and some are at a lower organizational level than necessary. In addition, a portion of the performance measurement reporting is not easily understood by the casual reader.
- Net costs for Fiscal Year 2001 are provided for significant sub-programs and offices within each business line. These net costs, in many cases, cover more than one performance goal. Cost-effectiveness data related to performance is not presented at a sufficient level of detail to determine the cost associated with individual performance goals.

Independent Auditors' Report
Exhibit I – Reportable Conditions, Continued

These deficiencies limit the casual reader's ability to properly assess the Department's performance.

The Department has made progress in providing a balanced collection of performance measures to help the casual reader obtain a complete understanding of how the reported programs performed. However, the Department has not yet revised its performance measures to fully meet OMB's requirements. Management has indicated that its planned Fiscal Year 2002 changes to the performance measurement reporting process will be responsive to our recommendations and will be more responsive to feedback the Department has obtained from OMB, the U.S. General Accounting Office, and the U.S. Congress.

Recommendation:

We recommend that the Department's Chief Financial Officer continue to improve the development, presentation, and systems for reporting of performance measures consistent with the Government Performance and Results Act, applicable OMB guidance, and Federal accounting standards. Making these improvements will require cooperation from all areas within the Department.

Independent Auditors' Report
Exhibit I – Reportable Conditions, Continued

Unclassified Information Systems Security

We noted network vulnerabilities and weaknesses in access and other security controls in unclassified information systems.

Finding 2: Network Security

The Department maintains a series of interconnected unclassified networks and information systems. Security over unclassified information systems is an important issue facing government organizations. This issue has taken on greater significance as Federal agencies have migrated from mainframe environments with a closed architecture and limited access to web-based client/server systems. In addition, the U.S. General Accounting Office has designated information system security as a high-risk area.

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 certain corrective actions to improve network security at the sites we reviewed in prior years. However, we identified significant weaknesses at the two sites we reviewed in Fiscal Year 2001, and at three sites reviewed by other organizations. At all of these sites, we identified network vulnerabilities similar to those found at other sites in previous years, including poor password management, weak configuration management, outdated software with known security problems, and firewall configuration problems. In addition, many previously identified weaknesses have not been resolved.

The identified weaknesses and vulnerabilities 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 their potential effect on the integrity of the Department's financial systems.

Recommendation:

We recommend that the Department's Chief Information Officer take actions to improve network security throughout the Department. Detailed recommendations to address the issues discussed above will be included in a separate report to the Chief Information Officer.

Independent Auditors' Report
Exhibit I – Reportable Conditions, Continued

Finding 3: Information Systems Access and Other Security Controls

The Department has mandated compliance with several Federal information security directives and public laws in DOE Notice 205.1, *Unclassified Computer Security Program*, dated July 26, 1999. The program also establishes policies for the protection of unclassified information and information systems. Within this security framework, the Department operates its financial management systems that form the basis for preparing its consolidated financial statements.

Our audit disclosed weaknesses in access and other security controls at several sites. These weaknesses included unsecured network ports, inadequate monitoring of networks for questionable activity, and shortcomings in password security. We also identified weaknesses in security planning, including outdated or nonexistent security certifications for major applications. Finally, we noted inadequate planning for re-establishment of computer operations following a disruption. For example, some sites had arranged for backup processing facilities, but had not tested those facilities, and others had not finalized or tested disaster recovery plans. The Department's Office of Inspector General also reported deficiencies in the Department's information system risk management, contingency planning, configuration management, and access controls in its evaluation report on *The Department's Unclassified Cyber Security Program*, dated August 30, 2001.

Without adequate access and computer security controls, the integrity of essential financial management system data may be threatened. Because of our concerns, we performed supplementary audit procedures and identified compensating controls that mitigate the potential effect of these security weaknesses on the integrity of the Department's financial systems. Because the purpose of our audit was to express an opinion on the Department's consolidated financial statements, our audit did not address the potential effect of the security weaknesses on the integrity of the Department's non-financial systems.

Recommendation:

As recommended in the prior year, the Department's Chief Information Officer should follow up on the implementation of its Cyber Security Program throughout the Department, to ensure that the Federal information standards are met and that its information and information systems are adequately protected against unauthorized access. Detailed recommendations to address the issues discussed above will be included in a separate report to the Chief Information Officer.

Independent Auditors' Report
Exhibit I – Reportable Conditions, Continued

Financial Management at Western Area Power Administration

The Western Area Power Administration (Western), a component of the Department, markets and transmits electric power and provides related services. Western implemented a new financial management system on November 2, 1998. Throughout Fiscal Years 1999, 2000 and 2001, Western has been addressing operational deficiencies in the system, including problems with system functionality and performance, data accuracy, security, and reporting. As reported in the Department's Fiscal Year 1999 audit, components of Western's new financial system did not have common data elements; consistent controls over data entry, transaction processing, and reporting; or transaction entry procedures to preclude unnecessary duplication. Further, the system lacked adequate internal control and system documentation to meet user needs. Our Fiscal Year 2000 audit found that these system problems persisted for most of that year. Inadequate reconciliation procedures also contributed to Western's inability to produce timely and reliable financial statements.

Finding 4: Financial Management at Western Area Power Administration

OMB Circular No. A-127, *Financial Management Systems*, requires Federal agencies to ensure that financial systems support management's fiduciary role; support the legal, regulatory, and other special management requirements of the agency; support budget decision-making; and comply with internal and external reporting requirements.

Although Western has made progress in improving its systems, Western's Fiscal Year 2001 financial statements were not ready for separate audit, largely because of inadequate reconciliation procedures. In addition, Western did not have an effective process for ensuring the accuracy of the financial statement balances reported to the Department for inclusion in the consolidated financial statements. Western did not uniformly perform timely reconciliations of subsidiary ledgers to the general ledger or timely reconciliations of cash balances reported in the general ledger to balances reported by the U.S. Treasury, and could not promptly prepare detailed analyses of reported account balances. The inadequate reconciliation procedures and the inability to analyze account balances increased the risk of significant misstatements in Western's financial statement balances. Western's internal reviews of financial statement balances reported to the Department did not disclose numerous errors that were later identified and corrected as a result of auditor and Department-level reviews.

Western reported that personnel constraints, competing priorities, and lack of certain reports from its accounting system that would facilitate reconciliations and account analyses, prevented it from meeting external reporting requirements, including the timely preparation of financial statements and reporting accurate financial statement balances to the Department. We believe that improving the overall financial management at Western will take on even more importance as the U.S. Government adopts interim financial reporting requirements.

Independent Auditors' Report
Exhibit I – Reportable Conditions, Continued

To compensate for the increased control risk created by these conditions, we used alternative measures to verify the reliability of Western's financial information and account balances included in the Department's consolidated financial statements for Fiscal Years 1999, 2000 and 2001.

Recommendations:

The Department's Chief Financial Officer should monitor Western's implementation of the actions recommended below.

Western's management should:

- a) Review the adequacy of its overall financial management policies and procedures, including development of formal reconciliation procedures.
- b) Ensure that its accounting department is staffed with sufficient and experienced personnel who meet the core competency requirements outlined for financial accountants in the Federal Government's Joint Financial Management Improvement Program guidance.
- c) Establish procedures that would ensure: (1) timely, monthly reconciliations of all subsidiary ledgers to the general ledger, and cash balances reported in the general ledger to balances reported by the U.S. Treasury; (2) supervisory reviews of reconciliations and account analyses prepared by accounting staff; (3) an effective supervisory approval prior to recording all manual journal entries; and (4) an effective review of financial statement balances reported to the Department.
- d) Establish an accounting policy group to review and set standards to account for unique transactions entered into by Western. The group should also monitor compliance with accounting policies throughout the organization.

Independent Auditors' Report
Exhibit I – Reportable Conditions, Continued

Environmental Liabilities for Active Facilities

The Department's liability for remediation of its active and surplus facilities is largely based upon an estimate computed by a cost-estimating model, using facility data from the Active Facility Data Collection System (AFDCS). The AFDCS includes facility size information, the type of facility, and the type of contamination for each contaminated facility not addressed in the Environmental Management program's baseline estimates. A cognizant Federal manager at each Departmental field office providing facility data to AFDCS is required each year to review and approve this data.

Finding 5: Active Facility Data Collection System

The Department's AFDCS contained inaccurate data, including incorrect facility types and errors in reported square footage, which caused its active facilities liability estimate to be overstated. In a test of a statistically derived sample of data for 12 facilities at each of 8 sites, we found 10 errors in 96 facilities tested, a 10 percent error rate. In addition, we found that the Los Alamos National Laboratory erroneously identified 60 electrical transformers and substations as contaminated facilities.

The Department corrected the errors discussed above in its Fiscal Year 2001 consolidated financial statements. We agreed with Departmental management that the statistically projected overstatement did not cause a material misstatement of the liability for remediation of active facilities in those financial statements. However, the errors we identified indicate a need to improve the accuracy of facility data.

Recommendations:

We recommend that the Department's Chief Financial Officer strengthen field office procedures for preparation, review, and approval of facility data included in the AFDCS. Such procedures should include supervisory quality control checks and independent comparisons of facility data to source documents. We further recommend that the Chief Financial Officer encourage field offices to involve site contractors in reviews and quality checks of facility data.

Independent Auditors' Report
Exhibit II – Status of Prior Year Audit Findings

<u>Reportable Conditions from Fiscal Year 2000</u> (with parenthetical disclosure of year first reported)	<u>Status at September 30, 2001</u>
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- | | |
|---|--|
| 1. Performance Measurement Reporting (1997) | Improvements made, but still reported in Exhibit I as a reportable condition. |
| 2. Unclassified Information System Security (1999) | Still reported in Exhibit I as a reportable condition. |
| 3. Financial Management at Western Area Power Administration (1999) | Prior audit recommendations are partially implemented. Included in Exhibit I as a reportable condition focused on improving overall financial management at Western. |

**Department of Energy**

Washington, DC 20585

February 19, 2002

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's (the Department) consolidated balance sheets as of September 30, 2001, and 2000, and the related consolidated statements of net costs, changes in net position, budgetary resources, financing, and custodial activities for the years then ended. We have reviewed your Independent Auditors' Report and provide the following responses to your recommendations.

Finding 1: Performance Measurement Reporting**Auditors' Recommendation:**

The Department's Chief Financial Officer should continue to improve the development, presentation, and systems for reporting of performance measures consistent with the Government Performance and Results Act, applicable Office of Management and Budget guidance, and Federal accounting standards. Making these improvements will require cooperation from all areas within the Department.

Management's Response:

The Department is continuing to make progress in the development and reporting of performance measures. The June, 2001, General Accounting Office (GAO) report entitled, "Department of Energy: Status of Achieving Key Outcomes and Addressing Major Management Challenges," while pointing out several deficiencies, specifically identified goals in the areas of Environmental Management and Science that GAO considered relevant, quantified, and appropriate. The Chief Financial Officer concurs with the auditors' recommendation that further improvements are needed in the development and reporting of performance measures. To accelerate this improvement effort, the Chief Financial Officer established in October 2001, a new Office of Program Analysis and Evaluation. One of the major responsibilities of this office is to work with program managers in establishing outcome-oriented, measurable performance measures which link to the Administration's priorities. Performance management has also been added to the list of Departmental Challenges reported under the Federal Managers' Financial Integrity Act.

Finding 2: Network Security**Auditors' Recommendation:**

The Department's Chief Information Officer should take actions to improve network security throughout the Department.

Management's Response:

The Chief Information Officer (CIO) concurs with this recommendation and is committed to ensuring that the Department's cyber assets are adequately protected commensurate with the risk. Since FY 2000, the CIO has aggressively pursued Department-wide architectural upgrades to enhance network security and has provided about 44 percent of its cyber security budget to fund these efforts. In late 1999, the Department purchased 20,000 Public Key Infrastructure certificates providing greater access controls and encryption capability. In addition, it has funded Tumbleweed, which provides virus protection and a secure messaging infrastructure, and ISS/Real Secure, which enhances Departmental intrusion detection and scanning capabilities across the DOE complex.

Finding 3: Information Systems Access and Other Security Controls**Auditors' Recommendation:**

The Department's Chief Information Officer should follow up on the implementation of its Cyber Security Program throughout the Department to ensure that the Federal information standards are met and that its information and information systems are adequately protected against unauthorized access.

Management's Response:

The Chief Information Officer (CIO) concurs with this recommendation. The CIO has an ambitious program in place to identify and correct cyber security shortfalls on an enterprise-wide basis. In December 2001, the CIO developed a Cyber Security Performance Improvement Plan to track the progress of actions taken to correct cyber security weaknesses across the Department down to the site level. This information will be used to develop the Department's quarterly Program of Action and Milestones submission to the Office of Management and Budget as required by the Government Information Security Reform Act. Other CIO efforts currently underway include integrating cyber security into the CIO's information technology capital planning and investment process.

Finding 4: Financial Management at Western Area Power Administration**Auditors' Recommendation:**

The Department's Chief Financial Officer should monitor Western's implementation of the actions recommended below.

In addition, Western's management should:

- Review the adequacy of its overall financial management policies and procedures, including development of formal reconciliation procedures.
- Ensure that its accounting department is staffed with sufficient and experienced personnel who meet the core competency requirements outlined for financial

accountants in the Federal government's Joint Financial Management Improvement Program.

- Establish procedures that would ensure: (1) timely, monthly reconciliations of all subsidiary ledgers to the general ledger, and cash balances reported in the general ledger to balances reported by the U.S. Treasury; (2) supervisory reviews of reconciliations and account analyses prepared by accounting staff; (3) an effective supervisory approval prior to recording all manual journal entries; and (4) an effective review of financial statement balances reported to the Department.
- Establish an accounting policy group to review and set standards to account for unique transactions entered into by Western and to monitor compliance with accounting policies throughout the organization.

Management's Response:

The Chief Financial Officer concurs with these recommendations. As noted in your report, although Western has made progress in improving its systems, several actions need to be taken to improve Western's overall financial management. The Chief Financial Officer will oversee Western management's development of a corrective action plan to address these deficiencies and will closely monitor implementation of the four recommendations directed to Western.

Finding 5: Active Facility Data Collection System

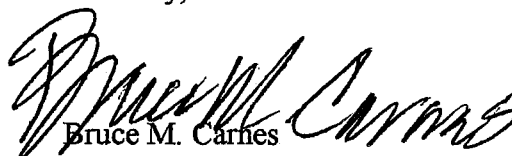
Auditors' Recommendation:

The Department's Chief Financial Officer should strengthen field office procedures for preparation, review, and approval of facility data included in the Active Facility Data Collection System. Such procedures should include supervisory quality control checks and independent comparisons of facility data to source documents. Further, the Chief Financial Officer should encourage field offices to involve site contractors in reviews and quality checks of facility data.

Management's Response:

The Chief Financial Officer generally concurs with these recommendations.

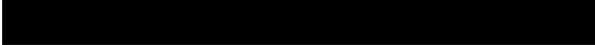
Sincerely,


Bruce M. Carnes
Chief Financial Officer

APPENDIX

FY 2001 Performance and
Accountability Report

Detailed Performance Results



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Introduction

The Government Performance and Results Act of 1993 (GPRA) requires Federal agencies to report performance results annually. A summary of the Department's FY 2001 performance results is contained in the Overview section of this report. The following pages contain detailed information on the results achieved for all revised final performance goals and targets for FY 2001 as contained in the Department's FY 2002 Annual Performance Plan. The detailed performance results address what each program delivered for its net costs. To facilitate the linkage between performance and net costs, tables are provided showing the relationship between the strategic structure of the Department's work and financial organization of the performance results.

To meet the GPRA requirements to identify performance goals for each program activity, the basic building blocks of the Annual Performance Plan and the detailed performance results are the GPRA program activities. The GPRA program activities are logical groupings of budget line items that make up the Program and Financing (P&F) accounts in the President's budget. The logical groupings are formed by aggregating, disaggregating, or both as appropriate, to link resources to a logical set of performance goals.

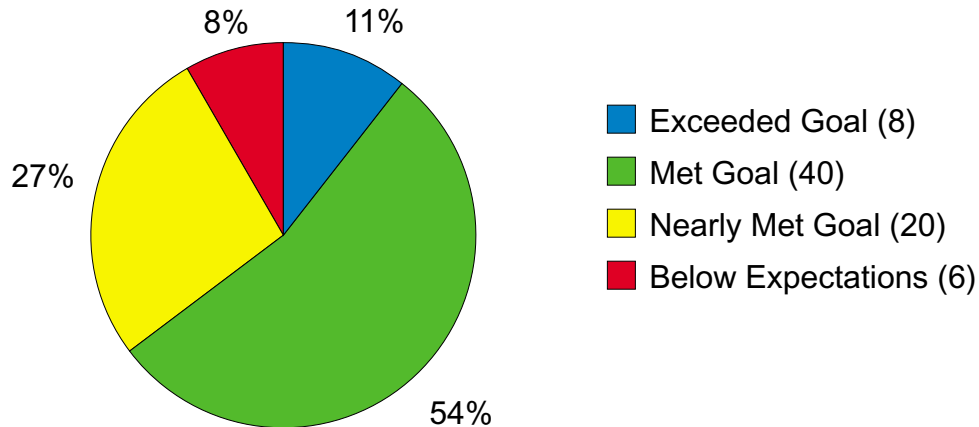
In this detailed performance report, we have organized the presentation of the final FY 2001 performance results in exactly the same order as the revised final FY 2001 goals, portrayed in the Department's FY 2002 Annual Performance Plan. The FY 2001 General Performance Goals are numbered to identify their hierarchical relationship to the strategic objective and the overall program area goal they support in the Department's Strategic Plan. For example, ER 2-3 is the third goal supporting the second strategic objective under the Energy Resources program area as identified in the Department's Strategic Plan published in September 2000. In accordance with GPRA and the Office of Management and Budget (OMB) guidance, the report also includes related performance targets and associated assessments for two prior years, FY 2000 and FY 1999.

Overall Comparison of Actual Performance to Projected Performance

For each performance goal, the discussion includes an assessment of the Department's performance made by the responsible office, consistent with the Department's performance-based management approach. The terms used for the assessments were developed through discussions with Congressional staff, and were used in the FY 2000 and FY 1999 reports. The terms and their meanings are:

"Exceeded Goal"	means the results were significantly more than planned.
"Met Goal"	means the results met the target performance level or were slightly more than the target but not significantly more.
"Nearly Met Goal"	means the performance was less than the target level but not significantly less.
"Below Expectations"	means the results were significantly less than the target.
"Unspecified"	means that end-of-year results were not available at the time of printing.

When performance was "Below Expectations," a plan of action is included after the assessment. In some cases where the performance was assessed as "Nearly Met Goal," a plan of action is included. The overall results for the 74 General Performance Goals for FY 2001 are:



Changes from FY 2000 Report

For FY 2001, the detailed performance results were assessed at the General Performance Goal level instead of at the individual target level. This approach, while allowing the programs to report their results at the target level, asks the managers to assess their annual progress in context of the larger goal. The approach also helps to make the report concise and useful for the public and other stakeholders.

Program Evaluations Conducted During FY 2001

GPRA defines program evaluation as "an assessment through objective measurement and systematic analysis of the manner and extent to which Federal programs achieve intended objectives." The major evaluations that the Department has conducted within each program area during FY 2001 are listed at the front of the discussion of detailed results for the program area.

Impact on FY 2002 Performance Plans

Actual performance during FY 2001, Congressional action on the proposed budget, and the Department's Strategic Plan impacted the FY 2002 Performance Plans. Performance goals and targets for FY 2002 were revised as the performance for FY 2001 was being collected. Where results did not meet the goal for FY 2001, plans of action are presented with the detailed results. Revised performance measures for FY 2002 will be published with the FY 2003 Annual Performance Plan.

Previously unreported results

In the FY 2000 Accountability Report, no performance measures were reported as "unspecified."

Completeness and reliability of performance data

There are no material inadequacies in the completeness or reliability of the performance data. The performance data for FY 2001 is complete; there are no performance measures for which performance data is not provided. The reliability of the data is based on the Department's policy that the primary tool used at all levels to assess and evaluate results is self-assessment. The DOE program offices provided the performance information and concurred in this report.

Contribution of non-Federal parties to the preparation of this report

Non-Federal parties did not participate in the development of this report; however, because the Department uses many contractors to perform its mission, much of the data provided come from contractors.



Crosswalk of General Performance Goals and GPRA Program Activities

Energy Resources Programs

General Performance Goals		DOE Office - GPRA Program Activities	Page
ER1: Promote reliable, affordable, clean, and diverse domestic fuel supplies.			
ER1-1	MAINTAINING AN EFFECTIVE STRATEGIC PETROLEUM RESERVE	FE - Petroleum Reserves	A32
ER1-2	ENHANCING DOMESTIC OIL AND GAS SUPPLIES	FE - Domestic Oil and Gas Supply RD&D PO - Policy	A21 A148
ER1-3	ASSURING ADEQUATE LONG TERM SUPPLIES OF CLEAN LIQUID TRANSPORTATION FUELS	EE - Renewable & Distributed Energy FE - Clean Fuels R&D EE - Transportation Sector	A5 A29 A17
ER1-4	COORDINATING FEDERAL GOVERNMENT RESPONSES TO ENERGY EMERGENCIES	PO - Office of Policy	A149
ER2: Promote reliable, affordable, clean, transformation of fuel supplies into electricity and related products			
ER2-1	ESTABLISHING A MORE OPEN, COMPETITIVE ELECTRIC SYSTEM	PO - Office of Policy	A150
ER2-2	DEVELOPING LARGE, HIGH EFFICIENCY, ADVANCED POWER SYSTEMS	NE - Nuclear Energy R&D FE - High Efficiency, No/Low Emissions Power Systems R&D EE - Renewable & Distributed Energy	A39 A25 A6
ER2-3	INCREASE THE USE OF RENEWABLE, DISTRIBUTED AND HYBRID ENERGY SYSTEMS	EE - Renewable & Distributed Energy EE - Energy Management (FEMP) EE - Transportation Sector	A7 A13 A18
ER2-4	SUPPORTING RESEARCH TO IMPROVE EXISTING POWER PLANTS	NE - Nuclear Energy R&D	A41
ER2-5	RELIABLY DELIVERING FEDERAL HYDROELECTRIC POWER	PMA - Power Marketing Administrations	A49
ER2-6	APPLYING DOE NUCLEAR EXPERTISE TO SUPPORT USE AND DEVELOPMENT OF MEDICAL ISOTOPES	NE - Nuclear Energy Science Activities	A36
ER2-7	APPLYING DOE NUCLEAR TECHNOLOGY EXPERTISE TO SUPPORT EXPLORATION OF THE PLANETS	NE - Nuclear Energy Science Activities	A37
ER2-8	PRESERVING THE NATION'S SCIENCE AND ENGINEERING EDUCATIONAL INFRASTRUCTURE FOR ENERGY TECHNOLOGY	NE - Nuclear Energy Educational Infrastructure NE - Nuclear Energy R&D	A33 A41

**Crosswalk of General Performance Goals and GPRA Program Activities
Energy Resources Programs (continued)**

General Performance Goals		DOE Office - GPRA Program Activities	Page
ER3: Increase the efficiency and productivity of energy use, while limiting environmental impacts.			
ER3-1	DESIGNING AND DELIVERING THE VEHICLES OF THE FUTURE	EE - Transportation Sector	A19
ER3-2	IMPROVING THE ENERGY EFFICIENCY OF BUILDINGS	EE - Building Technology, State and Community Program	A11
		EE - Energy Management (FEMP)	A14
ER3-3	IMPROVING EFFICIENCY OF ENERGY INTENSIVE INDUSTRIES	EE - Industry Sector	A15
ER3-4	CONDUCTING POLICY ANALYSIS FOR DEPLOYING ENERGY EFFICIENT TECHNOLOGIES	PO - Office of Policy	A151
ER4: Inform public policy makers, energy industries, and the general public by providing reliable energy information.			
ER 4-1	ENSURING ENERGY-RELATED REGULATIONS AND PROCEDURES PRODUCE ECONOMIC, ENERGY AND ENVIRONMENTAL BENEFITS	PO - Office of Policy	A151
ER4-2	EXPANDING PUBLIC ACCESS TO ENERGY INFORMATION	EI - Energy Information Administration	A47
ER5-1	COOPERATING INTERNATIONALLY TO REDUCE ENERGY RELATED ENVIRONMENTAL IMPACTS	PO - Office of Policy	A151
		EE - Renewable & Distributed Energy	A8
ER5: Cooperate globally on international energy issues.			
ER5-2	COOPERATING INTERNATIONALLY TO DEVELOP OPEN AND TRANSPARENT ENERGY MARKETS	IA - Office of International Affairs	A154
		EE - Renewable & Distributed Energy	A9

Crosswalk of General Performance Goals and GPRA Program Activities National Nuclear Security Programs

General Performance Goals		DOE Office - GPRA Program Activities	Page
NS1: Maintain and refurbish nuclear weapons in accordance with directed schedules to sustain confidence in their safety, security, and reliability, indefinitely, under the nuclear testing moratorium and arms reduction treaties.			
NS1-1	MAINTAINING STOCKPILE CONFIDENCE	DP - Defense Programs	A54
NS2: Achieve a robust and vital scientific, engineering, and manufacturing capability that is needed for current and future certification of the nuclear weapons stockpile and the manufacture of nuclear weapon components under the nuclear testing moratorium.			
NS2-1	CONDUCTING CAMPAIGNS	DP - Defense Programs	A54
NS3: Ensure the vitality and readiness of DOE's nuclear security enterprise.			
NS3-1	ENSURING ENTERPRISE VITALITY AND READINESS	DP - Defense Programs	A56
NS3-2	MANAGING CONTRACTOR WORK FORCE RESTRUCTURING	WT - Worker and Community Transition	A85
NS4: Reduce the global danger from the proliferation of weapons of mass destruction.			
NS4-1	CONDUCTING NONPROLIFERATION AND VERIFICATION R&D	NN - Nonproliferation and Verification	A59
NS4-2	IMPROVING INTERNATIONAL NUCLEAR SAFETY	NN - International Nuclear Safety	A63
NS4-3	SUPPORTING ARMS CONTROL AND NONPROLIFERATION POLICIES	NN - Arms Control and Nonproliferation	A67
NS4-4	STRENGTHENING RUSSIA'S MATERIALS PROTECTION, CONTROL, AND ACCOUNTING	NN - International Material Protection, Control and Accounting	A71
NS4-5	ASSURING TRANSPARENCY IN THE CONVERSION OF RUSSIAN HIGHLY ENRICHED URANIUM (HEU)	NN - Highly Enriched Uranium Transparency Implementation	A75
NS4-6	REDUCING INVENTORIES OF SURPLUS WEAPONS-USABLE FISSILE MATERIALS WORLDWIDE IN A SAFE, SECURE, TRANSPARENT AND IRREVERSIBLE MANNER	NN - Fissile Materials Disposition	A79
NS5: Provide the U.S. Navy with safe, militarily effective nuclear propulsion plants, and ensure their continued safe and reliable operation.			
NS5-1	PROVIDING SPECIAL NUCLEAR POWER SYSTEMS FOR NATIONAL SECURITY	NR - Naval Reactors	A81
NS6: Ensure that the Department's nuclear weapons, materials, facilities, and information assets are secure through effective safeguards and security policy, implementation, and oversight.			
NS6-1	PROVIDING INTELLIGENCE AND COUNTERINTELLIGENCE	IN - Intelligence CN - Counterintelligence	A83
NS6-2	PROVIDING SECURITY AND EMERGENCY OPERATIONS	SO - Security and Emergency Operations	A88
NS6-3	CONDUCTING INDEPENDENT OVERSIGHT AND PERFORMANCE ASSURANCE	TOA - Independent Oversight & Performance Assurance	A91

**Crosswalk of General Performance Goals and GPRA Program Activities
Environmental Quality Programs**

General Performance Goals		DOE Office - GPRA Program Activity	Page
EQ1: Safely and expeditiously clean up sites across the country that supported nuclear weapons research, production, and testing and conduct DOE-funded nuclear energy and basic science research in the United States. After completion of cleanup, continue stewardship activities to ensure that human health and the environment are protected			
EQ1-1	COMPLETING GEOGRAPHIC SITE CLEANUP	EM - Environmental Management	A97
EQ1-2	DISPOSE OF WASTE GENERATED DURING PAST AND CURRENT DOE ACTIVITIES	EM - Environmental Management	A98
EQ1-3	STABILIZE NUCLEAR MATERIAL AND SPENT NUCLEAR FUEL	EM - Environmental Management	A100
EQ1-4	DEPLOYING INNOVATIVE CLEANUP TECHNOLOGIES	EM - Environmental Management	A102
EQ2: Complete the characterization of the Yucca Mountain site and, assuming it is determined suitable as a repository and the President and Congress approve, obtain requisite licenses, construct and, in FY 2010, begin acceptance of spent nuclear fuel and high-level radioactive wastes at the repository.			
EQ2-1	CONTINUING WITH YUCCA MOUNTAIN SITE CHARACTERIZATION	RW - Civilian Radioactive Waste Management	A104
EQ3: Manage the material and facility legacies associated with the Department's uranium enrichment and civilian nuclear power development activities.			
EQ3-1	DISPOSE OF THE DEPARTMENT'S DEPLETED URANIUM HEXAFLORIDE AND EXCESS NATURAL URANIUM INVENTORIES	EM - Environmental Management	A102
EQ3-2	MANAGING LEGACIES ASSOCIATED WITH CIVILIAN NUCLEAR POWER DEVELOPMENT ACTIVITIES	NE - Nuclear Energy Facilities and Infrastructure	A43

Crosswalk of General Performance Goals and GPRA Program Activities Science Programs

General Performance Goals		DOE Office - GPRA Program Activities	Page
SC1: Provide the leadership, foundations, and breakthroughs in the physical sciences that will sustain advancements in our Nation's quest for clean, affordable and abundant energy.			
SC1-1	MAKING ADVANCES IN PHYSICAL SCIENCES IN QUEST FOR CLEAN, AFFORDABLE AND ABUNDANT ENERGY	SC - Biological and Environmental Research SC - Basic Energy Sciences SC - Fusion Energy Sciences SC - Advanced Scientific Computing Research	A115 A121 A129 A125
SC2: Develop the scientific foundations to understand and protect our living planet from the adverse impacts of energy supply and use, support long-term environmental cleanup and management at DOE sites, and contribute core competencies to interagency research and national challenges in the biological and environmental sciences.			
SC2-1	DEVELOPING SCIENCE FOUNDATIONS TO PROTECT OUR LIVING PLANET	SC - Biological and Environmental Research	A116
SC3: Explore matter and energy as elementary building blocks from atoms to life, expanding our knowledge of the most fundamental laws of nature spanning scales from the infinitesimally small to the infinitely large.			
SC3-1	ADVANCING OUR UNDERSTANDING OF THE NATURE OF MATTER AND ENERGY	SC - High Energy Physics & Nuclear Physics SC - Biological and Environmental Research SC - Basic Energy Sciences	A111 A117 A122
SC4: Provide the extraordinary tools, scientific workforce, and multidisciplinary research infrastructure that ensures success of DOE's science mission and supports our Nation's leadership in the physical, biological, environmental and computational sciences.			
SC4-1	PROVIDING EXTRAORDINARY SCIENTIFIC TOOLS, WORKFORCE, AND INFRASTRUCTURE	SC - High Energy Physics & Nuclear Physics SC - Biological and Environmental Research SC - Basic Energy Sciences SC - Advanced Scientific Computing Research SC - Fusion Energy Sciences	A112 A118 A123 A126 A130

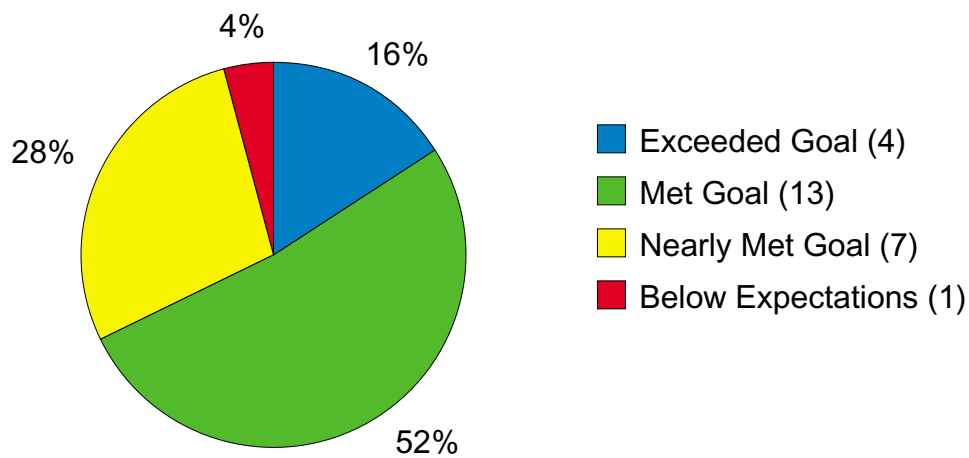
**Crosswalk of General Performance Goals and GPRA Program Activities
Corporate Management**

General Performance Goals		DOE Office - GPRA Program Activities	Page
CM1: Ensure the safety and health of the DOE work force and members of the public, and the protection of the environment in all Departmental activities.			
CM1-1	INSTITUTING A SOUND ES&H CULTURE	EH - Environmental Safety and Health	A135
CM2: Manage human resources and diversity initiatives and implement practices to improve the delivery of products and services.			
CM2-1	MANAGING HUMAN RESOURCES	MA - Office of Management and Administration ED - Office of Economic Impact and Diversity	A141 A146
CM3: Manage financial resources and physical assets to ensure public confidence			
CM3-1	MANAGING FINANCIAL RESOURCES AND PHYSICAL ASSETS	CFO - Office of Chief Financial Officer ED - Office of Economic Impact and Diversity PO - Office of Policy	A144 A147 A153
CM3-2	ENSURING PUBLIC CONFIDENCE IN THE DEPARTMENT'S CONTRACTUAL TRANSACTIONS	MA - Office of Management and Administration	A142
CM4: Manage information technology systems and infrastructure to improve the Department's efficiency and effectiveness.			
CM4-1	PROMOTING EFFECTIVE MANAGEMENT OF INFORMATION TECHNOLOGY RESOURCES IN THE DEPARTMENT	SO - Security And Emergency Operations	A87
CM5: Use appropriate oversight systems to promote the efficient, effective, and economical operation of the Department of Energy.			
CM5-1	PROMOTING THE EFFECTIVE, EFFICIENT, AND ECONOMICAL OPERATION OF THE DEPARTMENT OF ENERGY THROUGH AUDITS, INVESTIGATIONS, INSPECTIONS AND OTHER REVIEWS	IG - Office of the Inspector General	A158

Energy Resources

GOAL: Promote the development and deployment of energy systems and practices that will provide current and future generations with energy that is clean, reasonably priced, and reliable.

The following pages contain detailed information on the results achieved for revised final Energy Resources programs performance goals and targets for FY 2001, as presented in the FY 2002 Annual Performance Plan. There were 25 General Performance Goals in FY 2001 for Energy Resources programs. The overall results are:



Program Evaluations Conducted during FY 2001:

The major evaluations within Energy Resources programs that were conducted during FY 2001 are listed below. Through these evaluations, the Department was able to reassess its programs and reorient them or apply additional resources in order to achieve the intended objectives as part of the strategic planning process conducted in FY 2001.

In FY 2001, the Office of Energy Efficiency and Renewable Energy (EE) conducted a detailed Strategic Program Review to fulfill a recommendation of the President's National Energy Policy. The Strategic Program Review identified 20 EE activities that should be terminated because their expected outcomes did not constitute a sufficient return on investment, they lacked public support, or the technologies involved were mature enough to be "graduated" to the private sector. Additionally, the Strategic Program Review identified a number of activities, such as the Partnership for a New Generation of Vehicles that could potentially provide appropriate public benefits if the activities were redirected and redefined to increase their probability of success.

The Strategic Program Review cited several activities that had the potential to provide public benefits, yet needed closer monitoring to ensure they advanced effectively and expeditiously. These areas included Congressionally earmarked projects, EE's Office of Building Technologies, State and Community Programs' demonstration and deployment programs, and the Distributed Energy Resources Program's microturbine research efforts, among others. Several programs identified that could achieve significantly greater benefit included research and development (R&D) on hydrogen as an energy carrier that can provide pollution-free, carbon-free power, building equipment R&D, fuel cell vehicles, low-wind speed turbines, peak load reduction activities, and international energy efficiency and renewable energy development programs. Finally, the Strategic Program Review identified a number of "best practices" currently used by some EE programs that could be usefully replicated in other programs. These best practices include competitive solicitations, technology roadmapping, multi-year planning based on critical path milestones, and increasing the number of EE private sector partners.

The Strategic Program Review quantified the receipt of prestigious R&D 100 awards as indicative of outstanding historical performance. Technology advances by companies, universities, and public agencies throughout the world compete for these externally administered and independently peer reviewed awards. Across all EE supported research, 106 R&D 100 awards were received for the period 1978 through 2001, placing EE above all other government agencies except the much larger National Aeronautics and Space Administration (with 125 R&D 100 awards), above all companies except General Electric (with 163), above all other countries except Japan (with 157), and above all universities (Massachusetts Institute of Technology was first with 30). The number of awards received by EE has increased over time, with over half received since 1995.

Economic, environmental, and security benefits resulting from EERE's research, development, demonstration, and deployment (RD3) activities were also evaluated. The Strategic Program Review focused on the July 2001 National Academy of Science's National Research Council (NAS/NRC) review of the benefits from EERE programs. The study conducted detailed examination of about \$1.6 billion worth of the total \$7.2 billion (in constant 1999 dollars) R&D investment by EERE in energy efficiency from 1978 through 2000. They found a net realized economic benefit to the U.S. economy on this \$1.6 billion investment of \$30 billion, a return-on-investment of roughly 19 to 1. In addition, the NAS/NRC estimated that the United States realized between \$3 and \$20 billion in environmental benefits from EERE programs. The NAS/NRC also noted that if a constant technology baseline were assumed, estimated economic benefits would be \$78 billion, but their "very conservative" methodology reduced these benefits to \$30 billion.

GPRA Program Activity: Renewable and Distributed Energy Resources

Annual Performance Plan GPRA Program Activity	DOE Office	Financial Statement Footnote	Program Element In Schedule Net Costs	NET COSTS (\$M)		
				FY 01	FY 00	FY 99
Renewable & Distributed Energy	EE	20	Power Technologies	\$328	\$301	\$321

Description: The mission of the Renewable and Distributed Energy Resources program is to lead the national effort to develop clean, competitive, reliable power technologies for the 21st Century, and to accelerate their national and international acceptance and use. The Office of Energy Efficiency and Renewable Energy (EE), supports research and development of clean, reliable, renewable and distributed energy technologies and cutting edge power infrastructure technologies that will improve the performance and efficiency of electric power systems. The EE Office of Power Technologies (OPT) implements the program activities that support the following general performance goals.

Assuring Adequate Long Term Supplies Of Clean Liquid Transportation Fuels (ER 1-3)

Develop technologies to produce ultra-clean fuels from natural gas, oil, coal, biomass, and hydrogen from a variety of sources, which can be used with minimal negative environmental consequences. Promote the use of alternative fuel vehicles in selected markets, and work with fuel providers and individual communities to help promote the development of refueling infrastructure and provide incentives for the use of alternative fuel. Promote the use of non-petroleum and renewable replacement fuels, such as ethanol, as blends in gasoline and diesel fuel. Promote the use of non-petroleum and renewable replacement fuels, such as hydrogen and biodiesel for electricity generation. In addition, EE's Office

of Power Technologies has initiated a feasibility study and conceptual design of a gasifier-based co-firing process in FY 2001 and will initiate testing of as many as four Small Modular BioPower Systems, with applications domestically and internationally in FY 2002. (Met Goal)

FY 2001 Targets and Results:

Target: Issue competitive solicitation and select at least one partner for innovative biofuels production technologies and make awards to qualified research organizations.

Result: EE, in partnership with National Renewable Energy Laboratory (NREL) and Purdue University, issued a competitive solicitation and selected Williams Energy Corporation for the demonstration of technology to turn corn fiber into ethanol.

FY 2000 Targets and Assessments:

- (1) Complete three projects which will be co-firing with biomass on a regular basis. (Met Goal)
- (2) Establish an interagency council and an advisory committee on biobased products and bioenergy. By April 30, 2000, develop a strategic plan for the development and use of biobased products and bioenergy as required by Executive Order 13134. (Met Goal)

FY 1999 Targets and Assessments:

- (1) Complete design of power plant modifications for co-firing of biomass with coal. (Met Goal)
- (2) Develop an industry-led vision and roadmap for an integrated bioenergy industry to advance the development of biomass derived energy and its use in domestic and global markets. (Nearly Met Goal)

Developing Large, High Efficiency, Advanced Power Systems (ER 2-2)

Enhance the economics and environmental performance of electricity generation by expanding the use of multi-product facilities that can also produce heat, clean fuels, and/or chemical products. Pursue evolutionary improvements in existing carbon-dioxide (CO₂) capture systems, and explore revolutionary new greenhouse gas capture and sequestration concepts with a view toward significant cost reductions. Develop innovative enabling technologies such as high temperature superconductors to improve efficiency and performance. Develop advanced fossil-based and nuclear-based power generation sys-

tems that can meet future environmental goals at reasonable cost. EE supports this goal in the areas of advanced turbine systems and development of high temperature superconducting electrical transmission cable development. (Exceeded Goal)

FY 2001 Targets and Results:

Target: Document 6,000 hours (100 percent load) operation of the first successful, high-temperature, superconducting power delivery system to power an industrial use.

Result: Achieved more than 10,000 hours of continuous operation at 100 percent load. (From June 1, 2001, continuous unmanned operation).

Target: Install first-of-a-kind, superconducting electrical transmission cables to replace existing delivery to an urban substation serving 14,000 customers in Detroit, Michigan, and begin testing operation and reliability.

Result: Superconducting cable was installed in Detroit substation. Testing of the components began September 1, 2001.

Target: Complete 5,000-hour durability, performance and emissions testing of the Mercury 50 advanced turbine system engine.

Result: Milestone exceeded; completed more than 5,000 hours of durability, performance and emissions testing of the Mercury 50 advanced turbine system engine.

FY 2000 Targets and Assessments:

- (1) Install and begin testing of two proof-of-concept turbines under the Next Generation Turbine program leading to commercial availability of technology capable of producing electricity at 2-1/2 cents per kWh in a 15-miles-per-hour wind resource by 2003. (Met Goal)

(2) Demonstrate two advanced industrial turbine system engines at end-user sites. (Met Goal)

FY 1999 Targets and Assessments:

(1) Establish a United States-based commercial firm as an internationally recognized certification agent using testing and design review services provided by the National Wind Technology Center. (Met Goal)

(2) Initiate the 8,000 hour test of the gas turbine engine for the Advanced Turbine System for use in industrial cogeneration. (Met Goal)

Conducting R&D To Increase The Use Of Renewable, Distributed And Hybrid Energy Systems (ER 2-3)

Improve the performance and expand the use of non-hydroelectric renewable energy generating capacity while maintaining the hydroelectric option in the United States. Develop technologies to increase the amount of the Nation's distributed power (i.e., located at the point of use). Develop hybrid applications such as combined heat and power systems and power parks. This GPRA activity provides the primary funding for this goal. (Exceeded Goal)

FY 2001 Targets and Results:

Target: Facilitate the installation of 20,000 solar energy systems, bringing the total number of installed systems to 125,000.

Result: Milestone met early; 50,000 new solar energy systems (155,000 total) installed by September 30, 2000.

Target: Develop a 14 percent efficient stable prototype thin-film photovoltaic module.

Result: With partner Siemens Solar, Inc., EE/National Renewable Energy Laboratory (NREL) produced world record, 14.1 percent efficiency, prototype (CIS) PV modules.

Target: Evaluate potential for small (1-10 kW) dish-based systems to compete in green distributed markets before 2005.

Result: Successful potential evaluation resulted in awards made to competitively selected small dish developers; two universities awarded contracts to parallel industry projects.

Target: Select industrial partners to build two cost-shared geothermal power plants using Enhanced Geothermal System (EGS) technology.

Result: Six Industrial Partners selected through competitive solicitation. Awards given in February 2001 to create detailed conceptual designs of Enhanced Geothermal Systems. Two designs of advanced air-cooled condensers for geothermal applications planned for completion in FY 2000 were completed.

Target: Move advanced wind hybrid control system technology developed jointly with U.S. Department of Agriculture (USDA) to commercial availability.

Result: Tests substantially completed. Control system offered commercially.

Target: Produce 20 cubic meters per hour of hydrogen via steam reforming of biomass pyrolysis oil, in a Process Development Unit (PDU).

Result: Produced 20 cubic meters per hour of hydrogen via steam reforming of biomass pyrolysis oil, enabling design of a field PDU for partner installation.

FY 2000 Targets and Assessments:

- (1) Facilitate the installation of 20,000 solar energy systems in support of the Million Solar Roofs Initiative, bringing the total number of installed systems to 70,000. (Exceeded Goal)
- (2) Develop a 13 percent efficient stable prototype thin-film photo-voltaic module. (Nearly Met Goal)
- (3) Demonstrate fully autonomous operation of a 10KW dish engine system for off-grid applications. (Met Goal)
- (4) Complete two designs of advanced air-cooled condensers for geothermal applications. (Nearly Met Goal)

Plan of Action: NREL plans to design an air-cooled condenser unit for a 1MW plant in FY 2001 and develop a test plan for it. INEEL will focus on developing information required to select the best possible design; bench-scale tests will be completed during FY 2001. Emphasis will be placed on collaboration with manufacturers to identify suitable methods to fabricate the selected design.

FY 1999 Targets and Assessments:

- (1) Support the Million Solar Roofs Initiative by installing 15,000 energy systems. (Exceeded Goal)
- (2) Develop codes, standards and safety specifications for residential photovoltaic roof systems. (Nearly Met Goal)
- (3) Accumulate 750 hours of reliable operation for a distributed concentrating solar power system. (Exceeded Goal)

Cooperating Internationally To Reduce Energy Related Environmental Impacts (ER 5-1)

EE supports this goal in the area of international renewable energy and joint implementation, and is facilitating more comprehensive information exchange from developed to developing countries on renewable energy and energy efficiency technologies. (Met Goal)

FY 2001 Results:

The total results of international information exchange cannot be cost effectively measured and attributed. There is no way of knowing whether achieved environmental benefits are directly related to information provided by the United States; however, by way of example, we know that our efforts to disseminate information on the mitigation of Energy and Environmental Technology Information Centers (EETIC) Greenhouse Gas Emission resulted in a total of 413,781 pages of information requested through EETIC's website from a total of 83,446 visitors to the site. The number of visitors to the site in FY 2001 rose by 13 percent, and the average visitor spent more time at the site, requesting a total of 6.1 pages of information per visit. We also know that through the U.S. Initiative on Joint Implementation (USIJI), an approved project in Bolivia (Hidroelectrica Boliviana S.A.) proposes to construct a run-of-the-river hydroelectric 83.5MW facility which expects, over the life of the plant (35 years), to displace approximately 10 million metric tons of greenhouse gas emission credits, representing 286,298 million metric tons of equivalent offsets per year. The total cost of the project is approximately \$94 million. The United States funded \$235,000 for engineering, general development work, and carbon dioxide (CO₂) emission trading feasibility work.

FY 2000 Targets and Assessments:

Respond to 70,000 inquiries by individuals, small businesses, and state and local government through the Energy Efficiency and Renewable Energy Clearinghouse (EREC). (Met Goal)

FY 1999 Targets and Assessments:

No performance targets were established for FY 1999.

Cooperating Internationally To Develop Open And Transparent Energy Markets (ER 5-2)

EE supports this goal through activities such as leading the Committee on Energy Efficiency, Commerce and Trade (COEECT). (Met Goal)

FY 2001 Results:

COEECT supported training courses for 35 Caribbean hotel owners/operators on the benefits of energy efficiency and the uses of renewable energy in conjunction with the Caribbean Alli-

ance for Sustainable Tourism (CAST). It supported three Seminars in China focusing on energy efficiency opportunities in the industrial sector with topics including: lighting; controls; steam and hot water generation and distribution; heating, venting and air conditioning (HVAC); motors and drives; and financing. In addition, the committee supported two energy efficiency seminars focused on the industrial sector, which were held in Mexico and attended by 175 maintenance managers, general managers, and financial managers from a wide variety of Mexican industrial facilities. One immediate result of the seminars was the identification by one company in attendance of five potential clients interested in cogeneration projects and the beginning of negotiations.

FY 2000 Targets and Assessments:

No performance targets were established for FY 2000.

FY 1999 Targets and Assessments:

No performance targets were established for FY 1999.

GPRA Program Activity: Building Technology, State and Community Programs

Annual Performance Plan GPRA Program Activity	DOE Office	Financial Statement Footnote	Program Element In Schedule Net Costs	NET COSTS (\$M)		
				FY 01	FY 00	FY 99
Building Technology, State & Community Programs	EE	20	Building Technology, State & Community Programs	\$307	\$290	\$255

Description: In partnership with industry and government, the Office of Building Technology, State and Community Programs (BTS) develops, promotes and integrates energy technologies and practices to make buildings more efficient and affordable and communities more livable. BTS implements the program activities that support the following general performance goal.

Improving The Energy Efficiency Of Buildings (ER 3-2)

Develop products and strategies to increase the efficiency of new and existing residential and commercial buildings. The program provides grants to states, the District of Columbia, and the territories to conduct state and local energy programs, and assists communities and businesses to incorporate high performance energy-efficient technologies and practices. (Nearly Met Goal)

FY 2001 Targets and Results:

Target: Weatherize 75,350 homes, bringing the total number to 4.8 million.

Result: The 5-millionth weatherized home was completed in November 2001 (symbolic). The Weatherization Assistance Pro-

gram (WAP) is performing on schedule and expects to meet or exceed its FY 2001 funds Program Year 2001 goal of weatherizing over 75,350 homes. The weatherization Program Year 2001 runs from April 2001 through March 2002 for 34 states, and from July 2001 through June 2002 for the balance of states. Final data for Program Year 2001 will be available from all states by September 2002. At the time of this writing, the total number of homes weatherized using DOE and other funds leveraged from a variety of sources was approaching 5 million. For Program Year 2000, the weatherization program completed 72,444 homes, exceeding its goal of 68,000 homes.

Target: Recruit 400 new ENERGY STAR partners, bringing the total number of stores marketing ENERGY STAR appliances up to 6,500.

Result: The 292 new manufacture and retail partners, plus 27 new utility partners (jointly with the Environmental Protection Agency) enabled added sufficient retail outlets to significantly exceed our goal, which is to provide outlets and sales of ENERGY STAR products. The partners added sufficient retail outlets to generate a cumulative total of 13,900 stores marketing ENERGY STAR appliances, far exceeding the FY 2001 goal of 6,500 stores.

Target: With Building America Partners, complete 3,000 energy-efficient, environmentally-sound, high performance homes.

Result: Building America partners exceeded their goal by completing 3,800 energy efficient, environmentally-sound, high-performance homes, cumulative through FY 2001 with support from Partnership for Advanced Technology in Housing (PATH) and other dissemination sources. [Note: Support for Plan of Action in FY 2000.]

Target: Publish Advance Notice Of Proposed Rulemaking (ANOPR) concerning standards for commercial HVAC and water heaters, and distribution transformers.

Result: Activity on this measure was postponed by Departmental review.

Plan of Action: This target was delayed due to the review of four final appliance standards by the Department; resources required for meeting goal were not available. The rulemaking for commercial HVAC was reinitiated in the fall of 2001. The rulemaking for distribution transformers was also delayed, as the test procedure required for the rulemaking needed substantially more modification than anticipated.

FY 2000 Targets and Assessments:

(1) Weatherize 68,000 homes, bringing the total number of homes weatherized to 4.8 million. (Exceeded Goal)

(2) Recruit five utility partners to promote ENERGY STAR products; an additional 500 retail stores to promote ENERGY STAR products; and 40 window partners to promote ENERGY STAR Windows. (Exceeded Goal)

(3) In partnership with Building America, build more than 2,000 highly energy-efficient, environmentally-sound, and cost-effective houses and disseminate results to builders of 15,000 other houses through the Partnership for Advanced Technology in Housing (PATH). (Nearly Met Goal)

Plan of Action: Seek additional support from PATH and other dissemination sources to meet dissemination goals.

(4) Issue final rules regarding energy efficiency standards for fluorescent lamp ballasts and water heaters and issue proposed rules regarding energy efficiency standards for clothes washers and central air conditioners. (Nearly Met Goal)

FY 1999 Targets and Assessments:

(1) Weatherize 67,845 homes, bringing the total number of homes weatherized to 4.7 million. (Exceeded Goal)

(2) Work with the Federal Trade Commission to allow manufacturers to add the ENERGY STAR logo to the yellow and black FTC "Energy Guide" label for covered products and recruit an additional 1,500 stores to market ENERGY STAR appliances nationwide. (Exceeded Goal)

(3) Complete 100 homes that are over 50-percent more efficient than typical homes through the Building America program, bringing the total number of homes completed to 700. Add five new community scale projects for building 1,000 additional homes in FY 2000, and transfer research recommendations to the Partnership for Advancing Technology in Housing (PATH). (Exceeded Goal)

GPRA Program Activity: Energy Management

Annual Performance Plan GPRA Program Activity	DOE Office	Financial Statement Footnote	Program Element In Schedule Net Costs	NET COSTS (\$M)		
				FY 01	FY 00	FY 99
Federal Energy Management Program	EE	20	Federal Energy Management Program	\$26	\$27	\$23

Description: The mission of the Federal Energy Management Program (FEMP) is to reduce the cost of Federal government by advancing energy efficiency and water conservation, promoting the use of renewable energy and managing utility costs in Federal facilities and operations, including those of the Department of Energy. Through alternative financing vehicles, technical assistance, and an outreach campaign, FEMP helps Federal customers address their energy management needs. FEMP aids in the design and construction of energy efficient buildings, effective operation and maintenance of existing facilities, major retrofits, purchase of energy efficient products, and utility and load management. FEMP leverages both Federal and private resources to provide technical and financial assistance to Federal agencies.

Increase The Use Of Renewable, Distributed, Hybrid Energy Systems (ER 2-3)

Improve the performance and expand the use of non-hydroelectric renewable energy generating capacity in the United States. Develop technologies to increase the amount of the Nation's distributed power (i.e., electric generating systems connected to the distribution portion of the grid). (Nearly Met Goal)

FY 2001 Results:

Contract awards have been made with two Energy Service Companies (ESCOs) for solar (photovoltaic) technology Super Energy Savings

Performance Contracts (Super-ESPCs). No Federal Government agencies have utilized this mechanism thus far. The reason appears to be the 10-year payback rule.

Plan of Action: Encourage interested parties to consider "bundling" PV installations, which have a longer payback period, with lighting or other improvements which have faster paybacks. It is the overall payback period for the group of actions that is measured, not the payback for each individual component that is tracked.

Another option is to seek an exception to the 10-year payback rule for solar systems. This has been done for some other technologies. Part of the rationale could be energy security, onsite generation and reliability, reduction of emissions, mitigating the need for increased transmission and delivery (T&D) capacity.

FY 2000 Targets and Assessments:

Complete one nationwide technology Super-ESPC for use by all agencies, bringing the total number of technology Super-ESPCs to four. (Nearly Met Goal)

Plan of Action: Issue the solicitation in FY 2001 and implement projects in calendar year 2001.

FY 1999 Targets and Assessments:

Complete three nationwide solar technology Super-Energy Savings Performance Contracts (ESPCs) for use by all agencies. (Below Expectations)

Improving The Energy Efficiency Of Buildings (ER 3-2)

Develop products and strategies to increase the efficiency of new and existing residential and commercial buildings. (Met Goal)

FY 2001 Targets and Results:

Target: The Federal government has established the goal of increasing energy effi-

ciency in Federal buildings by 35 percent by 2010 relative to 1985. The 2001 performance target is to achieve a 22 percent improvement in energy efficiency relative to the goal base year of 1985.

Result: Preliminary data dated December 2001 for FY 2000 indicate that the Federal government achieved a 23.6 percent reduction in energy intensity on a BTU/gross square foot basis since 1985, exceeding the FY 2001 goal.

FY 2000 Targets and Assessments:

Continue efforts to reduce the use of energy in Federal buildings and report the results achieved through the end of FY 1998, toward the goal of achieving a 20 percent reduction by the end of FY 2000 as compared to 1985 energy use. Preliminary data indicates that agencies had achieved a 17 percent reduction at the end of FY 1997. (Exceeded Goal)

FY 1999 Targets and Assessments:

No performance targets were established for FY 1999.

GPRRA Program Activity: Industry Sector

Annual Performance Plan GPRRA Program Activity	DOE Office	Financial Statement Footnote	Program Element In Schedule Net Costs	NET COSTS (\$M)		
				FY 01	FY 00	FY 99
Industry Sector	EE	20	Industrial Technology	\$196	\$161	\$163

Description: The mission of the Office of Industrial Technologies (OIT) is to improve the energy efficiency, environmental performance, and productivity of energy-intensive industries by rapidly developing and delivering advanced science and technology options which will: 1) lower raw material and depletable energy use per unit output; 2) improve labor and capital productivity; and, 3) reduce the generation of wastes and pollutants. OIT implements the program activities that support the following general performance goals.

Improving Efficiency Of Energy Intensive Industries (ER 3-3)

Develop technologies and methods that can significantly improve the efficiency of the Nation's energy intensive industries and reduce environmental emissions. (Nearly Met Goal)

FY 2001 Targets and Results:

Target: One new solicitation will be issued in FY 2001 targeted to the Renewables Vision 2020 for Agriculture in support of the goals of the President's bio-based products and bio-energy initiative.

Result: The solicitation was issued in January 2001. In September, the Secretary announced \$30 million in awards over the next three to five years for 11 projects to develop process technology to produce chemicals, plastics, materials and other products from

plant matter and other natural waste materials. Six of these projects were a result of the solicitation.

Target: Continue support for Industrial Assessment Centers operating at 26 participating universities that will conduct approximately 650 combined energy waste and productivity assessments.

Result: Support was provided to 26 centers which conducted approximately 650 assessments. Some of the new centers starting up were unable to meet their targets, but additional assessments were conducted at the veteran centers at the request of DOE.

Target: Complete 15 assessments on five case studies of major industrial plants that will document for a variety of system-focused implemented actions. These will influence replication of similar energy savings for other plants.

Result: Five case studies were completed, and though more than 15 assessments were

initially planned, only seven of the anticipated assessments were completed in FY 2001 due to external causes. Two were actually completed early (sum of nine); two were delayed due to plant strikes (sum of 11); one was delayed due to regulatory issues (sum of 12); and the second round of awards from which a complement of assessments were expected were not closed until October, too late to be completed in FY 2001.

Plan of Action: A fourth round of awards closed on October 15, 2001. A total of 10 assessments are in progress and should be completed by the end of FY 2002. The second round of competitive awards received a smaller number of acceptable awards than anticipated. Only 13 proposals were submitted. Several of these were ineligible because they did not focus on energy intensive industries and four to five did not deal with plant-wide assessments, but rather with technology implementation. In FY 2002, the program is conducting follow-up analyses to assess the actual impacts of the major industrial plant assessments completed to date including analyses of replications.

FY 2000 Targets and Assessments:

(1) Initiate 12 solicitations with industry in support of the roadmaps developed in the

Industries of the Future program. (Exceeded Goal)

(2) Continue support for industrial assessment centers operating at 30 participating universities that will conduct approximately 750 combined energy, waste and productivity assessments. (Met Goal)

(3) Establish partnerships with 50 Industries of the Future plants to provide integrated delivery of tools and technical assistance to target motors, steam, compressed air, and combined heat and power system opportunities. (Met Goal)

FY 1999 Targets and Assessments:

(1) Complete roadmaps for six of the major energy intensive industries to achieve each industry vision and start implementing the resulting research and development to achieve up to 25 percent reduction of energy consumption by 2010. (Met Goal)

(2) Continue support for industrial assessment centers operating at 30 participating universities that will conduct approximately 750 combined energy, waste and productivity assessments. (Met Goal)

GPRRA Program Activity: Transportation Sector

Annual Performance Plan GPRRA Program Activity	DOE Office	Financial Statement Footnote	Program Element In Schedule Net Costs	NET COSTS (\$M)		
				FY 01	FY 00	FY 99
Transportation Sector	EE	20	Transportation Technology	\$288	\$262	\$277
Renewable & Distributed Energy	EE	20	Utility Technology	*	*	*

* Transportation Sector costs from Renewable and Distributed Energy are shown in the GPRRA Activity for Renewable and Distributed Energy.

Description: The mission of the Transportation sector is to support the development and use of advanced transportation vehicles and fuels which will reduce energy demand, particularly petroleum; reduce criteria pollutant and greenhouse gas emissions; and enable the United States to sustain a strong competitive position in domestic and world markets. EE implements the program activities that support the following general performance goals.

Assuring Adequate Long Term Supplies Of Clean Liquid Transportation Fuels (ER 1-3)

Develop technologies to produce ultra-clean fuels from natural gas, oil, coal, biomass, and hydrogen from a variety of sources, which can be used with minimal negative environmental consequences. Promote the use of alternative fuel vehicles in selected markets, and work with fuel providers and individual communities to help promote the development of refueling infrastructure and provide incentives for the use of alternative fuel. Promote the use of non-petroleum and renewable replacement fuels — such as ethanol — as blends in gasoline and diesel fuel. EE supports this goal in the area of biofuels and alternative fuels development. (Met Goal)

FY 2001 Targets and Results:

Target: Support the annual acquisition of 12,000 alternative fuel vehicles in the Federal Fleet.

Result: The Department met its acquisition target of 617 alternative fuel vehicles; acquiring 721 alternative fuel vehicles (AFV). In addition, the Department earned 16 extra vehicle credits under E.O. 13149 by purchasing dedicated AFVs and 142 extra vehicle credits under the Act by using biodiesel fuel in existing diesel vehicles, raising its final compliance number to 879 vehicles. The Department aggressively supported the acquisition of alternative fuel vehicles by other Federal agencies, including implementation of an internet based reporting system. FY 2001 vehicle acquisition data

for other Federal agencies (e.g., DOD, USPS, GSA, Interior) has been delayed and as of February 5, 2002, this data is being compiled and validated.

FY 2000 Targets and Assessments:

- (1) Demonstrate conversion of agricultural wastes to ethanol at a small commercial scale using a genetically-engineered fermentative microorganism. (Met Goal)
- (2) Launch two projects that will lead to 100 percent penetration of alternative fuel vehicles in selected niche applications such as a local taxi fleet or the busses for a particular school. (Exceeded Goal)

FY 1999 Targets and Assessments:

- (1) Support an industrial partner to complete site preparation and begin construction of industry-owned facility to demonstrate first-of-a-kind cellulosic biomass to ethanol technology from agricultural crop waste. (Nearly Met Goal)
- (2) Expand the Clean Cities program to create continuous corridors of alternative transportation fuel availability in and between 10 major urban centers. (Met Goal)
- (3) Build a single cylinder proof-of-concept diesel engine that delivers up to 55 percent efficiency. (Nearly Met Goal)

Conducting R&D To Increase The Use Of Renewable, Distributed And Hybrid Energy Systems (ER 2-3)

Improve the performance and expand the use of non-hydroelectric renewable energy generating capacity while maintaining the hydroelectric option in the United States. Develop technologies to increase the amount of the Nation's distributed power (i.e., electric generating systems connected to the distribution portion of the grid). (Met Goal)

FY 2001 Targets and Results:

Target: Complete test and evaluation of a fuel-flexible, 50 kW, integrated fuel cell power system.

Result: The fuel-flexible, 50 kW, integrated fuel cell power system underwent a successful test and evaluation program that concluded in May 2001. The fuel cell system was manufactured and tested by International Fuel Cells. Results of the testing program include: Rated power output 53 kW, Efficiency at 1/4 power 32 percent, Specific Power 0.08 kW/kg, Power density 0.07 kW/L Fuel CA Phase II RFG (gasoline), Operating Voltage 255V to 420V.

FY 2000 Targets and Assessments:

Complete testing of baseline prototype, 50-volt high power lithium-ion modules for use in hybrid vehicles. (Met Goal)

FY 1999 Targets and Assessments:

By September 1999, in cooperation with industry and other federal agencies, develop a direct-injection power system technical roadmap and a fuel cell power system technical roadmap to integrate fuels and lubricants research and development with development of engine and emissions treatment technologies. (Met Goal)

Designing And Delivering The Vehicles Of The Future (ER 3-1)

Develop and deploy advanced vehicles, fuels, and systems that will significantly increase gas mileage and reduce environmental emissions without compromising safety, comfort, and cost. (Met Goal)

FY 2001 Targets and Results:

Target: Complete testing of the 276 volt battery aimed at demonstrating an integrated system having thermal and electrical controls.

Result: The Idaho Engineering and Environmental Laboratory completed testing of the 276-volt battery with an electronic control system and a forced-air cooling system. The high-power battery achieved 300,000 25

Watt-hour power assist profiles. One of the key technical targets for the energy storage unit for hybrid-electric vehicles is the ability of the energy storage device to perform 300,000 25 Watt-hour power assist profiles, which is equivalent to operating the device in a vehicle for 150,000 miles.

FY 2000 Targets and Assessments:

Work with three domestic automakers to incorporate the most promising Partnership for a New Generation of Vehicles (PNGV) technologies in concept vehicles with up to three times the average fuel economy of 1993 Taurus, Lumina, and Concorde models. (Exceeded Goal)

FY 1999 Targets and Assessments:

No performance targets were established in FY 1999.

GPRRA Program Activity: Domestic Oil and Gas Supply RD&D

Annual Performance Plan GPRRA Program Activity	DOE Office	Financial Statement Footnote	Program Element In Schedule Net Costs	NET COSTS (\$M)		
				FY 01	FY 00	FY 99
Oil Technology	FE	20	Petroleum Research & Development	\$63	\$55	\$43
Gas Technology	FE	20	Gas Research & Development	\$35	\$59	\$129

Description: The Department’s Domestic Oil and Gas Supply Program seeks to ensure the availability of competitively-priced oil and natural gas supplies to support a strong U.S. economy, and to maximize the Public benefit of the Nation’s oil and gas resources. The Program’s research and development activities focus on enhancing the efficiency and environmental quality of domestic oil and natural gas exploration, recovery, processing, transport, and storage operations. Funding is also included for activities that foster development and deployment of technologies to enhance reliability and deliverability of the Nation’s natural gas pipelines and gas storage facilities. Fossil Energy (FE) activities under this program support the following general performance goal that flows from the Department’s Strategic Plan.

Enhancing Domestic Oil And Gas Supplies (ER 1-2)

Provide policy, legislative, regulatory, and technology options, as well as improved practices to enhance the availability of domestic oil and natural gas supplies, while minimizing the environmental impacts of production. (Nearly Met Goal)

FY 2001 Targets and Results:

Target: Complete demonstration of five advanced secondary and tertiary technologies. Based on models, it is estimated these technologies will increase near-term incremental production by 1.7 million barrels of oil,

and long-term incremental production by over 2.4 billion barrels of oil.

Result: Results on this target were nearly met. While only four of the five demonstration projects were completed, the ultimate measure of these activities, incremental production, significantly exceed expectations. Near-term incremental oil produced for three of the four completed projects is 4.4 million barrels, compared to the initial goal of 1.7 million barrels. Production from the fourth project has not been reported, but will increase the total. Based on results thus far, the estimate for long-term incremental production is expected to exceed the 2.4 billion barrel goal. This target is the most important of the three relative to the Goal.

Plan of Action: DOE will continue to pursue the completion of the one remaining technology demonstration project. However, its completion is dependent upon the corporate plans and business strategy of the new property owner. The new owner/operator has expressed an interest in continuing work once the sale is completed and will request a modification to the contract with DOE. DOE program managers will work with the new owner/operator of the suspended demonstration project to minimize the delay in the demonstration of the new technology. However, our plan of action is completely dependent upon decisions by the new owner/operator. Successful resumption and completion of this project will allow the goals of this performance measure to be fully met. The new owner/operator has not provided a time frame for negotiating a modified contract.

Target: Demonstrate the field application of a shoulder-mounted, portable video methane leak detection system that can be used to significantly reduce costs of leak monitoring at refineries and other facilities while reducing harmful air emissions. Annual savings of \$500,000 per year per refinery, on average, would result from regulatory acceptance and application of this technology.

Result: Results on this target were not met due to the September 11 attacks, thus was graded as "Below Expectations."

Plan of Action: Complete the refinery test in FY 2002. Analyze results and work with the Environmental Protection Agency and industry to implement this technology as the approved method for leak detection in U.S. refineries.

Target: Quantify a hydrate deposit by correlating core samples with geophysical and well log data.

Result: Target was met.

FY 2000 Targets and Assessments:

(1) Complete demonstration and transfer of seven advanced secondary and tertiary technologies, adding 92 million barrels of reserves, increasing the number of economic wells and reducing abandonment rates. (Met Goal)

(2) Complete field testing and monitoring of two technologies for downhole separation of oil and water, resulting in a reduction in water and potential increase in oil production per well. (Nearly Met Goal)

(3) Identify a site containing gas hydrates suitable for testing the feasibility of methane recovery. (Met Goal)

(4) Demonstrate a cost effective horizontal well and advanced exploration and stimulation technologies in low permeability natural gas formations for increasing recovery of the 5,000+ trillion cubic feet (TCF) of gas in place in the Greater Green River and Wind River Basins. (Nearly Met Goal)

Plan of Action: A stimulation demonstration will not be pursued at this time.

FY 1999 Targets and Assessments:

(1) Demonstrate four advanced production enhancement technologies that could ultimately add 190 million barrels of domestic reserves, including 30 million barrels during FY 1999. (Exceeded Goal)

(2) Complete an online environmental compliance expert system, developed in cooperation with states, that will improve oil and gas production economics by giving producers online access to Federal and state rules and regulations, and allow them to conduct environmental permitting and reporting over the Internet, reducing time and costs

related to environmental compliance.
(Nearly Met Goal)

(3) Complete development of one Advanced
Drilling, Completion & Simulation technol-

ogy system that could contribute to an addi-
tional six TCF of domestic gas reserves by
2010. (Met Goal)

GPRRA Program Activity: High Efficiency, No/Low Emissions Power Systems Research and Development (R&D)

Annual Performance Plan GPRRA Program Activity	DOE Office	Financial Statement Footnote	Program Element In Schedule Net Costs	NET COSTS (\$M)		
				FY 01	FY 00	FY 99
Coal & Power Systems	FE	20	Coal Research and Development Technology	\$249	\$215	\$124
Clean Coal Technology	FE	20	Clean Coal Technology	\$115	\$53	\$55

Description: The power systems R&D program addresses the energy and environmental demands of the post 2000 domestic market, including increasing international pressure to reduce greenhouse gas emissions, and helps U.S. industry meet the needs of a currently large and growing export market, while contributing to national energy security. The coal program is focused on three goals. The first goal is to develop progressively higher efficiency and cleaner power generation systems with 10 to 20 percent lower busbar electricity costs, which will ultimately evolve into a "Vision 21" fleet of new power and energy plants with near-zero levels of pollutants. The second goal is to develop super clean emission control systems for Sulfur Dioxide (SO₂), Nitrogen Oxides (NO_x), air toxics, and particulate matter that can be applied to existing plants. The third goal is to evaluate economically viable approaches to carbon sequestration to address climate change concerns. Power Systems include Central Systems, Distributed Generation Systems, Sequestration Research and Development, and Advanced Research. Fossil Energy activities under this program support the following general performance goal.

Developing Large, High Efficiency, Advanced Power Systems (ER 2-2)

Enhance the economics and environmental performance of electricity generation by expanding the use of multi-product facilities that can also produce heat, clean fuels, and/or chemical prod-

ucts. Pursue evolutionary improvements in existing CO₂ capture systems and explore revolutionary new greenhouse gas capture and sequestration concepts with a view toward significant cost reductions. Develop innovative enabling technologies such as high temperature superconductors to improve efficiency and performance. Develop advanced fossil-based and nuclear-based power generation systems that can meet future

environmental goals at reasonable cost.
(Nearly Met Goal)

FY 2001 Targets and Results:

Target: Deliver to EPA 2 years worth of high-quality PM_{2.5} ambient monitoring data from the upper Ohio River Project.

Result: In June 2001, a set of fully validated PM_{2.5} and PM₁₀ mass data from the sequential filter samplers at two locations (Lawrenceville and Holbrook) were sent in the form of spreadsheets by National Energy Technology Laboratory (NETL) to the Environmental Protection Agency's Office of Air Quality, Planning, and Standards in Research Triangle Park, North Carolina.

Target: Issue request for proposals for the commercial scale demonstration of technologies to assure the reliability of the Nation's energy supply from existing and new electric generating facilities.

Result: The Power Plant Improvement Initiatives solicitation was issued by NETL on February 6, 2001. This initiative involves cost-shared demonstrations of advanced technologies to increase the efficiency, lower the emissions, and improve the economics and overall performance of coal-fired electric power plants. Twenty-four proposals were received and evaluated. Selections were completed within the schedule established by Congress.

Target: Demonstrate hydrogen and CO₂ separation from syngas to meet the long-term goals of providing low-cost hydrogen for high-efficiency fuel cells and for providing concentrated CO₂ streams for sequestration.

Result: Separating CO₂ from hydrogen was demonstrated through the formation of CO₂ hydrates in a continuous flow reactor. The CO₂ hydrate process is being developed jointly under an NETL contract with Bechtel, Simtech, and Los Alamos National Labora-

tory. It has potential for reducing the parasitic energy requirement for CO₂ capture by 50-65 percent and capital costs by 50 percent compared to current technologies, while capturing greater than 75 percent of the CO₂ for sequestration

Target: Begin testing of a 300 kW-1MW solid oxide fuel cell/turbine hybrid commercial prototype for distributed power applications.

Result: Testing of a 220-kW solid oxide fuel cell/turbine hybrid commercial prototype for distributed power applications was initiated at the National Fuel Cell Research Center at the University of California, Irvine. Researchers believed that a 220-kW size was appropriate for providing all technical and economic data needed to assess the commercial feasibility of the hybrid technology. This target, albeit at a reduced scale, is now considered attained.

Target: Begin construction of a 1MW Solid Oxide Fuel Cell (SOFC) hybrid.

Result: This target is no longer applicable as a result of a program decision to redirect effort in this area to focus on further design improvements aimed at low-cost solid oxide fuel cell systems. Cancellation of this milestone to refocus the effort does not impact the higher-level objective or schedule.

Target: For carbon sequestration, expand the number of possible cost-effective, collaborative, multi-national applied R&D options carried to "proof of concept" stage. Complete multiple field experiments on promising technologies.

Result: Three multi-national projects dealing with carbon dioxide capture and storage terrestrial sequestration, and storage of carbon dioxide in oil reservoirs were added to NETL's research and development portfolio for the Carbon Sequestration Program which could potentially reach the "proof of concept" stage. These projects will provide

much needed data for development of full-scale demonstrations, as well as models to adequately address the safety, monitoring, and verification of sequestration approaches. Two field experiments were completed.

Target: Complete design and continue construction of Circulating Atmospheric Fluidized Bed demonstration project at Jacksonville, Florida.

Result: Under the Clean Coal Technology Research and Development Program, the design is complete and construction of a Circulating Atmospheric Fluidized Bed demonstration project at Jacksonville continued. Construction is completed with the installation of the fuel and limestone delivery system (conveyors, transfer points, and dust suppression systems).

Target: Initiate construction of a fixed-bed slagging gasification and fuel cell demonstration project (Kentucky Pioneer Energy Project).

Result: Because of delays in finalizing the Environmental Impact Statement, this project remains in the preliminary design stage. The Kentucky Pioneer project, a coal-based integrated gasification combined-cycle (IGCC) plant, received two of three construction permits, paving the way for design and construction activities and completion of the Environmental Impact Statement.

Plan of action: The draft Environmental Impact Statement (EIS) was approved by the Acting Assistant Secretary of Environment, Safety and Health on October 2, 2001. In the course of conducting compliance activities associated with the National Environmental Policy Act (NEPA), additional analysis not originally identified is needed to meet the NEPA requirements. The additional time required does not significantly impact the overall project schedule. Project schedule stretch out has no impact on the higher-level goal.

FY 2000 Targets and Assessments:

(1) Complete validation testing for critical components of advanced utility-scale turbines with over 60 percent efficiency (combined cycles mode) and ultra-low NO_x emissions. (Nearly Met Goal)

(2) Complete pilot studies on mercury emission controls that augment existing pollution control technologies, and are expected to reduce mercury emissions by over 50 percent at less than half the cost originally estimated in EPA's December 1997 report to Congress on mercury. (Met Goal)

(3) Complete the first large scale (600MW) test of selective non-catalytic reduction, which will allow coal-fired power plants to satisfy ozone transport (OTAG) requirements for reduction of emissions of oxides of nitrogen and also reduce fine particulate matter. (Met Goal)

(4) Begin testing of first market prototype solid oxide fuel cell for distributed power applications. (Met Goal)

(5) In support of Vision 21, complete testing of a 250KW fuel cell/turbine hybrid and deliver a conceptual design of a 1MW fuel cell/turbine hybrid power plant to facilitate market entry. (Nearly Met Goal)

Plan of Action: Tests on a 220KW hybrid unit will begin in December 2000, for a 6-month testing period.

(6) Commence three to four small scale carbon sequestration development projects from those selected in the FY 1998 Novel Concepts solicitation, and begin feasibility studies for one to two sequestration projects selected under FE's August and September 1999 solicitations. (Met Goal)

(7) Complete demonstration of the third integrated gasification combined cycle project (Pinion Pine) utilizing air-blown gasification and hot gas cleanup for improved thermal

efficiency, and continue operations of one other project (Polk) in order to establish the engineering foundation leading to the new generation of 60 percent efficient power plants. (Nearly Met Goal)

Plan of Action: Discussions with new owners of the Pinion Pine IGCC Plant will take place upon completion of the transfer of ownership of the plant.

In FY 2001 the Nevada legislature imposed a moratorium preventing Sierra Pacific, the owner of Pinion Pine, from selling the facility before July 2003. Sierra Pacific has mothballed the plant, and does not intend to complete the demonstration prior to a sale. The agreement with Sierra Pacific is that if and when the plant is sold, and the new owner elects to finish the demonstration, DOE will have access to performance data.

FY 1999 Targets and Assessments:

(1) Complete full-scale component testing of two advanced, utility-scale turbines with over 60 percent efficiency when used in combined cycles (new plants are currently about 55 percent), and with ultra-low NO_x emis-

sions. Initiate advanced gas turbine full speed, no-load testing with one gas turbine manufacturer. (Nearly Met Goal)

(2) Complete testing of the first commercial-sized fuel cell module (100KWe) using high-temperature solid-oxide technology suitable for advanced high-efficiency electrical generation cycles. (Met Goal)

(3) Initiate a coordinated, Department-wide program to develop lower-cost, environmentally-acceptable technology approaches to carbon capture and sequestration. (Met Goal)

(4) Issue draft report which identifies key research needs in several aspects of sequestration, and select six concepts to identify promising sequestration options. (Met Goal)

(5) Complete commercial demonstration of one IGCC project (Wabash), and continue operations of two other gasification projects in order to establish the engineering foundation leading to new generation of 60 percent efficient, ultraclean, coal powerplants. (Met Goal)

GPRA Program Activity: Clean Fuels Research and Development (R&D)

Annual Performance Plan GPRA Program Activity	DOE Office	Financial Statement Footnote	Program Element In Schedule Net Costs	NET COSTS (\$M)		
				FY 01	FY 00	FY 99
Coal and Power Systems/Fuels	FE	20	Coal Research & Development	*	*	*
Clean Fuels R&D	FE	20	Clean Coal Technology	**	**	**

*Coal and Power Systems fuels net costs are shown in the GPRA Activity for High Efficiency, No/Low Emissions Power Systems R&D.

**Clean Fuels R&D net costs are shown in the GPRA Activity for Domestic Oil and Gas Supply RD&D.

Description: Clean Fuels RD&D seeks to develop fuels from a variety of sources that can be used with reduced environmental impact. This activity includes development of new ceramic membranes that would separate coal gas, biomass-derived gas, or natural gas into constituents that could be chemically combined to new types of liquid fuels, and development of premium solid carbon products from coal. FE activities under this program support the following general performance goal that flows from the Department's Strategic Plan.

Assuring Adequate Long Term Supplies Of Clean Liquid Transportation Fuels (ER 1-3)

Develop technologies to produce ultra-clean fuels from natural gas, oil, coal, biomass, and hydrogen from a variety of sources, which can be used with minimal negative environmental consequences. Promote the use of alternative fuel vehicles in selected markets and work with fuel providers and individual communities to help promote the development of refueling infrastructure and provide incentives for the use of alternative

fuel. Promote the use of non-petroleum and renewable replacement fuels, such as ethanol, as blends in gasoline and diesel fuel. (Met Goal)

FY 2001 Targets and Results:

Target: Complete negotiations with industrial teams selected to implement the Early Entrance Co-production Plant (EECP) projects and initiate Phase I of the three-phase activity.

Result: In April 2001, DOE completed negotiations with the third and last of the co-production teams, and the project is underway.

Target: Complete laboratory evaluation of initial set of hydrogen separation membranes.

Result: During FY 2001, the National Energy Technology Laboratory (NETL) and the Office of Science and Technology performed permeability tests and evaluations on 20 different hydrogen separation membranes, encompassing seven membrane types. Particularly promising results were obtained on composite membranes with thin hydrogen-permeable films placed over or within porous or non-porous substrates.

Target: Begin laboratory scale test operations of a novel syngas ceramic membrane reactor to reduce gas-to-liquid fuel conversion costs and initiate construction of first stage scale-up of the reactor.

Result: During FY 2001, NETL initiated laboratory-scale tests. In addition, construction was completed and commissioning began on the 24,000 standard-cubic-foot-per-day scale-up Process Development Unit.

FY 2000 Target and Assessment:

Complete solicitation for, and selection of candidate industrial teams for the Entry Entrance Co-production Plant (EECP) project in which innovative alternative fuels will be co-produced along with electricity and chemical products. (Met Goal)

FY 1999 Targets and Assessments:

No targets were established in FY 1999.

GPRRA Program Activity: Petroleum Reserves

Annual Performance Plan GPRRA Program Activity	DOE Office	Financial Statement Footnote	Program Element In Schedule Net Costs	NET COSTS (\$M)		
				FY 01	FY 00	FY 99
Strategic Petroleum Reserve	FE	20	Strategic Petroleum Reserve	\$42	\$195	\$318
Naval Petroleum and Oil Shale	FE	20	Naval Petroleum	\$12	\$16	\$28

*Net costs include a \$186 million earned revenue in FY 2001 and a \$16 million earned revenue in FY 2000.

Description: Petroleum Reserves includes the Strategic Petroleum Reserve (SPR), the Northeast Home Heating Oil Reserve, and the Naval Petroleum and Oil Shale Reserves (NPOSR). The SPR ensures and maintains the readiness capability to draw down and distribute crude oil from the SPR inventory to commercial distribution systems in order to protect the domestic U.S. economy from the impact of energy supply disruptions. SPR executes U.S. obligations to act cooperatively with member nations of the International Energy Agency (IEA) to deter or respond to supply disruptions which would adversely affect member nations. The NPOSR, following the February 1998 sale to the private sector of Elk Hills, its primary asset, continues to manage, operate, maintain and produce three properties remaining under its jurisdiction. The program is relatively small, and no performance goals are included in the Performance Plan. Also included is the Elk Hills School Lands Fund, which was established to settle certain Elk Hills-related land claims with the State of California.

On July 10, 2000, the President directed the Department of Energy to establish a heating oil component of the SPR in the Northeast to help protect Americans from possible fuel shortages in winter. In the first quarter of FY 2001, the Department completed its establishment of a 2-million barrel reserve. The Energy Act of 2000 (Public Law 106-469) signed on November 9, 2000, authorizes the Secretary of Energy "to establish maintain, and operate a Northeast Home Heating Oil Reserve containing no more than 2 million barrels of petroleum distillate." On March 6, 2001, Secretary Spencer Abraham announced the permanent establishment of the reserve, separate from the Strategic Petroleum Reserve.

FE activities under this program support the following general performance goal that flows from the Department's Strategic Plan.

Maintaining An Effective Strategic Petroleum Reserve (ER 1-1)

Maintain an effective Strategic Petroleum Reserve (SPR) to deter and respond to oil supply disruptions and cooperate with the importing member nations of the International Energy Agency. Ensure achievement of a calculated site availability of 95 percent or greater, with draw down capability of 4.2 million barrels per day for a sustained 90-day period, within 15 days notice by the President. Maintain the Northeast Home Heating Oil Reserve to respond to and mitigate the regional effects of a severe short-term energy supply disruption in the Northeast. Ensure the capability to complete draw down within 12 days notice by the President. (Met Goal)

FY 2001 Targets and Results:

Target: Establish a Northeast Heating Oil Reserve of up to 2 million barrels.

Result: Northeast Heating Oil Reserve was established with storage contracts (one-year term/one-year option) and physical inventory of 2 million barrels of heating oil in place by October 2000. Government sales procedures and distribution plans are in place to ensure completion of a heating oil draw down within 12 days of a Presidential notice.

Target: Complete the transfer of Federal Royalty Oil to SPR by November 2000 per the FY 1999 Agreement with Interior Department.

Result: The SPR continually monitors and addresses its site availability and draw down capabilities. At the end of September 2001, SPR's calculated site availability was at 95 percent with draw down capability of 4.19 million barrels per day for a sustained 90-day period within 15 days notice by the President. Completed the transfer of Federal Royalty Oil by December 2000 per

the FY 1999 Agreement with the Interior Department. In addition, in October and November 2000, 30 million barrels of SPR crude oil were exchanged for 31.15 million barrels to be delivered 1 year later. Through September 30, 2001, 17.8 million barrels were added to the inventory of the SPR. Remaining deliveries from both the Federal Royalty Oil and time-exchange contracts were deferred into Fiscal Years 2002/ and 2003 due to logistics and market considerations, resulting in a greater number of barrels to be delivered to the SPR inventory than originally planned.

FY 2000 Targets and Assessments:

- (1) Complete contracting for the transfer and/or exchange of 28 million barrels of Federal Royalty Oil from the Department of Interior for a net increase of approximately 23 million barrels in SPR inventory, with deliveries of a remaining 4 million barrels in FY 2001. (Met Goal)
- (2) Complete the Life Extension Program to ensure the long-term reliability, effectiveness, and operational readiness of SPR facilities and systems. (Met Goal)
- (3) Ensure the achievement of a calculated site availability of 95 percent or greater with draw-down capability of 4.1 million barrels per day for a sustained 90-day period within 15 days notice by the President. (Met Goal)

FY 1999 Targets and Assessments:

- (1) Initiate additional SPR infrastructure Life Extension Program projects, thereby bringing program implementation to approximately 96 percent of the \$328 million program. Program completion in FY 2000 will increase sustained draw-down capability to 4.1 million barrels per day, compared to 3.7 in FY 1997. (Met Goal)

GPRA Program Activity: Nuclear Energy Educational Infrastructure

Annual Performance Plan GPRA Program Activity	DOE Office	Financial Statement Footnote	Program Element In Schedule Net Costs	NET COSTS (\$M)		
				FY 01	FY 00	FY 99
Nuclear Energy Education Infrastructure	NE	21	University Nuclear Science & Support	\$15	\$15	\$10

Description: To retain the capability in the U.S. to conduct research, address pressing environmental challenges, and preserve the nuclear energy option, DOE must work with U.S. university nuclear engineering programs to maintain the education and training infrastructure necessary to develop the next generation of nuclear scientists and engineers. The University Reactor Fuel Assistance and Support program provides funding for U.S. university nuclear engineering programs and university research reactors, which play a critical role in providing this education and training. While the number of nuclear engineering programs and research reactors in the United States have declined precipitously since the mid-1980s, the Nation's need for nuclear engineers and nuclear-trained personnel is on the rise due to the excellent job market, the lack of large numbers of recent nuclear engineering graduates, and the increasing number of retirements in the nuclear field.

Preserving The Nation's Science And Engineering Educational Infrastructure For Energy Technology (ER 2-8)

Support and promote the Nation's university, college and preparatory technology programs that deliver information and contribute to learning in science and engineering education; enable advanced educational research opportunities; build capabilities at educational institutions; and improve educational opportunities for diverse groups. (Met Goal)

FY 2001 Targets and Results:

Target: Support U.S. universities' nuclear energy research and education capabilities by: providing fresh fuel to all university reactors requiring this service; funding at least 23 universities with research reactors for reactor upgrades and improvements; partnering with private companies to fund 18 or more DOE/Industry Matching Grants Program for universities; and, continuing to support Reactor Sharing, enabling each of the 29 schools eligible for the program to improve the use of their reactors for teaching, training, and education within the surrounding community.

Result: Nuclear Energy's University Programs continued to support the nuclear engineering infrastructure at U.S. universities by providing fresh fuel to all university reactors requiring this service. These programs also: funded 22 universities with research reactors for reactor upgrades and improvements; partnered with 35 private companies to fund 22 DOE/Industry Matching Grants Program for universities; and, continued to support 24 Reactor Sharing grants.

Target: Attract outstanding U.S. students to pursue nuclear engineering degrees by: providing 24 fellowships; increasing the number of Nuclear Engineering Education Research Grants to approximately 50 existing and new grants; and, providing scholarships to approximately 50 sophomore, junior and senior nuclear engineering and science scholarship recipients including the partnering of minority institutions with nuclear engineering schools to allow these students to achieve a degree in their chosen course of study and nuclear engineering.

Result: Nuclear Energy's University Programs provided 24 fellowships, 50 Nuclear Engineering Education Research (NEER) Grants, and 50 scholarships to sophomore, junior and senior nuclear engineering and science scholarship recipients, including the partnering of minority institutions with nuclear engineering schools.

FY 2000 Targets and Assessments:

(1) Support U.S. universities' nuclear energy research and education capabilities by: providing fresh fuel to all university reactors requiring this service; providing funding for reactor upgrades and improvements to at least 23 universities; partnering with 17 or more private companies to fund DOE/Industry Matching Grants Programs for universi-

ties; and, increasing the funding for Reactor Sharing by 20 percent over FY 1998, enabling each of the 29 schools eligible for the program to improve the use of their reactors for teaching, training, and education within the surrounding community. (Exceeded Goal)

(2) Attract outstanding U.S. students to pursue nuclear engineering degrees by: providing 18 to 20 fellowships; increasing the number of Nuclear Engineering Education Grants to 45 existing and new grants; providing scholarships and summer on-the-job training to approximately 50 sophomore, junior, and senior nuclear engineering and science students. (Met Goal)

FY 1999 Targets and Assessments:

(1) Support U.S. universities' nuclear energy research and education capabilities by: providing fresh fuel to all university reactors requesting this service; funding at least 20 universities with research reactors for reactor upgrades and improvements; partnering with 19 or more private companies to fund DOE/Industry Matching Grants Program for universities; increasing the funding for Reactor Sharing by 40 percent over FY 1998, enabling each of the 26 schools involved in the program to improve the use of their reactors for teaching, training, and education within the surrounding community. (Met Goal)

(2) Attract outstanding U.S. students to pursue nuclear engineering degrees by: increasing the number of fellowships from 14 to 22; increasing the number of Nuclear Engineering Education Grants from 19 to over 40; providing summer on-the-job training to 29 junior and senior nuclear engineering scholarship recipients. (Met Goal)

GPRA Program Activity: Nuclear Energy Science Activities

Annual Performance Plan GPRA Program Activity	DOE Office	Financial Statement Footnote	Program Element In Schedule Net Costs	NET COSTS (\$M)		
				FY 01	FY 00	FY 99
Nuclear Energy Science Activities	NE	21	Isotope Production & Distribution Program	\$19	\$25	\$27
	NE	21	Advanced Radioisotope Power System	\$31	\$35	\$45

Description: The Nuclear Energy Science Activities program is focused on applying nuclear expertise to support the use and development of medical isotopes and to support exploration of the planets. The Medical Isotopes Program serves the national need for a reliable supply of isotope products, services, and related technology used in medicine, industry, and research by producing and selling isotopes and supporting medical research and education. Medical, industrial, and research isotopes made at DOE facilities are not produced elsewhere. Through the Advanced Nuclear Medicine Initiative, the program gives medical isotope research and education grants that are not available from any other federal source to national universities. In FY 2001 research and education grants were given to Washington University, St. Louis, Washington State University, The University of Wisconsin, The University of Mexico, and Purdue University. These efforts support the growth of isotope applications.

The Advanced Radioisotope Power Systems program supports the development, demonstration, fabrication, testing, and delivery of power systems required by the United States to support space exploration and special national security activities. Radioisotope Power Systems (RPS) are the enabling technology for space and national security applications that require proven, reliable and maintenance-free power supplies capable of producing up to several kilowatts of power and operating under severe environmental conditions such as space for many years. Over the past 40 years, 26 space missions have used 44 of these Radioisotope Power Systems in a variety of applications, including earth orbit observations, lunar surface exploration, scientific satellites flying close to the outer planets, and probes on the surface of Mars. Space exploration will continue as a national priority and many of the future planned space missions cannot be accomplished without these Radioisotope Power Systems. National security applications using these systems have also been under way for many years and will continue in the future.

Applying DOE Nuclear Expertise To Support Use And Development Of Medical Isotopes (ER 2-6)

Conduct medical isotope-based research to broaden and improve the application, type, and effectiveness of new treatments and diagnoses. Provide a reliable supply of quality isotopes to our customers. (Nearly Met Goal)

FY 2001 Targets and Results:

Target: Supply quality, stable and radioactive isotopes for industrial, research and medical applications that continue to meet customer specifications no less than 97 percent of the time and maintain 95 percent on-time deliveries.

Result: As of September 30, 2001, the Medical Isotope program exceeded 94 percent on-time deliveries out of 589 shipments and met customer specifications at 99 percent; however, the events of September 11th did cause a small number of shipments to be late.

Target: Complete 75 percent of the facility construction and equipment installation for the new 100 MeV Isotope Production Facility which is needed to continue production of short-lived radioisotopes essential for U.S. medical research.

Result: The 100 MeV Isotope Production Facility (IPF) project successfully completed all four performance milestones for FY 2001 resulting in completion of over 75 percent of the facility construction and equipment installation.

Target: Provide five grants under the Advanced Nuclear Medicine Initiative.

Result: The Advanced Nuclear Medicine Initiative (ANMI) program awarded five grants in support of nuclear medicine education activities at the Nation's universities. Two annual performance measures for this general performance goal have been successfully completed and one annual performance measure was nearly completed.

FY 2000 Targets and Assessments:

(1) Supply quality stable and radioactive isotopes for industrial, research, and medical applications that continue to meet customer specifications, and maintain 95 percent on-time deliveries. (Met Goal)

(2) Complete at least 40 percent of the construction of the Los Alamos Isotope Production Facility, which is needed for the production of short-lived isotopes for medical research. (Met Goal)

(3) Invest in two new process development technologies as requested by researchers that enhance isotope production, services and delivery application systems. (Met Goal)

(4) Implement the Advanced Nuclear Medicine Initiative by providing isotopes or financial assistance for at least five researchers. (Exceeded Goal)

FY 1999 Targets and Assessments:

(1) Supply quality stable and radioactive isotopes for industrial, research, and medical applications that continue to meet customer specifications and maintain 95 percent on-time deliveries. (Exceeded Goal)

(2) Initiate construction and commissioning of the Los Alamos Target Irradiation Station, to improve isotope quality with greater operating efficiency. (Met Goal)

(3) Complete equipment installation necessary for an emergency backup supply of molybdenum-99, issue a request for proposals to privatize molybdenum-99 production and business activities by May 1999, and after evaluation, award a contract by September 1999 to the most qualified firm. (Nearly Met Goal)

Applying DOE Nuclear Technology Expertise To Support Exploration Of The Planets (ER 2-7)

Develop nuclear energy conversion, power generation, and propulsion systems for deep-space missions and/or national security applications. Provide compact, safe, nuclear power systems and related technologies. (Below Expectations)

FY 2001 Targets and Results:

Target: Complete installation of the full scale Pu-238 scrap recovery required to provide radioisotope power systems for planned National Aeronautics and Space Administration (NASA) and national security missions. (Revised to reflect delays due to fire and contamination incident at Los Alamos in 2000.)

Result: The program is continuing to maintain the unique program and facility infrastructure that enables the Department to develop and deliver radioisotope power systems to user agencies for space and national security applications. The program completed installation of the full scale Pu-238 scrap recovery required to provide radioisotope power systems for planned NASA and national security missions.

Target: Competitively select system integration contractor to develop a flight-quali-

fied Stirling Radioisotope Power System for future space exploration missions.

Result: The three contractors submitted final revised proposals for the second and third phases of the contract. The revised proposals were evaluated by the Source Evaluation Board (SEB) in August 2001. The program was ready to make an award in FY 2001; however, contract award was delayed into FY 2002 awaiting funding from NASA.

Target: Complete initial assessment of special purpose fission technologies that are focused on concepts and technologies for space applications.

Result: Completed initial assessment of special purpose fission technologies that would address higher power requirements (up to 100 kilowatts) and on refining the power requirements for a new national security application. All performance measures for this general performance goal have been successfully completed.

FY 2000 Targets and Assessments:

(1) Complete bench scale demonstration of the process to recover Pu-238 scrap for reuse in power systems for future missions using radioisotope power systems. (Met Goal)

(2) Execute industrial contract and initiate associated laboratory efforts to develop small Radioisotope Thermoelectric Generators (RTGs) for anticipated use on NASA's Europa Orbiter and Pluto/Kuiper missions planned for launch in 2003 and 2004. (Met Goal)

FY 1999 Targets and Assessments:

No performance targets were established in FY 1999.

GPRA Program Activity: Nuclear Energy R&D

Annual Performance Plan GPRA Program Activity	DOE Office	Financial Statement Footnote	Program Element In Schedule Net Costs	NET COSTS (\$M)		
				FY 01	FY 00	FY 99
Nuclear Energy Research & Development	NE	20	Nuclear Energy Research Initiative	\$25	\$20	\$6
	NE	20	Nuclear Energy Plant Optimization	\$5	\$1	—
	NE	20	Nuclear Energy Technologies	\$7	—	—
	NE	20	Advanced Accelerator Applications	\$30	\$10	—

Description: The mission of the Nuclear Energy Research and Development program is to continue to expand the benefits of nuclear science and technology to our Nation by investing in innovative research, in our Nation’s research and development infrastructure, and in our universities that train the scientists and engineers of the future. Our Nation’s investments in Nuclear Energy research and development are made in response to the benefits that are now routinely expected and in anticipation of those new benefits that are likely to accrue. Twenty percent of our Nation’s electricity is produced today using emission-free nuclear power plants. Government, industry and academia alike face similar challenges in sustaining the critical nuclear science and technology infrastructures — our research facilities and human resources that are required to maintain and expand upon our past success.

Developing Large, High Efficiency, Advanced Power Systems (ER 2-2)

Enhance the economics and environmental performance of electricity generation by expanding the use of multi-product facilities that can also produce heat, clean fuels, and/or chemical products. Develop advanced fossil- and nuclear-based power generation systems that can meet future environmental goals at reasonable cost. (Met Goal)

FY 2001 Targets and Results:

Target: Complete funding for the first 3-year phase of Nuclear Energy Research Initiative (NERI) research and development and select feasible and important reactor and fuel cycle concepts for continued development, and issue approximately 15 new awards.

Result: The NERI program conducts research and development to improve the economics, proliferation resistance, waste man-

agement, and safety of nuclear power plants. Completed funding for the first 3-year phase of NERI research and development projects awarded in previous years and awarded 13 new projects.

Target: Establish bilateral research programs with other countries to improve the cost, and enhance the safety, non-proliferation and waste management of future nuclear energy systems.

Result: The International NERI (I-NERI) program was initiated in FY 2001 with the establishment of two I-NERI bilateral agreements and the selection of collaborative research projects.

Target: Formally establish the Generation IV International Forum to assist in identifying and conducting cooperative research and development. Initiate development of a Generation IV Technology Roadmap for development of next generation nuclear energy systems.

Result: In FY 2001, the Generation IV International Forum (GIF) was officially established with the signing of the GIF charter and the DOE-initiated development of a comprehensive Generation IV Technology Roadmap to identify the most promising next generation advanced reactor concepts and the research and development that will lead to the availability of Generation IV systems by 2030.

Target: Establish a new international agreement on advanced accelerator applications programs between the U.S. and at least one country that significantly leverages financial and technical resources to the mutual benefit of both countries, particularly in areas such as safety, fuels and materials development, and facility operations.

Result: The Advanced Accelerator Applications program established an international agreement in FY 2001 that significantly le-

verages financial and technical resources to the mutual benefit of both countries particularly in areas such as safety, fuels and materials development, and facility operations. All annual performance measures for this general performance goal have been successfully completed.

Target: Establish a new Advanced Accelerator Applications university fellowship program and fund 10 new graduate students in engineering and science.

(FY 2002 Annual Performance Plan shows this target under GPR Program Activity Nuclear Energy R&D.)

Result: The Advanced Accelerator Applications (AAA) program successfully established a university fellowship program and funded 10 students. All annual performance measures for this general performance goal have been successfully completed.

FY 2000 Targets and Assessments:

(1) Continue NERI research to improve the understanding of new reactor and fuel cycle concepts and nuclear waste management technologies, and begin to develop a preliminary feasibility assessment of the concepts and technologies. (Met Goal)

(2) Advance the state of scientific knowledge and technology to enable incorporation of improved proliferation resistance, safety, and economics in the potential future design and development of advanced reactor and nuclear fuel systems. (Met Goal)

FY 1999 Targets and Assessments:

Establish a peer-reviewed Nuclear Energy Research Initiative, initially funded at \$19 million, to select and conduct investigator-initiated, innovative scientific and engineering research that will address the is-

sues facing the future of nuclear power in the U.S., including proliferation concerns, economics, and the management of nuclear waste. (Met Goal)

Supporting Research To Improve Existing Power Plants (ER 2-4)

Develop technology to improve the performance of older fossil and nuclear power plants, permitting continued operation in an increasingly competitive and environmentally-constrained industry. As part of this goal, NE will continue ongoing research and development, and initiate new research and development associated with managing the long-term effects of plant-aging and improving the reliability and productivity of existing nuclear power plants. (Met Goal)

FY 2001 Targets and Results:

The Nuclear Energy Plant Optimization (NEPO) Program — a government-industry, cost-shared research program initiated in FY 2000 — conducts research and development directed at managing the long-term effects of aging and improving the reliability, availability and productivity of existing U.S. commercial nuclear power plants. Ten of the projects initiated in FY 2000 were continued in FY 2001 (eight in aging management and two in generation optimization). Nine new projects were initiated in FY 2001 (two in aging management and seven in generation optimization). The projects were awarded to national laboratories, private sector companies, and a minority university. The Cooperative Agreement with Electric Power Research Institute (EPRI), established in FY 2000 to enable research and development awards to private industry, was extended to cover the FY 2001 work scope.

FY 2000 Targets and Assessments:

(1) Issue the first update to the DOE and EPRI Joint Strategic Research and Development Plan to Optimize U.S. Nuclear Power Plants. (Met Goal)

(2) Implement a cooperative cost-shared research and development program by working with industry, universities, national laboratories, and the Nuclear Regulatory Commission, to address technical issues that could impact continued operation of current nuclear power plants. (Met Goal)

FY 1999 Targets and Assessments:

Complete Memorandums of Understanding with the Nuclear Regulatory Commission and the EPRI to guide future implementation of the Joint DOE-EPRI Strategic Research and Development Plan to optimize U.S. Nuclear Power Plants. (Met Goal)

Preserving The Nation's Science And Engineering Educational Infrastructure For Energy Technology (ER 2-8)

Support and promote the Nation's university, college and preparatory technology programs that deliver information and contribute to learning in science and engineering education; enable advanced educational research opportunities; build capabilities at educational institutions; and improve educational opportunities for diverse groups. (Met Goal)

FY 2001 Targets and Results:

Target: Establish a new Advanced Accelerator Applications (AAA) university fellowship program and fund 10 new graduate students in engineering and science.

Result: The AAA program successfully established a university fellowship program and funded 10 students. All annual performance measures for this general performance goal have been successfully completed.

FY 2000 Targets and Assessments:

Establish a science and engineering based research program into ATW technology development. Commence systems studies to establish and evaluate technology options and narrow choices. Issue a Program Plan for the conduct and management of the ATW research program {Added Measure} (Met Goal)

FY 1999 Targets and Assessments:

No performance targets were established in FY 1999.

GPRRA Program Activity: Nuclear Energy Facilities and Infrastructure

Annual Performance Plan GPRRA Program Activity	DOE Office	Financial Statement Footnote	Program Element In Schedule Net Costs	NET COSTS (\$M)		
				FY 01	FY 00	FY 99
Nuclear Energy Facilities & Infrastructure	NE	22	Fast Flux Test Facility	\$41	\$42	\$36
	NE	22	Nuclear Facilities Management	\$45	\$59	\$60
	NE	22	ANL-W Operations	\$45	\$50	\$50

Description: Nuclear Energy Facilities and Infrastructure activities are focused on management of the Department’s vital resources and capabilities at NE-managed sites to assure that the Department can meet its vital mission requirements; and that NE sites are maintained in a safe, secure, environmentally-compliant and cost-effective manner to ensure the protection of the workers, the public and the environment. Activities also include: carrying out the long-term treatment and management of DOE’s sodium-bonded spent nuclear fuel; further developing electrometallurgical treatment technology; placing unneeded facilities in industrially-safe, stable and environmentally-compliant conditions for low-cost; conducting long-term surveillance and maintenance; and managing and disposing of DOE material legacies associated with the Department’s nuclear energy activities. NE activities under this program support the following general performance goal that flows from the Department’s Strategic Plan.

Managing Legacies Associated With Civilian Nuclear Power Development Activities (EQ3-2)

Maintain in a safe and stable configuration nuclear energy research facilities that are presently in either shutdown or standby condition. Continue to develop technologies for electrometallurgical treatment that could resolve problems with DOE’s spent nuclear fuel. As part of this goal, NE will maintain the Fast Flux Test

Facility (FFTF) in a safe, environmentally-compliant condition while conducting shutdown activities. (Exceeded Goal)

FY 2001 Targets and Results:

Target: Complete the conversion and disposition of 100 percent of the Fermi reactor sodium coolant in storage at Argonne National Laboratory-West.

Result: All nuclear energy research facilities that are presently in either a shutdown

or standby condition continue to be maintained in a safe and stable configuration. For FY 2001, the primary focus of this activity is on the Experimental Breeder Reactor-II (EBR II) which is being deactivated and FFTF which is under review and may be either deactivated or reactivated.

Target: Complete draining the Experimental Breeder Reactor II (EBR-II) primary system and process 100 percent of all EBR-II sodium in compliance with the INEEL Site Treatment Plan.

Result: Significant progress is being made on the EBR-II shutdown activity and the electrometallurgical treatment of EBR-II fuel. Two major EBR-II Shutdown milestones for FY 2001 have been successfully completed ahead of schedule, and the deactivation of EBR-II is on-track to be completed by March 2002.

Target: Treat a minimum of 0.5 metric tons of heavy metals (MTHM) of EBR-II spent nuclear fuel.

Result: The FY 2001 performance measure for electrometallurgical treatment of EBR-II spent nuclear fuel was exceeded and good progress was made on electrometallurgical treatment development activities.

Target: Complete the National Environmental Policy Act review of the environmental impacts of enhancing the Department's nuclear research facility infrastructure and issue a Record of Decision.

Result: FFTF deactivation activities had commenced after issuance of a Nuclear Infrastructure Record of Decision on January 26, 2001, directing permanent shutdown of that facility. On April 25, 2001, FFTF deactivation activities were suspended to conduct a Secretarial review to determine whether that Record of Decision should stand or be considered for revision. As a result of this exhaustive review, a final Secretarial

decision was made on December 19, 2001, to permanently deactivate the FFTF.

FY 2000 Targets and Assessments:

(1) Complete the conversion and disposition of 100 percent of the secondary sodium coolant from the Experimental Breeder Reactor-II, and 40 percent of the Fermi reactor sodium coolant in storage at Argonne National Laboratory-West. (Met Goal)

(2) Initiate the draining of sodium from the EBR-II primary system and processing it for disposal. (Met Goal)

(3) Depending upon the conclusion of the National Environmental Policy Act analysis currently underway, complete the Fuel Conditioning maintenance items and resume sodium-bonded fuel treatment activities. (Met Goal)

(4) Maintain the FFTF in a safe environmentally-compliant standby condition while implementing a Secretarial decision to conduct a National Environmental Policy Act review of the environmental impacts of enhancing the Department's nuclear research facility infrastructure. (Met Goal)

FY 1999 Targets and Assessments:

(1) Complete the demonstration of the electrometallurgical spent fuel treatment technology by the end of FY 1999 using Experimental Breeder Reactor-II spent nuclear fuel. (Met Goal)

(2) Complete the conversion and disposition of 100 percent of the secondary sodium coolant from the Experimental Breeder Reactor-II, and 40 percent of the Fermi reactor sodium coolant in storage at Argonne National Laboratory-West. (Nearly Met Goal)

(3) Maintain the FFTF in a safe, environmentally-compliant standby condition to permit implementation of an anticipated Secretarial

decision in FY 1999 to deactivate or pursue potential restart to support a range of national research requirements. (Met Goal)

GPRA Program Activity: Energy Information Administration

Annual Performance Plan GPRA Program Activity	DOE Office	Financial Statement Footnote	Program Element In Schedule Net Costs	NET COSTS (\$M)		
				FY 01	FY 00	FY 99
Energy Information Administration	EI	20	Energy Information Administration	\$78	\$74	\$72

Description: As an independent statistical/analytical agency, the Energy Information Agency (EIA) has two principal roles. First, its primary responsibility is to conduct the functions required by statute. This responsibility consists of the development and maintenance of a comprehensive energy data-base and the publication of reports and analyses for a wide variety of customers in the public and private sectors. There are also specific reports which are required by law. Second, EIA responds to inquiries for energy information. The primary customers of EIA services are public policymakers in the Department of Energy and the Congress. Other customers include other agencies within the Executive branch and the independent agencies of the Federal government, state and local governments, the energy industry, educational institutions, the news media, and the public. EIA activities under this program support the following general performance goal that flows from the Department's Strategic Plan.

Expanding Public Access To Energy Information (ER 4-2)

Provide forecasts for energy supply and consumption through the year 2020. Make information more easily accessible to the general public by designing and issuing on-line products for electronic dissemination. Undertake information and education programs to familiarize the general public with DOE energy technologies and their applications, availability, and benefits (i.e., environment, health, economics, and reliability). (Exceeded Goal)

FY 2001 Targets and Results:

Target: Publish domestic and international Annual Energy Outlooks, forecasting energy supply and consumption through the year 2020.

Result: Annual Energy Outlook 2001 published in December 2000. International Energy Outlook 2001 published in March 2001.

Target: Achieve a growth rate of at least 20 percent per year in the average number of unique monthly users of the Energy Re-

sources Board Web Site (from about 71,000 per month in 1997).

Result: The EIA achieved a growth rate in excess of 45 percent in the number of unique monthly users of EIA's web site (780,000 unique monthly users in September 2001).

FY 2000 Targets and Assessments:

- (1) Publish domestic and international Annual Energy Outlooks forecasting energy supply and consumption through the year 2020. (Met Goal)
- (2) Achieve a growth rate of at least 20 percent per year through 2002 in the aver-

age number of unique monthly users of the Energy Resources Board Web Site (from about 71,000 per month in 1997). (Exceeded Goal)

FY 1999 Targets and Assessments:

- (1) Publish domestic and international Annual Energy Outlooks forecasting energy supply and consumption through the year 2020. (Met Goal)
 - (2) Achieve a growth rate of at least 20 percent per year in the average number of unique monthly users of the Energy Resources Board Web Site (from about 71,000 per month in 1997). (Exceeded Goal)
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GPRRA Program Activity: Power Marketing Administrations

Annual Performance Plan GPRRA Program Activity	DOE Office	Financial Statement Footnote	Program Element In Schedule Net Costs	NET COSTS (\$M)		
				FY 01	FY 00	FY 99
Power Marketing Administrations	PMA	20	Power Marketing Administrations	\$278	(\$265)	(\$150)

*Net costs include a \$4,681 million of earned revenue in FY 2001, a \$3,783 million of earned revenue for FY 2000 and a \$3,226 million of earned revenue for FY 1999.

Description: The Power Marketing Administrations' (PMAs') mission fulfills the requirements of the Bonneville Project Act of 1937, Section 9 of the Reclamation Project Act of 1939, Section 5 of the Flood Control Act of 1944, the Federal Columbia River Transmission Act of 1974, the Regional Power Act of 1980, and various other acts by marketing and reliably delivering cost-based Federal hydroelectric power, with preference given to publicly-owned electric utilities and cooperatives. This is accomplished by charging rates for Federal power that are as low as possible to consumers while recovering all operating costs and repaying the Federal investment in power facilities in a timely manner.

The PMAs' programs help achieve the Department's Energy Resources goal through the strategic objectives of providing reliable, affordable and clean supplies of electricity to customers in the West, Mid-West, and Southeastern United States, and by increasing the efficiency and productivity of energy use while limiting environmental impacts.

Reliably Delivering Federal Hydroelectric Power (ER 2-5)

Through the power marketing administrations, market and reliably deliver Federal hydroelectric power with preference given to publicly-owned electric utilities and cooperatives. (Nearly Met Goal)

FY 2001 Targets and Results:

Target: Receive monthly a control compliance rating of "pass" using the North American

Electric Reliability Council performance standard.

Result: All four PMAs — Bonneville Power Administration (BPA), Southeastern Power Administration (SEPA), Southwestern Power Administration (SWPA), and Western Area Power Administration (WAPA) — met their targets.

Target: Meet planned repayment of principal on power investment.

Result: BPA met the target; SEPA was below expectations; SWPA nearly met the target; and WAPA was below expectation.

Plan of Action: Southeastern Power Administration was below expectation on the repayment target because of severe drought for the last three years with less power generation from hydroelectric projects. Southeastern's Corrective Action: Review repayment studies and change rates, as necessary, according to Federal regulation to bring repayment up to established goals and schedules.

Southwestern Power Administration nearly met repayment target because rainfall was below normal. Southwestern's Corrective action: Conduct power repayment study to see if rates need to be adjusted.

Western Area Power Administration – Repayment targets were below expectations due to below normal rainfall over several watersheds in the marketing area. WAPA will conduct power repayment studies for each project and initiate rate adjustments where needed to ensure all investments are repaid within their allowable repayment periods.

Target: Achieve a safety performance of a 3.3 recordable accident frequency rate for recordable injuries per 200,000 hours worked or the Bureau of Labor Statistics' industry rate, whichever is lower.

Result: All four PMAs met their targets.

FY 2000 Targets and Assessments:

- (1) Ensure that each power system control area operated by a Power Marketing Administration receives, for each month of the fiscal year, a Control Compliance Rating of "Pass" using the North American Electric Reliability Council performance standard. (Met Goal)
- (2) Meet planned repayment of principal on power investment. (Nearly Met Goal)
- (3) Achieve a safety performance of 3.3 or fewer recordable accident rate for recordable injuries per 200,000 hours worked or the Bureau of Labor Statistics' industry rate, whichever is lower. (Met Goal)

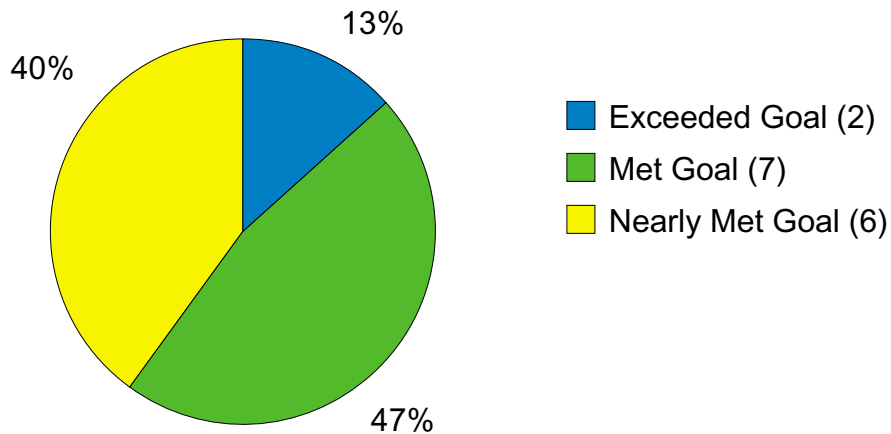
FY 1999 Targets and Assessment:

Ensure that each power system control area operated by a Power Marketing Administration (PMA) receives, for each month of the fiscal year, a Control Compliance Rating of "Pass" using the North American Electric Reliability Council performance standard. (Met Goal)

National Nuclear Security

GOAL: Enhance the national security through the military application of nuclear technology, and reduce global danger from weapons of mass destruction.

The following pages contain detailed information on the results achieved for revised final National Nuclear Security programs' performance goals and targets for FY 2001 as presented in the FY 2002 Annual Performance Plan. There were 15 General Performance Goals in FY 2001 for National Nuclear Security programs. The overall results are:



GPRA Program Activity: Defense Programs

Annual Performance Plan GPRA Program Activity	DOE Office	Financial Statement Footnote	Program Element In Schedule Net Costs	NET COSTS (\$M)		
				FY 01	FY 00	FY 99
Defense Programs	DP	19	Directed Stockpile Work	\$1,007	\$743	\$3,626*
	DP	19	Campaigns	\$1,621	\$1,715	
	DP	19	Readiness in Technical Base & Facilities	\$1,460	\$1,433	

*Total for all accounts is shown for FY 1999, because the accounting structure changed in FY 2000.

Description: The DOE Stockpile Stewardship Program maintains confidence in the safety, reliability and performance of the nuclear weapons in the Nation's stockpile without underground nuclear testing. The program develops and maintains the world class scientific, engineering, manufacturing, and experimental capabilities needed to achieve weapons stockpile certification for the long term. It ensures the vitality of the DOE national security enterprise, including the physical and intellectual infrastructure for the three defense national laboratories — Los Alamos National Laboratory (LANL), Lawrence Livermore National Laboratory (LLNL), and Sandia National Laboratory (SNL); the Nevada Test Site; the Kansas City, Pantex and Y-12 production plants and Savannah River Tritium facilities.

Achieving confidence in our ability to certify without underground nuclear testing that the nuclear weapons stockpile remains safe and reliable for the long term requires capable and experienced people working on significant scientific and engineering challenges to develop and advance specialized knowledge, tools and techniques. Success requires appropriate integration and balance of these three elements in meeting current and future mission needs, carrying out the directed stockpile workload as well as maintaining the program's infrastructure and developing capabilities needed in the future.

In January 2001, President Bush asked the Secretary of Defense to conduct several reviews to create a new vision for the role of the Nation's military in the 21st Century. The National Nuclear Security Administration (NNSA) participated in and completed the Nuclear Posture Review. This review examined the requirements of deterrence including the size of the future nuclear stockpile and the Nation's missile defense needs. Defense Programs will consider the results of the Nuclear Posture Review in preparing an Infrastructure Plan for the Nuclear Weapons Complex. This plan was called for by the National Defense Authorization Act for FY 2002, and must be completed not later than the date on which the DOE budget request for FY 2004 is submitted to Congress. The plan is to consider the benefits of consolidating nuclear weapon facilities and the necessity of having residual production capabilities in the complex.

Maintaining Stockpile

Confidence (NS 1-1)

Conduct a program of Directed Stockpile Work which supports stockpile refurbishment activities; completes surveillance, maintenance, design, and manufacturing activities necessary for the refurbishment and certification of the stockpile; and applies improved technologies and tools developed by the campaigns to achieve Directed Stockpile Work performance measures. (Met Goal)

FY 2001 Targets and Results:

Target: Report annually to the President on the need or lack of need to resume underground testing to certify the safety and reliability of the nuclear weapon stockpile.

Target: Meet all annual weapons maintenance and refurbishment schedules developed jointly by the DOE and the Department of Defense (DoD).

Target: Meet annual schedules for the safe and secure dismantlement of nuclear warheads that have been removed from the U.S. nuclear weapon stockpile.

Consolidated Results: The NNSA completed, ahead of schedule, its portion of the sixth annual certification to the President on the need to return to underground testing; met all weapons maintenance and refurbishment schedules for the year; and exceeded our FY 2001 dismantlement goals. However, we ended the year with a backlog of surveillance tests even though we met our goal for fiscal year 2001 for both current surveillance testing and for reducing a portion of the test backlog. We plan to eliminate the remaining backlog by the end of FY 2003 except for a few gas transfer system tests, which will be eliminated in FY 2004.

FY 2000 Targets and Assessments:

(1) Report annually to the President on the need or lack of need to resume underground testing to certify the safety and reliability of the nuclear weapons stockpile. (Met Goal)

(2) Meet all annual weapons alteration and modification schedules developed jointly by DOE and DoD. (Below Expectations)

Plan of Action: Revised schedules have been negotiated with the DoD that will meet their operational needs.

(3) Adhere to schedules for the safe and secure dismantlement of nuclear warheads that have been removed from the U.S. nuclear weapons stockpile. (Met Goal)

FY 1999 Targets and Assessments:

(1) Report annually to the President on the need or lack of need to resume underground testing to certify the safety and reliability of the nuclear weapons stockpile. (Met Goal)

(2) Meet all annual weapons alteration and modification schedules developed jointly by DOE and DoD. (Nearly Met Goal)

(3) Adhere to schedules for the safe and secure dismantlement of approximately 275 nuclear warheads that have been removed from the U.S. nuclear weapons stockpile. (Below Expectations)

Conducting Campaigns (NS 2-1)

Conduct a series of science and computing campaigns pertaining to: certifications of primaries, secondaries and weapons engineering; materials properties; advanced radiography; weapon performance in hostile environments; inertial

confinement fusion and ignition; and simulation and computing. This includes developing simulation and modeling tools and capabilities to implement virtual testing of nuclear weapons and components in the absence of underground nuclear testing. Conduct a series of applied science and engineering campaigns pertaining to: advanced design and production technologies; enhanced surveillance; and enhanced surety. Also conduct readiness campaigns pertaining to: pit and secondary manufacturing; high explosives manufacturing and weapons assembly/disassembly; non-nuclear components; and tritium production. (Met Goal)

FY 2001 Targets and Results:

Target: Meet the FY 2001 Accelerated Strategic Computing Initiative (ASCI) Program Plan milestones for development of modeling and simulation tools and capabilities required for design and certification of the nuclear weapons stockpile.

Target: Implement the Secretary's Six Point Plan to improve project management of the National Ignition Facility (NIF) project and approve a new baseline. (Federal Managers Financial Integrity Act (FMFIA) project management)

Target: Meet FY 2001 milestones in the science campaigns to achieve scientific understanding of the nuclear package of weapon systems to sustain our ability to annually certify the nuclear weapon stockpile without underground nuclear testing.

Consolidated Results: The NNSA completed a new baseline for the National Ignition Facility early in the fiscal year, met all five scheduled ASCI milestones, and made a number of critical achievements in the balance of our NNSA science campaigns.

FY 2000 Targets and Assessments:

(1) Demonstrate a computer code capable of performing a three-dimensional analysis of the dynamic behavior of a nuclear weapon primary, including a prediction of the total explosive yield, using an ASCI computer system. (Exceeded Goal)

(2) Continue construction of the National Ignition Facility, and re-baseline future construction, total costs, and schedules by June 2000. (FMFIA milestone) (Met Goal)

(3) Begin execution of the Defense-related project management campaign implementation plan. (FMFIA milestone) (Met Goal)

(4) Conduct further subsets of the subcritical experiment begun in FY 1999 (Oboe) and one additional subcritical experiment at the Nevada Test Site to provide data on the behavior of nuclear materials during the implosion phase of a nuclear weapon. (Met Goal)

FY 1999 Targets and Assessments

(1) Demonstrate 3-trillion operations per second computer system. (Exceeded Goal)

(2) Continue construction of the National Ignition Facility (NIF) according to its Project Execution Plan schedules. (Below Expectations)

(3) Conduct two or three subcritical experiments at the Nevada Test site to provide valuable scientific information about the behavior of nuclear materials during the implosion phase of a nuclear weapon. (Met Goal)

Ensuring Enterprise Vitality And Readiness (NS 3-1)

Provide an appropriately-sized, cost effective, safe, secure, and environmentally-sound enterprise for national nuclear security programs; maintain nuclear test readiness in accordance with Presidential direction; implement recommendations of the Commission on Maintaining U.S. Nuclear Weapons Expertise; continue restructuring, modernizing, and implementing integrated safety and security management throughout the national nuclear security enterprise; and continue construction of new facilities such as the Tritium Extractions Facility, computing facilities, and the National Ignition Facility (NIF). Maintain the DOE Secure Transportation Asset for safe, secure transport of nuclear weapons, special nuclear materials, and weapon components. Ensure that the capability to resume underground nuclear testing is maintained in accordance with Presidential directive through a combined experimental and test readiness program. Ensure the availability of a workforce with the critical skills necessary to meet long-term requirements. Maintain robust emergency response assets in accordance with Presidential directive and Executive Order 12656 and Federal emergency plans. (Met Goal)

FY 2001 Targets and Results:

Target: Ensure the physical infrastructure and facilities are operational, safe, secure, and compliant and that a defined state of readiness is sustained at all needed facilities.

Target: Complete the milestones listed in the corrective action plan for the Departmental challenge of managing physical assets. (FMFIA)

Consolidated Results: A variety of measures were completed this year to ensure that the nuclear complex remained safe, secure, and operational. The milestones in the corrective action plan to ensure NNSA's facili-

ties and infrastructure needs are met in the future were also completed.

FY 2000 Targets and Assessments:

(1) Ensure that all facilities required for successful achievement of the Stockpile Stewardship Program remain operational. (Below Expectations)

Plan of Action: Los Alamos National Laboratory is proceeding with projects needed to maintain safe and reliable operations, and to recapture a pit manufacturing capability. The Chemical and Metallurgy Research (CMR) Upgrades project will allow continued safe operations in the facility until 2010. The project's last year of funding is FY 2001, with an expected completion in FY 2002. Seven subprojects have been completed since re-baselining the project in September 1999. All have been completed on or ahead of schedule and under budget. The Cerro Grande Fire and other work stoppages have delayed some of the remaining subprojects, but should not have a significant impact on the overall project completion. It will be necessary to replace the capabilities provided by the CMR facility within the next 10 years; however, pre-conceptual planning for a CMR replacement capability was placed on hold in February 2000, awaiting additional funding. The need to replace CMR combined with the requirement for capital investment to upgrade the aging TA-55 plutonium facility as well as relocate the TA-18 critical experiments facility drive the need for long-term strategic planning. [The CMR Upgrades project continued exceptional performance and will be completed in FY 2002 ahead of schedule and under budget. DOE and LANL completed the Integrated Nuclear Planning activities in FY 2001 to support the initiation of the CMR Replacement and the TA-18 Relocation projects.]

(2) Meet the established schedules for downsizing and modernizing our production facilities. (Nearly Met Goal)

Plan of Action: Delays in FY 2000 will be reflected in schedules for out years.

(3) Ensure that the capability to resume underground testing is maintained in accordance with the Presidential Decision Directive through a combined experimental and test readiness program. (Met Goal)

FY 1999 Targets and Assessments:

(1) Ensure that all facilities required for successful achievement of the Stockpile Stewardship Plan remain operational. (Below Expectation)

(2) Meet the established schedules for downsizing and modernizing of our production facilities. (Nearly Met Goal)

(3) Maintain robust emergency response assets in accordance with Presidential Decision Directive 39, The Atomic Energy Act, Executive Order 12656, and Federal Emergency Plans. (Exceeded Goal)

(4) Ensure that the capability to resume underground testing is maintained in accordance with the Presidential Decision Directive and Safeguard C of the Comprehensive Test Ban Treaty (CTBT). (Met Goal)

GPRRA Program Activity: Nonproliferation and Verification R&D

Annual Performance Plan GPRRA Program Activity	DOE Office	Financial Statement Footnote	Program Element In Schedule Net Costs	NET COSTS (\$M)		
				FY 01	FY 00	FY 99
Nonproliferation & Verification R&D	NN	19	Nonproliferation & Verification R&D	\$232	\$225	\$239

Description: The Department of Energy Nonproliferation and Verification Research and Development Program is devoted to conducting applied research, development, testing, and evaluation of science and technology for strengthening the U.S. response to National Security threats and threats to world peace posed by the proliferation of nuclear, chemical, and biological weapons and special nuclear material diversion. Activities are focused on the development, design, prototype construction and production of operational sensor systems needed for proliferation detection, deterrence, nuclear test monitoring, and chemical and biological nonproliferation. Nuclear Security activities under this program support the following general performance goal that flows from the Department’s Strategic Plan.

Conducting Nonproliferation And Verification R&D (NS 4-1)

Develop and demonstrate technologies needed to remotely detect the early stages of a proliferate nation’s nuclear weapons program; improve capabilities to locate, identify, and characterize nuclear explosions; produce operational satellite-based nuclear explosion monitoring sensor systems; and improve the United States’ capability to detect the proliferation of chemical and biological agents at an early stage, and to minimize the consequences if chemical or biological agents are used. (Nearly Met Goal)

FY 2001 Targets and Results:

Target: Test and evaluate a real-time field analytical sampling system; complete a joint plan on technology development for domestic defense.

Result: The design has been finalized, testing completed, and the project has moved to the technology transfer stage with the laboratory performer (PNNL) awaiting approval from the external customer to transfer the prototype to the selected industrial producer. Routine programmatic discussions and joint proposal review efforts have cemented our technology development support process with our DOE/NNSA partners.

Target: Demonstrate and evaluate the proliferation detection capabilities of the Multispectral Thermal Imager (MTI) small satellite launched in FY 2000.

Result: The MTI program has succeeded in addressing its original program goals (i.e. MTI data was taken over New York City September 12 and 13, 2001, and forwarded to federal and local emergency response personnel at the World Trade Center scene, following the September 11, 2001, terrorist attacks). Formal reporting of these results will occur at future technical conferences. Continued benefit from extended operation of the satellite system is expected into FY 2002 (and perhaps beyond FY 2002 depending on MTI's health and the eventual availability of better satellites).

Target: Begin physical construction of the Nonproliferation and International Security Center (NISC) at LANL.

Result: Construction of the NISC at LANL is ahead of schedule.

Target: Conduct Critical Design Reviews for three new-generation nuclear explosion-monitoring sensors that are proposed for future satellite deployment.

Result: Two new-generation nuclear explosion monitoring sensor critical design reviews were held in June 2001. The review for the new generation electromagnetic pulse sensor, originally planned for September 2001, has been postponed until March 2002 due to the late receipt of funds by LANL from the other government agency partner.

Plan Of Action: The review for the new generation electromagnetic pulse sensor, originally planned for September 2001, has been rescheduled for March 2002.

Target: Demonstrate systems to protect key infrastructure and special events from chemical and biological attacks

Result: The biological agent detectors for the Biological Aerosol Sentry and Information System (BASIS) were subjected to tests with live biological agents at the Dugway Proving Grounds in August, and the agents were successfully characterized using the transferable field laboratory procedures. The prototype system is to be deployed at the Salt Lake City Olympics. Preparations were completed for the demonstration of the Program for Response Options and Technology Enhancements for Chem/Bio Terrorism (PROTECT) for response to a chemical release in a subway system, including testing in the subway with a simulated chemical agent in August. The prototype system demonstration was planned for September, but was rescheduled to December 2001 by the Washington Area Metropolitan Transportation Authority due to the events of September 11, 2001.

FY 2000 Targets and Assessments:

(1) Develop improved technologies and systems for early detection, identification, and response to weapons of mass destruction proliferation and illicit materials trafficking. (Met Goal)

(2) Launch the Multispectral Thermal Imager (MTI) small satellite to demonstrate temperature measurement from space for the passive detection and characterization of proliferation activities. (Met Goal)

(3) Deliver three improved sensor systems for treaty nuclear explosion monitoring to the U.S. Air Force. (Met Goal)

(4) Deliver to the U.S. National Data Center 60 percent (Release 4) of an operational knowledge base that can be accessed by automated processing systems and human analysts to provide monitoring and verification confidence. (Met Goal)

(5) Test a first-generation prototype handheld detector for enhanced detection of chemical agents. (Met Goal)

(6) Complete architecture development to protect a "special event" from biological attacks. (Met Goal)

FY 1999 Targets and Assessments:

(1) Complete development and delivery to customers of two new counter-nuclear-smuggling detection technologies, one portable/hand-held and the other for wide-area tracking and interdiction. (Met Goal)

(2) Demonstrate, through airborne field tests, two new technologies that use chemical detection methods to remotely characterize weapons-of-mass-destruction proliferation activities. (Met Goal)

(3) Deliver to the U.S. National Data Center for the CTBT the first half (Release 3) of an operational knowledge base, that can be accessed by automated processing systems and human analysts to provide monitoring and verification confidence. (Met Goal)

GPRRA Program Activity: International Nuclear Safety & Cooperation

Annual Performance Plan GPRRA Program Activity	DOE Office	Financial Statement Footnote	Program Element In Schedule Net Costs	NET COSTS (\$M)		
				FY 01	FY 00	FY 99
International Nuclear Safety & Cooperation	NN	19	International Nuclear Safety	\$93	\$111	\$94

Description: The mission of the International Nuclear Safety and Cooperation program is to promote nuclear nonproliferation and national security by providing for international nuclear safety. The goal is to reduce the national security and nonproliferation risks associated with foreign nuclear power plants and nuclear facilities, especially those in the former Soviet Union. The program improves the safety of Soviet-designed nuclear power plants and facilitates shutting down the most hazardous of these facilities; and assists host countries in developing and implementing self-sustaining nuclear safety infrastructure and improvement programs capable of implementing internationally accepted safety practices. Project activities address significant nuclear safety issues primarily in Ukraine, Russia, Armenia, and Kazakhstan, and encourage cooperation among these and other participating countries. Nuclear Security activities under this program support the following general performance goal that flows from the Department’s Strategic Plan.

Improving International Nuclear Safety (NS 4-2)

Assist countries in reducing the risks from Soviet-designed nuclear power plants and implement self-sustaining nuclear safety improvement programs capable of reaching internationally accepted safety practices; implement projects in the areas of operational safety, training and simulators, safety assessments, and fire safety, and other hardware upgrades; promote nuclear safety culture improvements internationally by providing strong leadership in international nuclear safety organizations and centers; and work with other G-7 countries to assist in the safe decommissioning of the Chernobyl plant, and to stabilize the unit 4 shelter at Chernobyl. (Met Goal)

FY 2001 Targets and Results:

Target: Complete full-scope simulator for Ukraine’s Rivne nuclear plant unit 3 and South Ukraine nuclear plant unit 1.

Result: Full scope simulators are completed.

Target: Complete safety parameter display systems for Ukraine’s South Ukraine nuclear plant unit 3, and Zaporizhzhya nuclear plant units 2 and 4.

Result: Safety Parameter Display Systems are completed.

Target: Complete probabilistic risk assessment at Ukraine’s South Ukraine unit 1 and

Rivne unit 1 nuclear plants, and at Russia's Novovoronezh unit 3, and Leningrad unit 2 nuclear plants.

Result: Probabilistic Risk Assessments are essentially completed (i.e., one completion slipped to the end the calendar year.)

Plan of Action: The final outstanding probabilistic risk assessment for Rivne unit 1 was completed as of January 2002. The other probabilistic risk assessments were completed as of January 2002. Probabilistic risk assessments were completed for South Ukraine unit 1 in October 1999, Novovoronezh unit 3 in September 2001, and Leningrad unit 2 in June 2001. All outstanding actions for this target are completed.

Target: Complete implementation of symptom-based emergency operating instructions at the Ignalina plant in Lithuania.

Result: Emergency Operating Instructions are completed.

Target: Complete fire protection system upgrades at the Kazakhstan BN-350 nuclear plant.

Result: Fire Protection Systems upgrades are completed.

Target: Complete projects at the International Chernobyl Center to characterize the condition of spent nuclear fuel at Ukrainian power plants and to evaluate safe options for spent fuel management. Complete plans and safety analyses for the shutdown and deactivation of Chernobyl units 1, 2 and 3.

Result: Characterization of spent fuel and safety options are completed. Plans for shutdown and deactivation are complete. Safety analyses are complete for unit 1, slightly behind schedule but expected to be completed by the end of the calendar year for unit 2, and terminated for unit 3. The final safety analysis for unit 2 was completed in December 2001.

Target: Complete nuclear service water spray pond cooling system at Armenia nuclear plant. This system cools safety-related components and resolves seismic concerns.

Result: Nuclear service water spray pond cooling is completed.

Target: Complete construction of heat plant to support long-term decommissioning of the Chernobyl reactors.

Result: Heat plant construction is completed.

FY 2000 Targets and Assessments:

(1) Complete the installation of Safety Parameter Display Systems to improve operator response to emergencies in Russia and at South Ukraine Unit 2, Rivne Unit 3, and Zaporizhzhya in Ukraine. (Met Goal)

(2) Complete a full-scope simulator for Kola Unit 4 and Balakovo Unit 4 in Russia, and for South Ukraine Unit 3 in Ukraine. (Met Goal)

(3) Complete a probabilistic risk assessment for Kola Unit 4 in Russia and for South Ukraine and Rivne plants in Ukraine. (Nearly Met Goal)

Plan of Action: For the Rivne plant, finalization of report was in progress at the end of the year and was scheduled for December 2000. The schedule was based on Ukraine's manpower allocation to complete its part of the joint project.

(4) Establish a Ukrainian Center for Nuclear Fuel and Reactor Core Design and collect information that will be used to design and test nuclear fuel. (Met Goal)

(5) Obtain final design approval for the Chernobyl Heat Plant, and complete delivery of major equipment to the construction site. (Met Goal)

FY 1999 Targets and Assessments:

- (1) Promote U.S. positions and practices in international forums that advocate safe reactor operations. (Met Goal)
- (2) Complete the installation of Safety Parameter Display Systems to improve operator response to emergencies at Leningrad-Unit 4 and Novovoronezh-Unit 4 in Russia. (Nearly Met Goal)
- (3) Complete the development and implementation of an effective reactor plant operator training program at key plants based on the Systematic Approach to Training methodology used in the United States, and

provide and incorporate plant simulators into the operator training programs. (Met Goal)

- (4) Complete plans for critical asset identification within the Department and test vulnerability assessment techniques in two components of the Energy Sector in countries of the former Soviet Union. (Below Expectation)

- (5) Provide preliminary safety assessment results to determine near-term safety improvements at eight nuclear power plants in Russia and Ukraine. (Met Goal)

- (6) Complete a comprehensive decommissioning engineering survey of Chernobyl Unit 1. (Met Goal)

GPRRA Program Activity: Arms Control and Nonproliferation

Annual Performance Plan GPRRA Program Activity	DOE Office	Financial Statement Footnote	Program Element In Schedule Net Costs	NET COSTS (\$M)		
				FY 01	FY 00	FY 99
Arms Control & Nonproliferation	NN	19	Arms Control	\$117	\$118	*

* In FY 1999 combined net costs for Arms Control and International Material Protection, Control and Accounting were \$253 million.

Description: The mission of the Office of Arms Control and Nonproliferation is to detect, prevent, and reverse the proliferation of weapons of mass destruction (WMD) materials, technology and expertise. It is the focal point within the National Nuclear Security Administration (NNSA) and the Department of Energy for activities that support the President’s nonproliferation and international security policies, goals and objectives, as well as those activities mandated by statute. The program provides technical expertise and leadership for NNSA and the Department in interagency, bilateral and multilateral fora involved in nonproliferation and international security matters. The major functional areas of the program include: Policy and Analysis; Reduced Enrichment Research and Test Reactor (RERTR); International Safeguards; Export Control Operations; Treaties and Agreements; and International Security.

Supporting Arms Control And Nonproliferation Policies (NS 4-3)

The program’s goal is to detect, prevent and reverse the threat posed by the proliferation of weapons of mass destruction (WMD) by integrating NNSA and Departmental assets, including those of the national laboratories, and bring them to bear on nonproliferation and related international security issues. Part of the mission of the Office of Arms Control and Nonproliferation is to engage weapons scientists, engineers and technicians in peaceful projects to prevent “brain drain” and foster economic diversification; com-

plete ratification and implementation of U.S. protocol for International Atomic Energy Agency (IAEA) Strengthened Safeguards System; and support U.S. responsibilities for declarations and on-site inspection at DOE facilities. Conduct analyses and technology development efforts for transparency activities (focusing on verified warhead dismantlement) to help ensure that nuclear reductions are transparent and irreversible; work with Russian Customs through the Second Line of Defense program to combat trafficking of illicit nuclear material across border and control points; and maintain core competency as technical experts to U.S. Government agencies on nuclear export control initiatives. (Effective in FY 2002 the Second Line of Defense program has

moved to the Office of International Material Protection and Cooperation (NA-25).) Support negotiations on the Fissile Material Cut-off Treaty and for the Biological Weapons Convention negotiations. Provide analytical and technical support in preparation for implementation of agreement and treaties. Lead, via the Joint Chairmanship, the interagency task force on warhead and fissile material to implement concepts for warhead elimination. Provide equipment, technologies and expertise to the IAEA to continue implementation of nuclear verification and monitoring in Iraq. Provide long-term canister monitoring and maintenance and support IAEA activities at the Democratic Peoples Republic of Korea (DPRK) facility; conduct long-term maintenance training sessions, and conduct health physics tests. Continue export control initiatives to develop the necessary infrastructure to ensure control over nuclear and nuclear-related dual-use equipment, material, and technology in Russia and the New Independent States. (Exceeded Goal)

FY 2001 Targets and Results:

Target: Engage approximately 2,000 scientists, engineers and technicians at nuclear Nonproliferation and International Security (NIS) institutes, and approximately 800 scientists, engineers and technicians at NIS chemical/ biological institutes in over 40 projects to provide long-term commercial employment.

Result: The Initiatives for Proliferation Prevention (IPP) projects are engaging in over 4,000 NIS scientists, engineers, and technicians at nuclear NIS institutes and over 1,000 scientists, engineers and technicians at NIS chemical/biological institutes, an increase of almost 2,000 from last year. The IPP, in FY 2001, funded 23 new projects and provided second-year funding to seven ongoing projects.

Target: Complete canning of BN-350 fast reactor spent fuel.

Result: Spent fuel canning at the BN-350 fast reactor in Aktau, Kazakhstan, was completed in June 2001. Approximately 3 tons of weapons grade plutonium is now safely and securely stored under IAEA safeguards at the Reactor site.

Target: Complete the milestones listed in the FMFIA corrective action plan for the Departmental Challenge of Mission Critical Staffing. (FMFIA)

Result: The Arms Control and Nonproliferation Organization has hired 17 new employees of which 11 have been converted from contractor support functions to federal employees. This eliminated the need for contractor expertise in vital areas of the organization.

FY 2000 Targets and Assessments:

(1) Equip two to three Russian sites and conduct two joint training sessions under a Second Line of Defense Initiative. (Met Goal)

(2) Cooperate with Russian Federation Customs to block nuclear smuggling at Russian border posts with nuclear detection equipment. (Met Goal)

(3) Engage approximately 2,000 scientists, engineers and technicians at nuclear NIS institutes, and approximately 800 scientists, engineers and technicians at NIS chemical/ biological institutes in 50 projects to provide long-term commercial employment. (Met Goal)

(4) Complete the milestones listed in the FMFIA corrective action plan for the Departmental Challenge of Mission Critical Staffing. (Met Goal)

FY 1999 Targets and Assessments:

Further the Nuclear Cities Initiative by promoting cooperation with the closed cities in the Rus-

sian nuclear weapons complex to improve the prospects for defense conversion and employment of former weapons scientists. (Exceeded Goal)

GPRRA Program Activity: International Materials Protection, Control and Accounting

Annual Performance Plan GPRRA Program Activity	DOE Office	Financial Statement Footnote	Program Element In Schedule Net Costs	NET COSTS (\$M)		
				FY 01	FY 00	FY 99
International Material Protection Control and Accounting	NN	19	International Material Protection Control and Accounting	\$129	\$152	*

* In FY 1999 combined net costs for Arms Control and International Material Protection, Control and Accounting were \$253 million.

Description: The mission of the International Materials Protection Control and Accounting (MPC&A) program is to secure Russian weapons and weapons-usable nuclear material by upgrading security where the material is currently located, or by consolidating material at Russian sites where installation of enhanced security systems have already been completed. Rapid and comprehensive upgrades significantly improve the security of Russian weapons-usable nuclear material. Rapid upgrades include measures establishing controlled areas and limits on personnel access to nuclear material; implementing a "two-person" rule; conducting baseline inventories; bricking up windows; hardening doors; installing locks, delay blocks and steel cages; implementing random guard patrols; and improving alarm communications. Comprehensive upgrades include rapid upgrades plus hardening of facilities to allow relocation of guard forces closer to the target; installing interior and exterior detection systems, closed-circuit television (CCTV) monitoring and assessment systems; implementing electronic access control systems, central alarm monitoring stations, and radio communications enhancements; and conducting material inventories using advanced measurement equipment and computerized accounting systems.

Strengthening Russia's Materials Protection, Control, And Accounting (NS 4-4)

Help Russia to install security upgrades and consolidate currently unsecured nuclear weapons and weapons-usable material into fewer buildings and sites; convert excess highly enriched

uranium (HEU) to low enriched uranium (LEU) making it less proliferation attractive; help foster Russian commitment to the operational sustainability of installed material protection, control, and accounting (MPC&A) upgrades so that they provide long-term, continuing enhanced security; and track and assess nuclear smuggling and threat cases. Continue to install MPC&A upgrades for approximately 850 met-

ric tons of nuclear material located at 95 sites in Russia, including Navy, Ministry of Atomic Energy (MINATOM) Weapons Complex, and civilian sites. Continue MPC&A upgrades on approximately 67 percent of the weapons-usable nuclear material in Russia. Continue sustainability initiative to ensure continued security of weapons usable material at sites where comprehensive MPC&A upgrades are complete. This effort shall include the establishment/continuation of training procedures and full operational testing. (Nearly Met Goal)

FY 2001 Targets and Results:

Target: Complete comprehensive upgrades on an additional 8 percent of 850 metric tons of weapons-usable nuclear material raising the total to almost 21 percent secured at 95 sites in Russia.

Result: Completed comprehensive upgrades on an additional 7 percent of 850 metric tons of weapons-usable nuclear material, raising the secured total to almost 18 percent at 95 sites in Russia.

Plan of Action: During FY 2001, DOE held protracted negotiations with MINATOM on an agreement necessary to gain access to sensitive Russian facilities for NNSA project oversight teams. The protracted negotiations, and the resulting lack of an agreement, prevented U.S. access to Russian facilities and prevented U.S. assurance that material protection, control and accounting work at Russian Institutes and facilities was completed. It also prevented U.S. access to facilities needed to complete contracts to initiate new work. The access agreement was reached and finalized in September 2001, and access to facilities began in October 2001. Presently, new contracts have been signed with Russian facilities and accelerated work schedules agreed to by DOE and MINATOM officials.

Target: Complete comprehensive upgrades at an additional eight of 95 sites, raising the total to 37 sites.

Result: Completed comprehensive upgrades at an additional eight of 95 sites, raising the total to 37 sites.

Target: Convert an additional 1.2 metric tons of HEU to LEU, increasing the total amount converted to 2.2 metric tons of weapons-grade nuclear material by converting it to non-weapons grade, thereby improving security and reducing overall cost.

Result: Converted an additional 1.2 metric tons of HEU to LEU, increasing the total amount converted to 2.4 metric tons of weapons-grade nuclear material by converting it to non-weapons grade, thereby improving security and reducing overall cost.

Plan of Action: Program evaluations that are conducted to support this general performance goal include Technical Survey Team project reviews for each MPC&A project. These reviews evaluate site and infrastructure projects against the guidance contained in the Guidelines for Material Protection, Control and Accounting Upgrades at Russian Facilities, and result in reports on progress with recommendations for MPC&A program management.

FY 2000 Targets and Assessments:

(1) Continue to install MPC&A upgrades in Russia for defense-related sites, civilian sites, Russian Navy projects, and the transportation sector. (Met Goal)

(2) Begin consolidation of weapons-usable material into fewer buildings and fewer sites, and eliminate 200 kilograms of weapons-grade nuclear material by converting it to non-weapons grade form, thereby improving security and reducing overall cost. (Exceeded Goal)

FY 1999 Targets and Assessments:

Continue to improve and integrate technology practices, facilities, and training for material pro-

tection, control, and accounting for 650 metric tons of weapons-usable material at 53 locations. (Exceeded Goal)

GPRRA Program Activity: Highly-Enriched Uranium Transparency Implementation

Annual Performance Plan GPRRA Program Activity	DOE Office	Financial Statement Footnote	Program Element In Schedule Net Costs	NET COSTS (\$M)		
				FY 01	FY 00	FY 99
Highly Enriched Uranium Transparency Implementation	NN	19	International Nuclear Safety	*	*	*

*Total net costs for the Highly Enriched Uranium work is shown in the GPRRA Program Activity for International Nuclear Safety.

Description: The Highly Enriched Uranium (HEU) Transparency Implementation program is responsible for ensuring that the nonproliferation objectives of the February 1993 HEU Purchase Agreement between the United States and the Russian Federation are met. This Agreement covers the purchase over 20 years of low enriched uranium (LEU) derived from at least 500 metric tons of HEU removed from dismantled Russian nuclear weapons. Under the Agreement, conversion of the HEU components into LEU is performed in Russian facilities. The purpose of the program is to put into place and implement those goals agreed to by both sides that permit the United States to have confidence that the Russian side is abiding by the Agreement. The program also requires the U.S. to support comparable monitoring activities by the Russian Federation representatives at U.S. facilities subject to the Agreement. Nuclear Security activities under this program support the following general performance goal that flows from the Department's Strategic Plan.

Assuring Transparency In The Conversion Of Russian Highly Enriched Uranium (HEU) (NS 4-5)

Monitor the contracted quantity of HEU converted from dismantled Russian nuclear weapons into LEU delivered to United States Enrichment Corporation Inc. (USEC), which is purchasing the material pursuant to the February 1993 Agreement between the United States and the Russian

Federation. Conduct special monitoring inspections in Russian uranium processing facilities and maintain permanent presence office in Russia to be assured that the LEU being purchased by USEC is derived from HEU removed from dismantled nuclear weapons. Maintain, monitor and retrieve technical data generated by the UF₆ flow and enrichment measurement equipment installed at the blend points at Russian HEU dilution facilities. Compile and analyze collected data and information to support an interagency review and assessment of confidence with the nonproliferation objectives of the HEU Agreement. Conduct an annual inventory of natural uranium feed

material returned to Russia for storage per the March 1999 Feed Agreement.
(Nearly Met Goal)

FY 2001 Targets and Results:

Target: Monitor the conversion of 30 metric tons of HEU from dismantled Russian nuclear weapons into LEU for purchase by USEC.

Result: Monitor the conversion of 30 metric tons of HEU is on-schedule for completion by the end of the calendar year.

Target: Conduct up to 24 special monitoring visits to the four Russian nuclear processing facilities.

Result: Only 20 Special Monitoring Visits were completed. September 2001 visits were affected by the September 11, 2001, attacks and travel restrictions.

Plan of Action: The four missed visits cannot be rescheduled since the total number of visits to Russian facilities is restricted by a protocol signed by U.S. - Russian Federation officials. The events of September 11, 2001, and the concern about personal safety and air travel during the ensuing weeks resulted in the four visits being missed. Since the circumstances of September 11, 2001 are very unique; it is not expected that this will happen in the future.

Target: Install permanent monitoring equipment at the Zelenogorsk blending facility.

Result: Installation of permanent monitoring equipment has been delayed until 2002 due to the signing of agreements for the equipment installation and data retrieval.

Plan of Action: Installation of the equipment is now scheduled for April 20 - May 20, 2002, at the Electro Chemical plant at Zelenogorsk.

Target: Complete negotiations to open Permanent Presence Office at Seversk processing facility.

Result: Negotiations to open the Permanent Presence Office are secondary to the permanent monitoring equipment effort and also require negotiations with Ministry of Atomic Energy (MINATOM). Therefore, they have also been delayed until 2002.

Plan of Action: As of January 2002, MINATOM and the Russian production facility have declined to set a date to negotiate the establishment of a Permanent Presence Office at Seversk. Efforts to negotiate this goal with MINATOM and Seversk continue through Department of State and DOE channels.

Target: Conduct annual inventory of natural uranium feed returned to Russia.

Result: Annual inventory of natural uranium feed returned to Russia was completed as of September 2001.

Plan of Action: Although behind schedule, the agreement between DOE and MINATOM on Blend Down Monitoring System data retrieval and for equipment installation at the final two sites was concluded in July 2001. By combining both of the two final installation sites in the agreement will save time on the third and final equipment installation partially restoring the overall schedule. Also, the number of Special Monitoring Visits was reduced due to funding constraints and the September 11, 2001, attacks.

FY 2000 Targets and Assessments:

(1) Monitor the conversion of 30 metric tons of HEU from dismantled Russian nuclear weapons into low enriched uranium (LEU)

for purchase by the United States Enrichment Corporation. (Met Goal)

(2) Conduct up to 24 special monitoring visits to four Russian facilities. (Nearly Met Goal)

Plan of Action: Two trips were cancelled per mutual DOE/MINATOM understandings; therefore, there are no plans to make up the missed trips.

(3) Install permanent monitoring equipment at the Zelenogorsk blending facility. (Below Expectation)

Plan of Action: Meetings with MINATOM representatives at the Ministerial level were occurring to address this topic at the end of the year. Discussions on decision points were conducted January 15-16, 2001. This will be pursued in FY 2001.

(4) Maintain and monitor the uranium hexafluoride (UF₆) flow and enrichment measurement equipment installed at the blend points at a Russian HEU dilution facility. (Below Expectation)

Plan of Action: A special monitoring team was scheduled to arrive at Urals facility on November 12, 2000, to implement a de-

tailed work plan to adjust equipment and replace decayed radioactive sources. MINATOM has delayed this action again for unilateral reasons, which we were attempting to resolve at the end of the year. We are rescheduling the work plan implementation for later in November 2000.

(5) Compile and analyze collected data and information into an assessment of confidence of compliance with the nonproliferation objectives of the HEU Agreement. (Met Goal)

(6) Conduct Russian technology demonstrations to further warhead dismantlement or transparency measures. (Met Goal)

FY 1999 Targets and Assessments:

(1) Monitor the dilution of 30 metric tons of highly enriched uranium (HEU) to low enriched uranium (LEU) from dismantled Russian nuclear weapons for purchase by the United States Enrichment Corporation. (Met Goal)

(2) Place over 20 metric tons of excess HEU under International Atomic Energy Agency (IAEA) safeguards in FY 1999. (Met Goal)

GPRRA Program Activity: Fissile Materials Disposition

Annual Performance Plan GPRRA Program Activity	DOE Office	Financial Statement Footnote	Program Element In Schedule Net Costs	NET COSTS (\$M)		
				FY 01	FY 00	FY 99
Fissile Materials Disposition	NN	19	Fissile Materials Disposition	\$164	\$130	\$110

Description: The Fissile Materials Disposition Program is responsible for implementing a path forward for disposing of surplus U.S. weapons-usable fissile materials, including highly-enriched uranium and plutonium, providing key negotiation and technical support for efforts to attain reciprocal actions for disposing of surplus Russian plutonium, and storing surplus U.S. fissile materials pending disposition. These efforts contribute to the Administration’s goal of reducing the nuclear danger and the threat of proliferation by disposing of U.S. surplus plutonium and highly-enriched uranium, and helping Russia dispose of their surplus plutonium. NN activities under this program support the following general performance goal that flows from the Department’s Strategic Plan.

Reducing Inventories Of Surplus Weapons- Usable Fissile Materials Worldwide In A Safe, Secure, Transparent And Irreversible Manner (NS 4-6)

For U.S. HEU disposition: transfer quantities of surplus U.S. HEU to USEC, Inc., and the Tennessee Valley Authority to make LEU fuel for commercial reactors and, over time, arrange for disposition of additional lots of surplus HEU through down-blending and commercial use. For U.S. plutonium disposition: implement the U.S. hybrid strategy for plutonium disposition in rough parallel with plutonium disposition in Russia, which includes design, construction, and operation of

U.S. plutonium disposition facilities. However, the design of the Pit Disassembly and Conversion Facility will continue at a reduced rate and the work on immobilization will be suspended and results documented. For Russian plutonium disposition: work with Russia in conducting tests and demonstrations of plutonium disposition technologies; participate in U.S. government efforts to implement the provisions of the bilateral agreement with Russia for the disposition of Russian weapons-grade plutonium; assist in U.S. efforts to secure international financing to support plutonium disposition in Russia; and develop advanced reactor technology. A study will be conducted to examine alternatives aimed at reducing costs in the U.S. and Russia and making greater use of existing facilities and equipment.

In January 2002, the Department announced a new approach for U.S. plutonium disposition efforts. Under the new approach, the U.S. will rely almost exclusively on the irradiation of MOX fuel in existing commercial reactors to dispose

of surplus plutonium. Most of the plutonium previously planned for immobilization will be converted to MOX fuel. (Nearly Met Goal)

FY 2001 Targets and Results:

Target: Initiate Title II design of the Mixed Oxide (MOX) Fuel Fabrication Facility. (FMFIA-surplus fissile materials)

Result: Title I design of the MOX Fuel Fabrication Facility was completed. License application for construction of the facility was submitted to the Nuclear Regulatory Commission, and the Title II design was initiated. (FMFIA-surplus fissile materials)

Target: Ship 9 metric tons (18 percent of 50MT) of surplus Highly Enriched Uranium (HEU) to United States Enrichment Corporation (USEC).

Result: Shipped six metric tons of surplus HEU to USEC.

Plan of Action: The three metric tons of HEU, which were not shipped in FY 2001, will be shipped in FY 2002.

FY 2000 Targets and Assessments:

(1) Complete Title I design of the MOX Fuel Fabrication Facility required for submittal of a license application to the Nuclear Regulatory Commission. (Nearly Met Goal)

Plan of Action: Design work on the MOX Fuel Fabrication Facility is ongoing and the Department expects to submit a license application for construction of the facility to the Nuclear Regulatory Commission in February 2001.

(2) Ship 4 metric tons (8 percent of 50 metric tons) of surplus U.S. HEU to the USEC. (Nearly Met Goal)

Plan of Action: As part of an agreement with USEC, the Department has been shipping surplus HEU to USEC vendors since 1999. Shipment is dependent on several factors, including the ability to perform packaging and shipping operations at the shipping facility. Since planned shipments will catch up during FY 2001, the inability to ship the full 4 MT of HEU to USEC during FY 2000 will not adversely impact the agreement with USEC.

(3) Begin to implement a bilateral agreement with Russia for plutonium disposition. (FMFIA milestone) (Met Goal)

(4) Issue the Record of Decision on a site(s) for three plutonium disposition facilities. (FMFIA milestone) (Met Goal)

(5) Complete Title I design of the Pit Disassembly and Conversion Facility. (Below Expectation)

Plan of Action: Design work on the Pit Disassembly and Conversion Facility is continuing and the Department expects to complete Title I design in June 2001.

FY 1999 Targets and Assessments:

(1) Complete the final Environmental Impact Statement and issue a Record of Decision on siting plutonium disposition facilities. (Nearly Met Goal)

(2) Continue transfer of U.S. surplus HEU to the United States Enrichment Corporation for dilution and subsequent sale. (Met Goal)

(3) Initiate, by the end of FY 1999, negotiations with Russia on a bilateral agreement for the disposition of surplus weapons plutonium. (Exceeded Goal)

(4) Initiate design for Pit Disassembly and Conversion and Mixed Oxide (MOX) Fuel Fabrication facilities. (Met Goal)

GPRRA Program Activity: Naval Reactors

Annual Performance Plan GPRRA Program Activity	DOE Office	Financial Statement Footnote	Program Element In Schedule Net Costs	NET COSTS (\$M)		
				FY 01	FY 00	FY 99
Naval Reactors	NR	19	Naval Reactors	\$700	\$693	\$638

Description: Naval Reactors (NR) is responsible for all Naval nuclear propulsion work, beginning with technology development, continuing through reactor operation and ultimately reactor plant disposal. The Program’s efforts have ensured and continue to ensure the safe operation of the many reactor plants in operating nuclear powered submarines and aircraft carriers, and have fulfilled the Navy’s requirements for new reactors to meet evolving national defense demands. NR activities under this program support the following general performance goal that flows from the Department’s Strategic Plan.

Providing Special Nuclear Power Systems For National Security (NS 5-1)

Description: This goal encompasses all Naval nuclear propulsion work, beginning with technology development, continuing through reactor operation and ultimately reactor plant disposal. Through Naval Reactors, a joint DOE/Navy program, the Department ensures the safe operation of the reactor plants in operating nuclear powered submarines and aircraft carriers comprising 40 percent of the Navy’s major combatants, and is fulfilling the Navy’s requirements for new reactors to meet evolving national defense demands. Ensure the safety, performance, reliability, and service-life of operating reactors. Maintain outstanding environmental performance; ensure no personnel exceed Federal limits for radiation exposure and no significant findings result from environmental inspections by state and Federal regulators. (Met Goal)

FY 2001 Targets and Results:

Target: Ensure the safety, performance, reliability, and service-life of operating reactors for uninterrupted support of fleet demands, including maintaining utilization factors of at least 90 percent for test reactor plants, and 121 million miles steamed for nuclear-powered ships.

Result: Naval Reactors has ensured the safety, performance, reliability, and service-life of operating reactors for uninterrupted support of the Fleet. We have exceeded 90 percent utilization for test reactor plants, and nuclear-powered ships have steamed over 122 million miles.

Target: Develop new technologies, methods and materials to support reactor plant design, including the next generation submarine reactor, which will be 93 percent complete by the end of FY 2001, and initiate detailed design efforts on a reactor plant for the next generation aircraft carrier.

Result: Naval Reactors has developed new technologies, methods and materials to support reactor plant design, which included the next generation submarine reactor, which is over 93 percent complete. Detailed design was initiated on the reactor plant for the next generation aircraft carrier, which is on schedule to meet the planned ship construction start.

Target: Maintain outstanding environmental performance; ensure no personnel exceed Federal limits for radiation exposure and no significant findings result from environmental inspections by state and Federal regulators.

Result: Naval Reactors had no significant findings from state and Federal regulatory inspections, nor any radiation exposure to employees exceeding Federal limits. In fact, during 2001, average occupational radiation exposure for Program personnel was a small fraction (one-sixth) of the 300 millirem of radiation exposure received by an average American in 1 year due to radiation naturally present in the environment.

FY 2000 Targets and Assessments:

(1) Ensure the safety, performance reliability, and service-life of operating reactors. (Met Goal)

(2) Develop new reactor plants, including the next generation submarine reactor, the design of which will be 90 percent complete by the end of FY 2000, and complete initial development efforts on a reactor plant for the next generation aircraft carrier. (Met Goal)

(3) Ensure radiation exposures to workers or the public from Naval Reactors' activities are within Federal limits and no significant findings result from environmental inspections by state and Federal regulators. (Met Goal)

FY 1999 Targets and Assessments:

(1) Ensure radiation exposures to workers or the public, from Naval Reactors' activities are within Federal limits and no significant findings result from environmental inspections by state and Federal regulators. (Met Goal)

(2) Develop new reactor plants, including the next generation reactor, which will be 85 percent complete by the end of FY 1999, and ensure the safety, performance reliability, and service-life of operating reactors. (Exceeded Goal)

GPRA Program Activity: Intelligence and Counterintelligence

Annual Performance Plan GPRA Program Activity	DOE Office	Financial Statement Footnote	Program Element In Schedule Net Costs	NET COSTS (\$M)		
				FY 01	FY 00	FY 99
Intelligence	IN	19	Intelligence	\$40	\$35	\$38
Counterintelligence	CN	19	Counterintelligence	\$48	\$35	\$13

Description: The Intelligence (IN) Program provides the Department, other U.S. government policymakers, and the Intelligence Community with timely, accurate, high-impact foreign intelligence analyses in the following core areas: nuclear proliferation and weapons; nuclear energy, safety, and waste; science and technology; and energy security. In addition, this program provides support to the Department’s counterintelligence objectives. The Intelligence Program also provides quick turn-around, specialized technology applications and operational support to the intelligence, special operations, and law enforcement communities.

The Counterintelligence (CN) program provides the Department, other U.S. Government policymakers, and the Intelligence Community with the capability to successfully identify, neutralize, and deter intelligence threats directed at the Department’s facilities, personnel, information, and technologies. IN and CN activities under this program support the following general performance goal that flows from the Department’s Strategic Plan.

Providing Intelligence And Counterintelligence (NS 6-1)

Description: The Intelligence program provides timely, high-impact foreign intelligence analyses and informs U.S. nonproliferation and arms control policy formulation and execution with all-source evaluations of foreign nuclear weapons programs. The Counterintelligence (CN) program will: (1) administer investigations that support migration of the CN threat and identify

matters that require further investigation by the FBI; (2) develop threat assessments that identify targeting of DOE personnel and assets; (3) develop a multi-channel communications program that enhances employee awareness of CN issues with measurable employee feedback; (4) develop and deploy an enhanced intrusion detection capability for DOE to address cyber threats; (5) conduct inspections of CN programs that ensure comprehensive and quality effort at DOE sights; and (6) evaluate employees assigned to high-risk positions. (Nearly Met Goal)

FY 2001 Targets and Results:

Target: Complete the Counterintelligence Implementation Plan's recommendations. (FMFIA)

Result: The Department has completed 42 of the 46 recommendations included in a Counterintelligence Implementation Plan that was developed as a result of a 90-Day Study and accompanying Action Plan that were requirements of Presidential Decision Directive-61.

Plan Of Action: Conduct Strategic Plan for the CN Organization in FY 2002 to define performance measures and goals for FY 2003. Of the remaining four recommendations to be completed, two are in the process of being forwarded to the Secretary for approval, and the remaining two are being addressed through DOE orders, presently under revision. It is planned that all recommendations will be implemented in 2002, with no known obstacles.

Target: No IN performance targets were established in FY 2001.

Result: The Office of Intelligence successfully provided timely, high-impact foreign intelligence analyses to DOE and the United States Government (USG) arms control and nonproliferation policy makers through tailored briefings on a daily and ad hoc basis. We provided numerous formal written analyses to policy makers at their request and in anticipation of emerging issues. We led the intelligence community by authoring numerous community, policy-relevant documents on foreign nuclear weapons programs and their implications for arms control verification issues, such as National Intelligence Estimates produced by the National Intelligence Council, and formal studies mandated by the Director of Central Intelligence and produced

through the Joint Atomic Energy Intelligence Committee. We took a variety of steps during the year to enhance Office responsiveness to concerns of policy makers by initiating higher bandwidth secure communications to the National Laboratories and by beginning conversion to soft copy imagery delivery to the Labs to bolster Office capabilities to assess and respond to policy maker concerns on arms control and nonproliferation intelligence issues. We also began a process of reorganization against new intelligence priorities in the wake of terrorist attacks on 11 September that will place the Office of Intelligence at the forefront of the Intelligence Community in meeting the needs of USG policy makers for all-source, technical evaluations of foreign nuclear weapons programs and devices, assistance in arms control policy formulation, understanding of foreign nonproliferation threats, foreign terrorist threats to the DOE complex, and the energy security implications of hostile actions against foreign energy infrastructure.

FY 2000 Targets and Assessments:

Complete the Counterintelligence Implementation Plan's recommendations. (FMFIA milestone) (Nearly Met Goal)

Plan of Action: The remaining recommendations will be implemented by mid-FY 2001.

FY 1999 Targets and Assessments:

Implement the DOE Counterintelligence Action Plan pursuant to Presidential Decision Directive-61 to strengthen controls and protections of sensitive information, especially at the nuclear weapons laboratories. (Nearly Met Goal)

GPRRA Program Activity: Worker and Community Transition

Annual Performance Plan GPRRA Program Activity	DOE Office	Financial Statement Footnote	Program Element In Schedule Net Costs	NET COSTS (\$M)		
				FY 01	FY 00	FY 99
Worker and Community Transition	WT	19	Worker and Community Transition	\$36	\$52	\$50

Description: The mission of the Office of Worker and Community Transition is to minimize the social and economic impacts of changes in the Department’s activities and encourage disposition of the Department’s unneeded assets. The principle functions of the Office are to: (1) establish policy and provide funding for contractor work force restructuring activities; (2) develop policy for contractor labor relations, oversee the collective bargaining process, and assist the Department’s Field organizations in labor/management relations; (3) establish policy for community transition and allocate funding to mitigate economic impacts; (4) provide for the disposition of unneeded properties to encourage private sector investment for job creation; (5) reduce potential domestic and international economic impacts caused by disposition of unneeded materials by the Defense National Stockpile Center; and (6) provide information and opportunities for participation in the decision-making process affecting the contractor work force and adjacent communities.

Managing Contractor Work Force Restructuring (NS 3-2)

Minimize the social and economic impacts to individuals and communities caused by changes in the Department’s work force and encourage orderly disposition of the Department’s unneeded assets. Develop strategies to limit increases in unplanned employee attrition at early closure sites to no more than 30 percent in order to maintain essential work skills. (Met Goal)

FY 2001 Targets and Results:

Target: Achieve annual recurring costs savings from separated workers that are at least three times the one-time cost of separation.

Result: The annual savings for the separations that occurred were at least three times the one-time cost of the separations.

Target: Support local community transition activities that will cumulatively create be-

tween 24,000 and 27,500 new private sector jobs by the end of FY 2001.

Result: DOE supported local community transition activities that created 27,497 jobs.

FY 2000 Targets and Assessments:

(1) Achieve annual recurring costs savings from separated workers that is at least three times the one-time cost of separation. (Met Goal)

(2) Support local community transition activities that will create 3,000 to 5,000 non-Federal jobs during FY 2000, bringing the total non-Federal jobs created to between 20,000 and 25,000 by the end of FY 2000. (Met Goal)

(3) Limit involuntary termination of employment at Department of Energy defense

nuclear facilities to between 30 and 60 percent of positions eliminated. (Met Goal)

FY 1999 Targets and Assessments:

(1) Achieve annual recurring costs savings from separated workers that is at least three times the one-time cost of separation. (Exceeded Goal)

(2) Support local community transition activities that will create or retain cumulatively 15,000 to 20,000 new private sector jobs by the end of FY 1999. (Exceeded Goal)

(3) Keep involuntary separations between 30 and 60 percent of the positions eliminated while assuring maintenance of essential work force skills mix and productivity. (Nearly Met Goal)

GPRRA Program Activity: Security And Emergency Operations

Annual Performance Plan GPRRA Program Activity	DOE Office	Financial Statement Footnote	Program Element In Schedule Net Costs	NET COSTS (\$M)		
				FY 01	FY 00	FY 99
Security and Emergency Operations	SO	19	Nuclear Safeguards and Security	\$159	\$122	\$105
	SO	19	Emergency Management	\$24	\$29	\$35
	SO	19	Emergency Response	\$51	\$78	\$91

Description: The Office of Security (formerly the Office of Security and Emergency Operations) develops strategies and policies governing the protection of national security and other critical assets entrusted to the Department of Energy. The office also manages security operations for DOE facilities in the National Capital area.

Promoting Effective Management Of Information Technology (IT) Resources In The Department (CM 4-1)

Ensure economical and effective management of information resources to support DOE missions and objectives. Make effective use of commercial applications and solutions for DOE's enterprise-wide information technology (IT) infrastructure; link IT investments to DOE strategic goals and the needs of business operations; minimize the number of redundant and duplicative systems; and improve enterprise-wide data sharing. (Met Goal)

FY 2001 Targets and Results:

Target: Complete the milestones listed in the FMFIA corrective action plan for the Departmental challenge of information technology management. (FMFIA)

Result: The overall assessment for the General Performance Goal is "Met Goal." Seven of the eight Planned Critical Milestones were fully completed and Milestone 1 is in final concurrence. Moreover, during FY2001, the Secretary announced changes to the management structure of the Department in his July 26, 2001, memorandum titled, "Changes to the Department's Management Structure" by moving the Office of the Chief Information Officer from the Office of Security and Emergency Operations to a direct

report to the Office of the Secretary. This action will satisfy Clinger-Cohen Act requirements by positioning the DOE Chief Information Officer (CIO) as a full participant on the Department's executive management team. The CIO will serve as the (IT) advisor to the Secretary, Deputy Secretary and other Program Offices. This organization change will also clarify the CIO role as the primary management official for Department-wide information management policy development. These changes were effective and fully implemented November 4, 2001.

FY 2000 Target and Assessment:

No targets were established in FY 2000.

FY 1999 Target and Assessment:

No targets were established in FY 1999.

Providing Security And Emergency Operations (NS 6-2)

Description: Develop and implement policy and guidelines for the protection of the Department's critical assets. Provide the capability to successfully address the areas of personnel security, physical countermeasures, cyber security including forensics analysis capability, nuclear material control and accountability, and policy for hosting foreign visitors. Continue to improve and enhance the control and accountability of nuclear materials in the DOE complex through the development of state-of-the-art technologies, including measurement equipment and core nuclear material accounting software. Direct Department-wide energy sector critical infrastructure protection activities and lead and coordinate Departmental efforts to work with industry, state, and local governments, and national and international entities. Work with the national energy sector

toward developing the capability required for assuring the Nation's energy infrastructures, including the physical and cyber components of the electric power, oil and gas infrastructures, the interdependencies among those components, and the interdependencies with the other critical national infrastructures. Identify DOE technologies that can help assure our Nation's critical energy infrastructures and facilitate their use by the private sector and other Federal agencies. Modernize the information security program to allow analysis and deterrence of major incidents involving the compromise of classified information. This includes: expansion of information assurance forensics analysis capabilities to support investigations and prosecutions of unauthorized disclosures of classified information; training for response personnel on preservation of evidence including electronic media; expansion of the Department's technical surveillance countermeasures program; and supporting the development and approval of a comprehensive Cyber Security Program Plan that describes the implementation of cyber security protection for every DOE site. (Nearly Met Goal)

FY 2001 Targets and Results:

Target: Complete the milestones listed in the FMFIA corrective action plan for the Departmental challenge of security.

Result: All planned critical milestones in the FMFIA Departmental challenge of Security have been addressed. Five of the planned critical milestones require the implementation of either Inspector General or General Accounting Office audit recommendations. These five audits included a total of 26 recommendations, of which the Office of Security successfully closed 14. Of the remaining 12 recommendations, four were transferred to the National Nuclear Security Administration for implementation and the remaining eight recommendations have been addressed, but no action has

been possible as a result of the Office of the Secretary's 6-month moratorium on security-related directives associated with the Hamre Commission examination of security and science at DOE research facilities. Although the "official" close-out action for these recommendations will be the publishing of the DOE policies, the identified requirements are being integrated into current safeguards and security processes.

Plan of Action: Ensure periodic and regularly scheduled meetings between all designated offices designed to address, track, and achieve critical milestones. Review and analyze the results of the Hamre Commission study and revise current directives as appropriate.

Target: Complete the milestones listed in the FMFIA corrective action plan for the Departmental challenge of mission critical staffing. (FMFIA)

Result: All planned critical milestones in the FY 2000 FMFIA Departmental Challenge for Mission Critical Staffing were completed in FY 2000, therefore there were no actions in FY 2001.

FY 2000 Targets and Assessments:

(1) Initiate the correction of DOE infrastructure vulnerabilities identified by the President's Commission on Critical Infrastructure Protection. (Met Goal)

(2) Complete the milestones listed in the FMFIA corrective action plan for the Departmental Challenge of Security. (Met Goal)

(3) Complete the milestones listed in the FMFIA corrective action plan for the Departmental Challenge of Mission Critical Staffing. (Met Goal)

(4) Reduce by 15 actions the processing backlog of requests for classified documents submitted under the Freedom of Information Act and Executive Order 12958 mandatory review provisions. (Below Expectation)

Plan of Action: The Office of Nuclear and National Security Information has dedicated a document reviewer to perform quality assurance reviews and eliminate a significant bottleneck in the review process. In addition, the Federal staff has doubled and adopted a cross-tasking approach to allow concentration of assets when possible to reduce the FOIA and Mandatory backlog. The document reviewers added in FY 2000 have completed their formal training and are now performing document reviews. Based on current staffing and assuming no further increase in workload, we expect the backlog to decrease by the end of FY 2001. During FY 2001, the backlog was reduced by 155 actions.

FY 1999 Targets and Assessments:

Accomplish the milestones of the FMFIA corrective action plan for the Departmental challenge of unclassified computer security. (Met Goal)

GPRA Program Activity: Independent Oversight and Performance Assurance

Annual Performance Plan GPRA Program Activity	DOE Office	Financial Statement Footnote	Program Element In Schedule Net Costs	NET COSTS (\$M)		
				FY 01	FY 00	FY 99
Independent Oversight and Performance Assurance	OA			*	*	*

*Net costs were included with those of Facilities Safety Program Element under the Environment, Safety and Health GPRA Program Activity.

Description: The Office of Independent Oversight and Performance Assurance (OA) is a corporate resource that performs independent oversight to verify that DOE security interests are protected and that DOE can respond to emergencies. The Office is committed to excellence and continuously strives for improvement by conducting independent oversight of safeguards and security performance. The hallmark and highest priority of all Independent Oversight and Performance Assurance activities is daily excellence in the protection of the workers and the Nation. The Office of Independent Oversight and Performance Assurance activities are concentrated within one GPRA Program Activity: Independent Oversight and Performance Assurance. OA activities under this program support the following general performance goal that flows from the Department’s Strategic Plan.

Conducting Independent Oversight And Performance Assurance (NS 6-3)

Description: Conduct safeguards and security evaluations and continuous cyber security inspections at major Departmental sites to provide an independent assessment of the status of safeguards and security programs and establish a baseline of findings. Perform regular assessments of emergency management programs at DOE sites. (Exceeded Goal)

FY 2001 Targets and Results:

Target: Conduct safeguards and security evaluations at 20 major sites per year to report the status of safeguards and security programs for the Secretary and to establish a baseline of findings to track and measure improvement in these areas at sites throughout the Department.

Result: Conducted the 8 safeguards and security reviews and 12 limited-scope and follow-up reviews for a total of 20 sites that were reviewed during the year. OA applies

its resources to these sites based on the priorities of the department through out the year. The sites selected for review are based on their potential impact on National Security and the ongoing security events at specific sites.

Target: Perform continuous cyber security inspections and no-notice reviews at 14 major Departmental sites per year to improve oversight of cyber security and establish a baseline of issues through a new function dedicated solely to cyber security reviews, offsite monitoring of Internet security, and controlled attempts to penetrate security firewalls.

Result: Performed 17 cyber security inspections.

Target: Provide for the dedicated oversight of emergency management issues at Department Headquarters and 15 major Departmental sites. This function focuses solely on the effectiveness of the Department's emergency management programs and establishes a performance baseline of the status of these programs throughout the Department.

Result: Provided for nine Emergency Management Oversight reviews and six limited-scope and follow-up reviews.

Target: Conduct three special complex-wide reviews of topics such as Wildland Fire Safety and National Emergency Response Assets to determine their effectiveness across the complex.

Result: Specials reviews have been conducted on three topics. The results of these reviews have been entered into OA's database of findings, forming the baseline for future performance evaluations.

FY 2000 Target and Assessment:

Conduct oversight special reviews, assessments, evaluations, and inspections addressing emergency management, safety management, and accidents. (Met Goal)

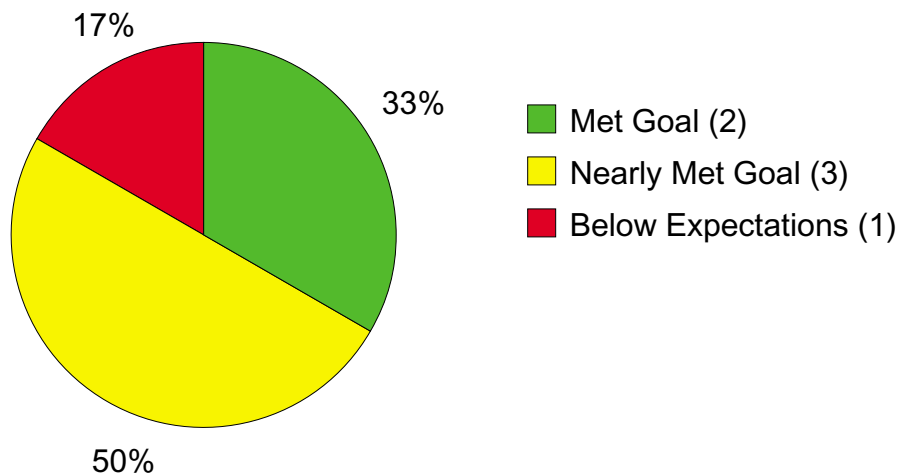
FY 1999 Target and Assessment:

Conduct oversight special reviews, assessments, evaluations, and inspections of such topics as emergency management, and safeguards and security. (Met Goal)

Environmental Quality

GOAL: Aggressively clean up the environmental legacy of nuclear weapons and civilian nuclear research and development programs at the Department’s remaining sites; safely manage nuclear materials and spent nuclear fuel; and permanently dispose of the Nation’s radioactive wastes.

The following pages contain detailed information on the results achieved for revised final Environmental Quality programs’ performance goals and targets for FY 2001 as presented in the FY 2002 Annual Performance Plan. There were six General Performance Goals in FY 2001 for Environmental Quality programs. The overall results are:



GPRRA Program Activity: Environmental Management

Annual Performance Plan GPRRA Program Activity	DOE Office	Financial Statement Footnote	Program Element In Schedule Net Costs	NET COSTS (\$M)		
				FY 01	FY 00	FY 99
Environmental Management	EM	22	Site Project Completion	\$1,029	\$1,181	\$1,156
	EM	22	Defense Facilities Closure Projects	\$1,413	\$1,407	\$1,410
	EM	22	Post 2006 Completion	\$2,804	\$2,605	\$2,524
	EM	22	Technology Development	\$281	\$258	\$294
	EM	22	EM Privatization	\$55	\$372	—
	EM	22	Uranium Enrichment Decontamination and Decommissioning	\$196	\$124	\$116
	EM	22	Uranium Programs	\$29	\$39	\$95

Description: The Environmental Management (EM) program budget structure categorizes projects according to their specific appropriation: Defense Environmental Restoration and Waste Management, Defense Facilities Closure, Defense Environmental Management Privatization, Non-Defense Environmental Management, and the Uranium Facilities Maintenance and Remediation Account. The structure of the EM budget continues to be based on the grouping of activities into projects at the various Departmental sites, a crucial step in accelerating work and lowering the cost of carrying out the EM mission. EM's budget program accounts reflect near-term goals and emphasis on completion:

- Site Closure provides funding for completing cleanup and closing down facilities with no enduring Federal presence on-site, except for stewardship activities. The Department has established a goal of completing cleanup at the sites in this account by the end of 2006.
- Site/Project Completion funds those projects for which EM has established a goal of completion by 2006 at: 1) EM sites where overall site cleanup will not be fully accomplished by 2006; and 2) DOE sites where EM has set a goal of completion of all EM projects by 2006 (except for long-term stewardship activities), but where there will be a continuing Federal workforce at the site to carry out enduring non-EM missions.

- Post 2006 Completion funds those projects that are expected to require work beyond 2006 and includes efforts at the Department's largest sites, where operations have been carried out over a long period of time and associated cleanup will take longer to complete. It includes multi-site activities, such as pollution prevention, environmental and regulatory activities, transportation and packaging, emergency preparedness, and National Analytical Management Program activities.
- Science and Technology manages and directs investments in research, development, implementation, and deployment of new technologies.

The EM budget structure also includes an account for Program Direction which provides the critical oversight and management functions for the EM program including federal salaries, travel and other costs.

Completing Geographic Site Cleanup (EQ 1-1)

Complete cleanup at as many of the Department's 43* (as of FY 2000 year end) remaining sites as possible by 2006. Continue cleanup at the remaining sites, including the five largest sites, scheduled for completion in the post-2006 timeframe. (Nearly Met Goal)

FY 2001 Targets and Results:

Target: Complete remediation at the following three geographic sites increasing the total completed to 74 of the 114* geographic sites: Argonne National Laboratory-West in Idaho, the Grand Junction Office Site in Colorado, and the General Atomics Site in California.

Result: Completed the following three geographic sites: Argonne National Laboratory-West in Idaho; the Grand Junction Office Site in Colorado; and the General Atomics Site in California.

Target: Complete actions addressing safety and health issues at Paducah from 1990 forward. (Phase I) (FMFIA-safety and health)

Result: Of the 77 corrective actions to be performed under Phase 1, 76 actions were scheduled to be completed by the end of FY 2001 (remaining action received an extension beyond the end of FY 2001). Of the 76 actions, 73 were completed by the end of FY 2001.

Plan Of Action: The three outstanding corrective actions (4A-3, 7A-3, and 10B-2) are currently being worked on, and specific milestones have been established; actions are currently scheduled to be completed by February 2002.

Target: Complete 183 release site cleanups. This will bring the total number of completed release site cleanups to 5,102 out of

a total inventory of approximately 9,995 release sites.

Result: Completed 186 (the stated target was revised after publication to 196) release site cleanups.

Target: Complete 28 facility decommissionings. This will bring the total number of completed decommissionings to 667 out of a total inventory of approximately 3,391 facilities.

Result: Completed 31 (the stated target was revised after publication to 45) facility decommissionings.

Target: Deactivate eight facilities bringing the total number of completed deactivations to 417 out of a total of approximately 2,311 facilities.

Result: Completed 32 (the stated target was revised after publication to 20) facility deactivations.

FY 2000 Targets & Assessments:

(1) Complete remediation at two geographic sites, increasing the total completed to 71 of 113 geographic sites. (FMFIA milestone) (Met Goal)

(2) Monitor field activities and participate in reviews at the Savannah River Operations Office to ensure adherence to project costs and schedules. (FMFIA milestone) (Met Goal)

(3) Complete 252 release site cleanups. This will bring the number of completed release site cleanups to 4,730 out of a total inventory of approximately 9,700 release sites. (Nearly Met Goal)

(4) Complete 82 facility decommissionings. This will bring the number of completed facility decommissionings to 640 out of a total inventory of approximately 3,300 facilities. (Nearly Met Goal)

*Change reflects the addition of the MOAB/ATLAS site in Utah.

FY 1999 Targets and Assessments:

(1) Complete remediation at three geographic sites, increasing the total completed to 68 of 113 geographic sites. (This is a milestone of a FMFIA corrective action plan.) (Met Goal)

(3) Complete 165 release site cleanups. (This will bring the number of completed release site cleanups to about 4,290 out of a total inventory of approximately 9,700 release sites.) (Nearly Met Goal)

(4) Complete 80 facility decommissionings. (This will bring the number of completed facility decommissionings to about 530 out of a total inventory of approximately 3,350 facilities.) (Exceeded Goal)

Dispose Of Waste Generated During Past And Current DOE Activities

(EQ 1-2)

Safely and expeditiously dispose of waste generated during past and current DOE activities. Continue shipment of transuranic (TRU) waste for disposal at the Waste Isolation Pilot Plant (WIPP). (Nearly Met Goal)

FY 2001 Targets and Results:

Target: Produce 225 canisters of HLW. This will complete about 7.4 percent of the total canisters that will be produced from FY 1998 to life-cycle completion.

Result: Produced 238 canisters of HLW.

Target: Ship 2,425 cubic meters of TRU waste to WIPP for disposal. This will bring the total TRU waste shipped to 3,078 cubic meters, which is about 1.8 percent of the

total TRU waste that requires disposal between FY 1998 and FY 2034.

Result: Shipped 1,945 cubic meters of TRU waste to WIPP.

Plan of Action: There are a number of reasons that shipments to the Waste Isolation Pilot Plant (WIPP) were lower than the FY 2001 goal. These reasons include: number of "stand downs" at INEEL to correct conduct of operations problems and equipment outage; delays caused by the New Mexico Environment Department (NMED) by reclassifying and approval of certain permit modifications that affected waste characterization activities at sites; delays by NMED in approving site certification audits; and delays in shipments due to weather. INEEL and RFETS have requested an increase in the number of scheduled shipments per week to WIPP to help DOE keep commitments under the Idaho Settlement Agreement and meeting the 2006 Rocky Flats Site Closure target. The WIPP Program is seeking additional FY 2002 funding to increase the weekly number of shipments received at WIPP.

Target: Dispose of approximately 8,271 cubic meters of Mixed Low Level Works (MLLW). This will bring the total MLLW disposed to 40,745 cubic meters which is about 30 percent of the total MLLW that requires disposal between FY 1998 and FY 2070.

Result: Disposed of 6,988 cubic meters of MLLW.

Plan of Action: The target was missed due to the unavailability of the prerequisite number of treatment facilities and temporary interruptions in shipping activities. A key treatment facility has now come on line and shipping interruptions have been resolved. This combination of corrective actions should enable the department to meet its FY 2002 target.

Target: Treat approximately 4,814 cubic meters of MLLW in FY 2001. This will bring the total MLLW treated to 29,385 cubic meters which is about 38 percent of the total MLLW that requires disposal between FY 1998 and FY 2070.

Result: Treated 4,385 cubic meters of MLLW.

Plan of Action: Target was missed because commercial treatment facilities expected to be operating did not come on line. One of the commercial treatment facilities has now come on line and will support meeting EM's FY 2002 target.

Target: Dispose of approximately 47,908 cubic meters of Low Level Waste (LLW). This will bring the total LLW disposed to more than 174,109 cubic meters which is about 9 percent of the total LLW that requires disposal between FY 1998 and FY 2070.

Result: Disposed of 64,825 cubic meters of LLW.

FY 2000 Targets and Assessments:

(1) Produce 200 canisters of HLW at the Defense Waste Processing Facility at the Savannah River Site, and five canisters of HLW at the West Valley Demonstration Project. This will complete about four percent of the total canisters that will be produced from FY 1998 to life-cycle completion. (Exceeded Goal)

(2) Ship 1,200 cubic meters of TRU waste to WIPP for disposal. This will bring the total TRU waste shipped to 1,550 cubic meters, which is about 1 percent of the total TRU waste that requires disposal between FY 1998 and FY 2034. (Below Expectation)

Plan of Action: 371 cubic meters were shipped. From October 1, 1999, to

November 8, 1999, only non-RCRA waste was received at WIPP while awaiting approval of the RCRA permit. Due to the wording of the permit, the waste sites had to realign their programs to conform with the requirements. Receipt of waste resumed on March 10, 2000, after a 4-month delay.

The Carlsbad Field Office (CBFO), with support and assistance from the HQS WIPP Office (EM-23), is working in several areas to ramp up WIPP to full operating capacity: (1) CBFO is undertaking major efficiency initiatives through the permit modifications process to increase the throughput to WIPP; (2) CBFO is working to address the unique needs of small quantity generator sites by dispatching mobile vendors to perform onsite waste characterization for those sites where it would not be cost effective to construct new facilities to meet WIPP waste characterization requirements; i.e., CBFO and HQS are currently working with the Mound and Savannah River Site (SRS) facilities to finalize a process whereby Mound TRU wastes are consolidated with similar wastes at SRS for final characterization and shipment to WIPP for disposal; and (3) CBFO is seeking permit modifications for the disposal of remote-handled TRU waste at WIPP. CBFO has undertaken other major efficiency initiatives to resolve existing barriers to filling the WIPP pipeline including: (1) developing a central waste characterization facility at the WIPP site to accelerate closure and reduce costs associated with waste removal particularly from small quantity sites (This is contingent on approval of a permit modification by the New Mexico Environment Department.) (2) alternatives to shipping waste to WIPP using the TRUPACT-II/truck combination are being reviewed to allow large pieces of equipment/material to be shipped to WIPP without requiring waste generator sites either to repackage or size reduce its transuranic waste; (3) changes are being sought to the WIPP Hazardous Waste

Facility Permit and other authorization basis documents to ease restrictions associated with the treatment, characterization, transportation, and disposal of transuranic waste destined for WIPP; (4) equipment is being developed to allow DOE to perform radioassay of large waste containers which will allow waste generator sites to certify large containers to eliminate the need for repackaging; (5) HQS and CBFO, through use of the National TRU Waste Management Plan and meetings with the TRU shipping sites, have established a process where the Site Manager and the Contractor Site Manager must sign up to shipping commitments for FY 2001 and the out years. Periodic meetings will be held to check on progress and discuss issues with the shipping commitments.

All these initiatives plus others are being pursued to help increase the throughput to WIPP while reducing costs to the complex and to address site closure commitments and compliance agreements and milestones.

(3) Implement the requirements in WIPP's RCRA permit and begin Mixed TRU waste disposal operations in FY 2000. (FMFIA milestone) (Met Goal)

(4) Dispose of 10,000 cubic meters of MLLW. This will bring the total MLLW disposed of to 35,500 cubic meters which is about 15 percent of the total MLLW that requires disposal between FY 1998 and FY 2070. (Exceeded Goal)

(5) Dispose of 40,000 cubic meters of LLW. This will bring the total LLW disposed of to 116,000 cubic meters, which is about 7 percent of the total LLW that requires disposal between FY 1998 and FY 2070. (Exceeded Goal)

FY 1999 Targets and Assessments:

(1) Produce 15 canisters of HLW at the West Valley Demonstration Project. (Nearly Met Goal)

(2) Produce 200 canisters of high-level waste (HLW) at the Defense Waste Processing Facility at the Savannah River Site. (Exceeded Goal)

(3) Ship 100 to 200 cubic meters of TRU waste to WIPP for disposal. (Exceeded Goal)

(4) Make disposal-ready 700 cubic meters of TRU waste. (Below Expectation)

(5) Dispose of 15,000 cubic meters of mixed low-level waste. (Nearly Met Goal)

(6) Dispose of 73,000 cubic meters of low-level waste. (Below Expectation)

Stabilize Nuclear Material And Spent Nuclear Fuel (EQ 1-3)

Stabilize nuclear material and spent nuclear fuel by producing safer chemical and/or physical forms of the material, reduce the level of potential risk to personnel from radiation exposure or to the environment from contamination. (Nearly Met Goal)

FY 2001 Targets and Results:

Target: Stabilize 510 containers of plutonium metals/oxides and 29,456 kilograms bulk of plutonium residues. This will com-

plete stabilization of about 19 percent of the containers of plutonium metals/oxides, and 83 percent of the kilograms bulk of plutonium residues that require stabilization between FY 1998 and life-cycle completion.

Result: Stabilized 426 containers of plutonium metals/oxides and 23,259 kilograms bulk of plutonium residues.

Plan of Action: Richland was the primary contributor to not meeting the stabilization of plutonium metals/oxides target. Start-up of packaging equipment at Richland was delayed by three months due to delivery and installation problems. Operations are on hold to resolve a weld porosity problem with packages. Necessary adjustments to work schedule to be made when weld problem corrected. Main contributor to not meeting the stabilization target for plutonium residues was Rocky Flats; however, all residue stabilization is still planned to be completed at Rocky Flats by the May 2002 DNFSB commitment date.

Target: Move to dry storage 195 metric tons of heavy metal (MTHM) of spent nuclear fuel (SNF) to dry storage. This will complete transfer of 8 percent of MTHM of SNF that will be moved to dry storage between FY 1998 and life-cycle completion.

Result: Moved 206 metric tons of heavy metal of spent nuclear fuel.

FY 2000 Targets and Assessments:

(1) Stabilize 400 containers of plutonium metals/oxides, 41,000 kilograms bulk of plutonium residues, and 130 handling units of other nuclear material in other forms. This will complete stabilization of about 10 percent of the containers of plutonium metals/oxides, 70 percent of the kilograms bulk of plutonium residues, and 3 percent of the

handling units of other nuclear material in other forms that will require stabilization between FY 1998 and life-cycle completion. (Nearly Met Goal)

Plan of Action: Only 29,460 kilograms bulk of plutonium residues was stabilized. This was caused by work stoppage for site-wide inventory at Rocky Flats which was noted in the mid-year report and the effects of which continued into the second half of the year. Additional delay occurred as a result of several plutonium facilities being shutdown due to unacceptable trends in safety issues. Recovery plans are being developed to meet DNFSB Recommendation 2000-1 Implementation Plan commitments for stabilization of all remaining residues.

(2) Move 35.1 metric tons of heavy metal (MTHM) of spent nuclear fuel (SNF) to dry storage. This will complete transfer of 2 percent of MTHM of SNF that will be moved to dry storage between FY 1998 and life-cycle completion. (Below Expectation)

Plan of Action: Only three metric tons of MTHM was moved. Having resolved the operational and regulatory issues, the remaining TMI-2 fuel transfers are expected to be complete during FY 2001.

FY 1999 Targets and Assessments:

(1) Stabilize 33,000 kilograms bulk of plutonium residues, 40 liters of plutonium solution, and 332 containers of plutonium metals/oxides. (Nearly Met Goal)

(2) Stabilize and safely store six metric tons of heavy metal of spent nuclear fuel (SNF). (Below Expectation)

Deploying Innovative Cleanup Technologies

(EQ 1-4)

Deploy innovative environmental cleanup, nuclear waste, and spent fuel treatment technologies that reduce cost, resolve currently intractable problems, and/or are more protective of workers and the environment. (Met Goal)

FY 2001 Targets and Results:

Target: Accomplish 200 innovative technology deployments.

Result: Deployed 204 innovative technologies.

FY 2000 Targets and Assessments:

Accomplish 60 innovative technology deployments. (Exceeded Goal)

FY 1999 Targets and Assessments:

Accomplish 60 innovative technology deployments. (Exceeded Goal)

Disposing Of The Department's Depleted Uranium Hexafluoride And Excess Natural Uranium Inventories

(EQ 3-1)

Work with Federal, state and local regulators to ensure that the Department's inventories of depleted uranium hexafluoride are stored and maintained in a safe and efficient manner. Man-

age the development and implementation of a long-term strategy for the conversion and disposition of depleted uranium hexafluoride in a manner that makes useful and safe conversion products and cost-effectively disposes of the remainder. Effectively manage arrangements with the United States Enrichment Corporation (USEC, Inc.) on the lease of facilities and electric power supplies, and reimbursable services. (Below Expectations)

FY 2001 Targets and Results:

Target: Publish the depleted Uranium Hexafluoride Conversion Services Request for Proposals in October 2000.

Result: Request for Proposals was issued on October 31, 2000.

Target: Award the depleted Uranium Hexafluoride Conversion Services contract.

Result: Contract was not awarded by FY 2001 year-end.

Plan of Action: The anticipated award for the depleted UF_6 conversion project has been delayed and is pending a policy decision.

FY 2000 Targets and Assessments:

Meet commitments to the Ohio Environmental Protection Agency, the Tennessee Department of Environment and Conservation, and the Defense Nuclear Facilities Safety Board to ensure the safety of the Department's inventory of depleted UF_6 . (Exceeded Goal)

FY 1999 Targets and Assessments:

Meet all commitments made to the Ohio Environmental Protection Agency and the Defense Nuclear Facilities Safety Board to ensure the safety of the Department's inventory of depleted uranium hexafluoride. (Met Goal)

GPRA Program Activity: Civilian Radioactive Waste Management

Annual Performance Plan GPRA Program Activity	DOE Office	Financial Statement Footnote	Program Element In Schedule Net Costs	NET COSTS (\$M)		
				FY 01	FY 00	FY 99
Civilian Radioactive Waste Management	RW	22	Civilian Radioactive Waste Management Program Costs	\$401	\$403	\$376

Description: The Office of Civilian Radioactive Waste Management (RW) implements the Federal policy for permanent disposal of high-level radioactive waste and spent nuclear fuel in order to protect the public health and the environment. The Department has made substantial progress in characterizing Yucca Mountain, Nevada, to determine its suitability as a geologic repository site for these wastes. Based on the results of the site investigations and related laboratory testing conducted over the past 20 years, the Department believes that work should proceed toward a decision on whether to recommend the Yucca Mountain site to the President. This decision will consider the views of the State of Nevada, affected Indian tribes, and the Nuclear Regulatory Commission, as required by the Nuclear Waste Policy Act. In turn, the President will decide whether to recommend the site to Congress. If the site is recommended for development as the repository site, a final environmental impact statement will accompany the site recommendation.

If Yucca Mountain is designated as the repository site, a license application for construction authorization by the Nuclear Regulatory Commission will be developed. Under current plans, waste acceptance at the repository could commence in 2010. However, the Department's schedule remains critically dependent on adequate program funding. Any additional reductions will impact critical near-term milestones for the Yucca Mountain Site Characterization Project, and possibly the planned 2010 waste acceptance date. During the licensing and pre-construction phase of the Program, funding well in excess of past appropriations will be required. In addition, the Department will have to address concerns of local citizens and national opposition groups, as well as legal challenges.

Continuing With Yucca Mountain Site Characterization (EQ 2-1)

Complete the scientific and technical analyses of the Yucca Mountain site, and if it is determined to be suitable for a geologic repository, obtain a license from the Nuclear Regulatory Commission. (Met Goal)

FY 2001 Targets and Results:

Target: Complete the scientific and technical documents that will provide the technical basis for a possible Site Recommendation.

Result: The Yucca Mountain Science and Engineering Report (S&ER), released in May 2001, and the Yucca Mountain Preliminary Site Suitability Evaluation (PSSE), released in July 2001, provide the initial technical basis for a possible site recommendation.

Target: Conduct statutory hearings in the vicinity of Yucca Mountain to inform the residents that the site is under consideration and to receive comments regarding a possible Site Recommendation.

Result: Three hearings were to be held on September 5, 12, and 13, 2001. The latter two were rescheduled and completed on October 10 and 12, 2001, due to the September 11, 2001 terrorist attacks.

Target: Update all process models and conduct a total system performance assessment for use in the Site Recommendation.

Result: The total system performance assessment for site recommendation was completed early in FY 2001, as planned. Some process models were subsequently updated to incorporate new science and engineering information.

Target: Complete and issue Total System Life Cycle Cost and Fee Adequacy reports.

Result: The "Analysis of the Total System Life Cycle Cost of the Civilian Radioactive Waste Management Program" and the "Nuclear Waste Fund Fee Adequacy: An Assessment" were published in May 2001.

FY 2000 Targets and Assessments:

(1) Select the reference design for site recommendation and license application. (Nearly Met Goal)

Plan of Action: The preliminary license application design will evolve and may include adjustments to make it more effective and reduce repository cost without affecting safety.

(2) Select the reference natural systems models for site recommendation and license application. (Met Goal)

(3) Complete public hearings on the Draft Environmental Impact Statement (EIS) which was published in August 1999. (Met Goal)

FY 1999 Targets and Assessments:

(1) Complete repository and waste package design inputs for use in total system performance assessment for the repository license application. (Met Goal)

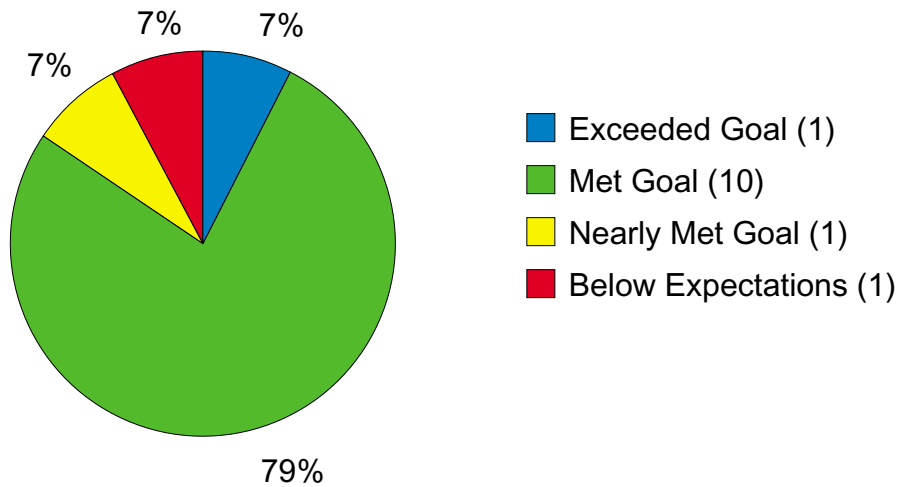
(2) Complete peer review of the total system performance assessment to provide formal, independent evaluation and critique. (Met Goal)

(3) Publish a draft EIS. The Nuclear Waste Policy Act requires a Final EIS to accompany the site recommendation. (Met Goal)

Science

GOAL: Advance the basic research and instruments of science that are the foundations for DOE’s applied missions, a base for U.S. technology innovation, and a source of remarkable insights into our physical and biological world and the nature of matter and energy.

The following pages contain detailed information on the results achieved for revised final Science programs’ performance goals and targets for FY 2001 as presented in the FY 2002 Annual Performance Plan. There were 13 General Performance Goals in FY 2001 for Science programs. The overall results are:



Program Evaluations Conducted During FY 2001:

The major evaluations within Science (SC) programs that were conducted during FY 2001 are listed below. Through these evaluations, the Department was able to reassess its programs and reorient them or apply additional resources in order to ensure that they achieve their intended objectives as part of the strategic planning process conducted in FY 2001.

All new research projects and approximately 30 percent of ongoing projects were competitively selected and peer reviewed using guidelines defined in 10 CFR 605 for the university projects. Each year in the Office of Science, approximately 2,300 new and renewed university projects undergo over 13,000 individual peer reviews. (www.sc.doe.gov/production/orm/Grants_Contracts/merit_review/Merit_Review_System.htm)

Office of Construction Management Support Division

The Construction Management Support Division provides independent advice to the Director of SC relating to those activities essential to constructing and operating major research facilities. In addition, this division provides professional management and staff support regarding these functions to SC program offices. The primary responsibilities of the Construction Management Support Division includes conducting technical, cost, schedule and management peer reviews of SC construction projects and large experimental equipment and coordinating and conducting validation reviews for all SC projects for inclusion in the fiscal budget process. Reports from these reviews **contain business sensitive information that is critical to SC internal management processes and are not published on the World Wide Web.**

In FY 2001, **the Construction Management Support Division conducted the following SC reviews:**

- October 10-11, 2000 - Large Hadron Collider (LHC) - Compact Muon Solenoid (CMS) Detector Review
 - October 17-19, 2000 – Pacific Northwest National Laboratory (PNNL) Landlord Review
 - November 1-2, 2000 - Spallation Neutron Source (SNS) Review
 - November 8, 2000 – Collider Detector at Fermilab (CDF)/D-Zero Detector Mini-Review
 - November 28-30, 2000 - Neutrinos at the Main Injector (NuMI) Review
 - November 29-30, 2000 - LHC Accelerator Review
 - December 5-7, 2000
 - Oak Ridge National Laboratory (ORNL) Landlord Review
 - December 5-6, 2000
 - Los Alamos Neutron Science Center Experiment (LANSCE) Review
 - December 6-8, 2000 - SNS Pre-Operations Review
 - December 12-13, 2000 - Tokamak Fusion Test Reactor (TFTR) Decontamination and Decommissioning (D&D) Review
 - February 13-15 --Gamma-ray Large Area Space Telescope (GLAST)—Large Area Telescope (LAT) Review
 - March 20-22 – Review of A Toroidal LHC Apparatus (ATLAS) Detector for the LHC project
 - May 8-10 - LHC - CMS Detector Review
 - May 14-15 - LHC Accelerator Review
 - May 15-17 - Spallation Neutron Source (SNS) Review
 - May 22-24 - Neutrinos at the Main Injector (NuMI) Review
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- June 21 – Booster Application Facility (BAF) Review
- July 24 – TFTR - Decontamination and Decommissioning Review
- July 24-25 – The Stanford Positron Electron Asymmetric Ring 3 (SPEAR3) Review
- August 15-16 – SNS Mini-Review
- September 11-13 – Fermilab NuMI Review

Advanced Scientific Computing Research (ASCR)

The Advanced Scientific Computing Advisory Committee (ASCAC) met twice in FY 2001 (October 31-November 1, 2000 and May 2-3, 2001) to discuss the scientific aspects of advanced scientific computing including the relationship of advanced scientific computing to other scientific disciplines. The ASAC was charged on April 19, 2001, to review two specific topics: ASCR facilities and the computational side of biotechnology. The report from ASCAC is due in February 2002. (www.sc.doe.gov/production/octr/adviscommittee.html)

No other ASCR evaluations were conducted.

Basic Energy Sciences (BES)

The Basic Energy Sciences Advisory Committee (BESAC) met four times in FY 2001 (October 10-11, 2000; December 11, 2000; February 26-27, 2001; and August 2-3, 2001) to review and discuss the status of the Spallation Neutron Source project; the Intense Pulsed Neutron Source and Manuel Lujan Jr. Neutron Scattering Center review; the Linac Coherent Light Source; Nanoscale Science, Engineering and Technology research directions; and the engineering and design of the Nanoscale Science Research Centers. (www.science.doe.gov/production/bes/besac/Meetings.html)

- BESAC issued a report — “Report of the Basic Energy Sciences Advisory Committee Subpanel Review of the Intense Pulsed Neutron Source (IPNS) at Argonne National Laboratory and the Manuel Lujan Jr. Neutron Scattering Center at Los Alamos National Laboratory (LANSCE/Lujan Center)” (February 2001) — which recommended immediate enhancement of activities at the IPNS and restructuring of the LANSCE/Lujan Center. (www.science.doe.gov/production/bes/BESAC/IPNS-Lujan%20Rpt.pdf)
- Office of Science and Technology Policy (OSTP) Interagency Working Group on Neutron Science met three times in FY 2001 to review the U. S. capabilities in neutron scattering. A report is due in FY 2002. (www.science.doe.gov/production/bes/BESAC/BESACGallagher08-02-01.ppt)

Biological and Environmental Research (BER)

The Biological and Environmental Research Advisory Committee (BERAC) or its subcommittees met a number of times in FY 2001 to discuss the US Global Change Research Program (USGCRP) and BER climate and atmospheric sciences research, and BER life sciences research. (www.er.doe.gov/production/ober/berac/Minutes.html) The following BER reviews were conducted by BERAC:

- October 2000 — “NABIR Subcommittee Report on the Bacterial Transport Element” part of an ongoing BERAC review of the Natural and Accelerated Bioremediation Research (NABIR) program, the Bacterial Transport Element of the NABIR program was reviewed on October 10-11, 2000, by a BERAC working group. The report addressed the relevance, impact, uniqueness, connectivity to other elements of the NABIR program, and technical quality of the Bacterial Transport Element. The report concluded that the re-
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search is first rate and on track to provide definitive information on three-dimensional microbial transport in sandy sediments and it is time to converge this element with the NABIR program goals and DOE site needs. (www.lbl.gov/NABIR/researchprogram/nabirberac/beracreports/Oyster.pdf)

- March 2001 —“Review of The Global Change and Related Environmental Program” On March 26 and 27, 2001, the Global Change Research Subcommittee of BERAC met to review BER global change and related environmental program. The overall assessment of the DOE/BER’s contribution to the Nation’s USGCRP is that it is fulfilling a unique niche and important role in the overall objectives of the Program. (www.sc.doe.gov/production/ober/berac/GCreport.html)
- March 2001 —“Biological and Environmental Research Portfolio” an assessment of the current state of the Office of Biological and Environmental Research (BER) portfolio, including its recent accomplishments and potential. The report found that BER continues to fund cutting edge, high quality, peer-reviewed science that is highly relevant to DOE missions and also supports advances that are of broad importance to the health and well being of our Nation’s citizens in a manner that is very complementary to that of the National Institutes of Health (NIH) and the National Science Foundation (NSF). (www.sc.doe.gov/production/ober/berac/State/20of/20BER.pdf)
- June 2001 —“NABIR Bioremediation And its Societal Implications and Concerns (BASIC) Research Program” part of an ongoing BERAC review of the Natural and Accelerated Bioremediation Research (NABIR) program. The report the found that the general principles being addressed are appropriate but recommends that the current set of topics addressed by the BASIC program be re-examined, based on the refocusing of NABIR scientific research on immobilization and, to identify the relevant regulatory and societal issues. (www.lbl.gov/NABIR/researchprogram/nabirberac/beracreports/BASIC/20_rpt/208.01.pdf)
- June 2001 —“NABIR Strategic Plan” part of an ongoing BERAC review of the Natural and Accelerated Bioremediation Research (NABIR) program. The report found that the proposed focus is appropriate and should be a priority basic research goal for DOE, given the direction of the agency in waste management. The committee suggested changes in goals, deliverables and research focus that address the broader scientific impact of NABIR research. (www.lbl.gov/NABIR/researchprogram/nabirberac/beracreports/StrategicPlan_rpt/208.2.pdf)

The following BER review was conducted by JASON (an independent group of physicists and engineers run by Mitre Corporation):

- Summer 2001 - JASON Review of Atmospheric Radiation Measurement (ARM) Program (Report pending).

Fusion Energy Sciences (FES)

The Fusion Energy Sciences Advisory Committee (FESAC) met four times in FY 2001 (November 14-15, 2000, February 27-28, 2001, May 15-16, 2001, August 1-2, 2001) to discuss progress and plans in fusion energy sciences research and facilities, contributions to the National Energy Policy, and the status of the international fusion project ITER (www.ofe.er.doe.gov/More_HTML/FESAC_Charges_Reports.html).

The following FESAC reviews were conducted in FY 2001:

- June 2001– the “Evaluation of the National Compact Stellarator Experiment (NCSX)” was undertaken to investigate the potential of a Proof-of-Principle Experiment. The panel recommended the NCSX as an exciting opportunity in fusion research but cautioned that the associated budget plans must represent program balance within available program resources. (www.ofes.science.doe.gov/More_HTML/FESAC/HazeltineJune7.pdf)
- August 2001 – the “Review of the Fusion Theory and Computing Program” was undertaken for the purpose of addressing questions from the Department of Energy concerning the theory and computing/simulation (T/C) program. The final report includes findings and recommendations about program structure, balance, community governance, and management of the Fusion Theory and Computing program. (www.ofes.science.doe.gov/More_HTML/FESAC/FINALReportTheory.pdf)
- September 2001 – the “Review of Burning Plasma Physics Report” was undertaken to investigate the potential of burning plasma science. The panel believes that the scientific information is now in hand to determine the most suitable burning plasma experiment for the U.S. program and suggested a course of action to deliver an optimal burning plasma experimental plan to the nation no later than July 2004. (www.ofes.science.doe.gov/More_HTML/FESAC/BurningPlasma.pdf)

High Energy Physics (HEP)

The High Energy Physics Advisory Panel (HEPAP) met three times in FY 2001 (October 30-31, 2000, July 13-14, 2001, and March 26-27, 2001) to discuss the status of research in the DOE-SC and NSF high energy physics programs, and facilities, and U.S participation in the Large Hadron Collider in Europe (doe-hep.hep.net/hepap_general.html).

The following HEPAP reviews were conducted in FY 2001:

- October 2000 – the “HEPAP White Paper on Planning for U.S. High-Energy Physics” provides an assessment of where we stand, states the next steps to take in the intermediate term, and serves as input for a longer range planning process involving a new high-energy physics community evaluation in 2001. (doe-hep.hep.net/whiteppr1000.pdf)
 - Spring 2001 — “DOE/NSF High-Energy Physics Advisory Panel Subpanel On Long Range Planning For U.S. High-Energy Physics”. Through the spring and summer of 2001, the HEPAP Subpanel listened widely to community input and developed a twenty-year road map for the field of particle physics. A report was published in FY 2002.
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Nuclear Physics (NP)

The Nuclear Science Advisory Committee (NSAC) met two times in FY 2001, Jan 29-30, 2001, and July 23-24, 2001) to discuss planning activities and the status of research and facilities (www.er.doe.gov/production/henp/np/nsac/nsac.html).

The following NSAC reviews were conducted in FY 2001:

- July 2000 – January 2002 — “Nuclear Science Advisory Committee (NSAC) Long Range Plan Working Group”. NSAC, in cooperation with the Division of Nuclear Physics of the American Physical Society, is presently preparing a Long Range Plan for Nuclear Physics Research. A report is due in FY 2002. (www.er.doe.gov/production/henp/np/nsac/whtpaper.html)
 - August – November, 2001 — “NSAC Subcommittee on Low Energy Nuclear Physics Review” to review and evaluate the scientific opportunities and priorities within the DOE-SC Low Energy Physics program. The subcommittee found that the program is carrying out an outstanding program of high impact science with exciting directions for the future. Funding and program balance issues were also addressed. (www.phy.ornl.gov/NSAC-2001.pdf)
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GPRA Activity: High Energy Physics and Nuclear Physics

Annual Performance Plan GPRA Program Activity	DOE Office	Financial Statement Footnote	Program Element In Schedule Net Costs	NET COSTS (\$M)		
				FY 01	FY 00	FY 99
High Energy Physics	SC	21	High Energy Physics	\$700	\$675	\$677
Nuclear Physics	SC	21	Nuclear Physics	\$391	\$379	\$327

Description: High Energy Physics (HEP) and Nuclear Physics (NP) programs support basic research that provides new insights into the nature of energy, and matter and operate large world-class scientific facilities for the Nation. High Energy and Nuclear Physics research is conducted by over 3,000 researchers and over 1,000 graduate students from over 100 universities and the National Laboratories. The research programs supported by the HEP and NP are kept relevant and outstanding through: independent technical peer evaluations; the High Energy Physics Advisory Panel, and the Nuclear Science Advisory Committee (NSAC); program evaluations; and research needs of the universities, National Laboratories and international collaborators.

Advancing Our Understanding Of The Nature Of Matter And Energy (SC 3-1)

In the area of theoretical research, subject new experimental findings to thorough analysis and interpretation. Synthesize new and existing results into an overall coherent view of nature, developing new analytical structures as necessary. Identify key questions to be resolved by experiment; and in the area of experimental research, put our theoretical understanding of elementary particles and forces to rigorous experimental tests. Search for any new sub-atomic particles or interactions that may exist. Investigate astrophysical phenomena, using the knowledge and techniques of high-energy physics.

Conduct a research program of maximum effectiveness at the cutting edge of all major scientific

areas in nuclear physics that will lead to new knowledge and insights on the nature of energy and subatomic matter. The Office of Science plans to initiate a scientific program using polarized protons within the Relativistic Heavy Ion Collider (RHIC), and a research program using the Bates Large Acceptance Spectrometer Toroid (BLAST) detector at the MIT/Bates Laboratory. (Met Goal)

FY 2001 Targets and Results:

Target: Respond to the priorities and recommendations contained in the long range plan of the DOE/NSF Nuclear Science Advisory Committee (NSAC) on the Department's Nuclear Physics program.

Result: This goal has been accomplished by the successful development and completion of the initial programs at the new facili-

ties at the Thomas Jefferson National Accelerator Facility (TJNAF), the Holifield Radioactive Ion Beam Facility/Oak Ridge National Laboratory (HRIBF/ORNL), at the Argonne Tandem-Linear Accelerator System/Argonne National Laboratory (ATLAS/ANL) and the 88-Inch Cyclotron/Lawrence Berkeley National Laboratory (LBNL) with the Gammaphase detector. New construction and fabrication projects have also been very successfully completed. The Relativistic Heavy Ion Collider (RHIC) at Brookhaven National Laboratory (BNL) has met its goals for luminosity growth and over 12 scientific papers were published following the first data run in FY 2000. Successful commissioning of polarized protons at RHIC began in FY 2000 and will continue in FY 2002. The Massachusetts Institute of Technology (MIT)/Bates facility successfully commissioned the South Hall Ring and completed fabrication of the BLAST detector in FY 2001.

FY 2000 Targets and Assessments:

Advance knowledge from experiments at the Relativistic Heavy Ion Collider to see possible evidence of the predicted quark-gluon plasma; a high-temperature, high-density state of nuclear matter that may have existed a millionth of a second after the "Big Bang." (Met Goal)

FY 1999 Targets and Assessments:

Complete construction and begin operation of the Relativistic Heavy Ion Collider at Brookhaven National Laboratory. (Met Goal)

Providing Extraordinary Scientific Tools, Workforce, And Infrastructure (SC 4-1)

Build new and/or modernize existing accelerator facilities as needed in the United States to advance physics and take a substantial role in building facilities if the scope demands an international effort. Progress in high-energy physics will require an ever-increasing experimental capability. Accelerator beams must increase in energy, intensity and quality; detectors must improve in scope, resolution, and data recording rates, and in the ability to selectively identify events of interest. These preparations include modifications to existing accelerators and detectors, research and development aimed at possible new technologies, and the application of existing technologies to improve beams and detectors. Improvements are needed in the ability to store, transfer and analyze increasing amounts of data. International collaborations must share access to these huge data sets.

Conceive, develop, construct, and operate the scientific accelerator, detector and computing facilities necessary to address forefront science in a timely and effective manner. In the execution of this responsibility, together with other Office of Science organizations, act as the Nation's leader in developing management techniques to optimize construction and operation of facilities in a cost-effective, safe, and environmentally responsible manner. Continue the advanced education and training activities of young

scientists to develop the new skills and concepts that will become the underpinnings of the Nation's broad array of nuclear-related sciences and technologies in the future. Manage the operations of the Nuclear Physics program to high standards by ensuring that the processes of planning, reviewing, selecting and managing science projects and programs are sound and based on peer review and merit evaluation, and reflect input from the Nuclear Science Advisory Committee (NSAC) in coordinating DOE and National Science Foundation activities. (Nearly Met Goal)

FY 2001 Targets and Results:

Target: Meet the Department's scheduled commitments to be on time and within budget with respect to the international Large Hadron Collider project as reflected in the latest international agreement and corresponding plan.

Result: Large Hadron Collider — the U.S. DOE met the goals for its commitments to the Large Hadron Collider project for the reporting period ending September 30, 2001. U.S. contributions to ATLAS and CMS are approximately 60 percent complete, based on cost, and the U.S. contribution to the LHC machine is approximately 68 percent complete, based on cost.

Target: Continue construction of the Neutrinos at the Main Injector (NuMI) project meeting milestones as detailed in the benchmark plan.

Result: NuMI progress is below expectations for the reporting period ending September 30, 2001. Of the six milestones for FY 2001, five were accomplished at an average of 2 months behind schedule, and one milestone is estimated to be 10 months behind schedule. Excavation of the far-detector cavern at Soudan, Minnesota concluded 3 months late. At Fermilab, refurbishment of

magnets for the neutrino beam line was completed on schedule. Underground construction at Fermilab reached 50 percent completion, 5 months behind schedule.

Plan of Action: Costs for the project have increased. Initial cost estimates did not reflect the competitive construction economy in the Chicago area, necessitating a rebid process leading to a delay of about six months. This, coupled with the increased cost for technical components of the beam line, largely associated with shielding and installation, is the cause for the increased costs and delays. For these reasons, Fermilab proposed that the project be rebaselined for the FY 2003 budget cycle to restore cost and schedule contingency. A May 2001 Review Committee concurred in the project management decision to re-baseline the project in connection with the FY 2003 budget cycle, but the committee did not endorse the cost estimate and schedule that were presented.

Target: Complete fabrication of the BLAST detector at MIT/Bates in accordance with the project milestones.

Result: The fabrication of the BLAST detector at the MIT/Bates Linear Accelerator was completed on schedule by October 1, 2001, within the \$5.2 million total estimated cost. The detector is now undergoing integration within the South Hall Ring at Bates, with commissioning to begin Spring 2002.

FY 2000 Targets and Assessments:

(1) Operate the B-factory at the Stanford Linear Accelerator Center, the Main Injector for the Tevatron at Fermilab, the Thomas Jefferson National Accelerator Facility, and the Relativistic Heavy Ion Collider at Brookhaven National Laboratory, and deliver on the Department's FY 2000 commitments to the international Large Hadron Collider project. (Met Goal)

(2) Move the newly-upgraded D-Zero and CDF detectors at Fermilab into position in the Main Injector tunnel and begin commissioning in the third quarter of the fiscal year. (Nearly Met Goal)

Plan of Action: The Office of Science has developed extensive plans specific to each detector to adjust to any possible, last-minute delays, virtually assuring a successful start-up of Run II on the present schedule of March 2001. In the case of D-Zero, the plan calls for the installation of a partial Silicon Tracker system, if necessary to hold the schedule, which would be augmented during a Collider shutdown at a later date. This scenario would allow the D-Zero detector to be efficiently commissioned, although full physics capability would be delayed by up to six months. In FY 2001, successful start-up of Run II and installation of the Silicon Tracker system were successfully completed.

(3) Further the progress on achieving luminosity and operational efficiency for the Tevatron at Fermilab in its new mode of operation with the recently completed Main Injector. (Met Goal)

(4) Continue collaborative efforts with NASA on space science and exploration. (Met Goal)

FY 1999 Targets and Assessments:

(1) Deliver on the Department's 1999 commitments to the international Large Hadron Collider project. (Met Goal)

(2) Continue collaborative efforts with NASA on space science and exploration. (Met Goal)

GPRRA Activity: Biological and Environmental Research

Annual Performance Plan GPRRA Program Activity	DOE Office	Financial Statement Footnote	Program Element In Schedule Net Costs	NET COSTS (\$M)		
				FY 01	FY 00	FY 99
Biological & Environmental Research	SC	21	Biological & Environmental Research	\$425	\$397	\$397

Description: The mission of the Biological and Environmental Research (BER) program is to develop the information, scientific “know-how”, and technology for identification, characterization, prediction, and mitigation of adverse health and environmental consequences of energy production, development and use. The research programs supported by the BER program are kept relevant and outstanding through: independent technical peer evaluations; advisory committee reviews; program evaluations; and research needs of DOE programs and the scientific community.

Making Advances In Physical Sciences In Quest For Clean, Affordable And Abundant Energy (SC 1-1)

Utilize the capabilities of the U.S. research community in universities and the DOE national laboratories to provide the basic research foundation for DOE’s mission in energy through targeted investments in life, environmental and medical sciences, and related disciplines. Provide new knowledge about microbes which will expand DOE’s options for clean and affordable energy through research in microbial genomics and bioinformatics. Advance understanding of key uncertainties and find solutions for the effects of energy production and use on the environment through research in carbon cycle and carbon sequestration. (Met Goal)

FY 2001 Results:

In FY 2001, BER used and supported the scientific capabilities through a balanced research portfolio at universities, research institutions, and small businesses (32 percent of funds), national laboratories (36 percent of funds), user facilities (11 percent of funds), and through enabling research and infrastructure support (21 percent of funds). BER research investments are improving understanding of the responses of different ecosystems to elevated CO₂ — 1) growth of invasive grasses is stimulated more than native species in the southwestern U.S.; 2) diverse plant communities respond more favorably to elevated CO₂ than less diverse communities in the northern U.S.; and 3) southeastern U.S. loblolly pines mature more quickly in response to elevated CO₂. BER expertise in genomics and microbial research is beginning to pay off with the genomic sequencing and initial characterization of microbes involved in global carbon sequestration

or clean energy production. Also, BER scientists successfully completed the planning and development of a new basic research program — Genomes to Life — that will underpin the development of biotechnology solutions for DOE mission needs, including clean energy and carbon sequestration.

FY 2000 Targets and Assessments:

No performance targets were established for this goal in FY 2000

FY 1999 Targets and Assessments:

No performance targets were established for this goal in FY 1999

Developing Science Foundations To Protect Our Living Planet (SC 2-1)

Utilize the capabilities of the U.S. research community in universities and the DOE national laboratories to provide the basic research foundation for the Department's mission in the environment through targeted investments in life, environmental and medical sciences, and related disciplines. Advance our understanding of key uncertainties and find solutions for the effects of energy production and use on the environment through research in global climate modeling and simulation, the role of clouds in climate change, carbon cycle and carbon sequestration, atmospheric chemistry, and ecological science. Help protect the health of DOE workers and the public by advancing our understanding of the health effects of energy production and use through basic research in key areas of the life sciences including functional genomics and structural bi-

ology, as well as low-dose radiation research. Contribute to the environmental remediation and restoration of contaminated environments at DOE sites through basic research in bioremediation, microbial genomics, and ecological science. (Met Goal)

FY 2001 Targets and Results:

Target: Complete the genetic sequencing of at least two additional microbes that produce methane or hydrogen from carbonaceous sources, or that could be used to sequester carbon.

Result: During FY 2001, the complete or draft DNA sequences of the following microbes were determined: *Chlorobium tepidum* (completed, carbon sequestration), *Prochlorococcus marinus* (completed, carbon sequestration), *Rhodopseudomonas palustris* (completed, carbon sequestration and hydrogen production), *Nostoc punctiforme* (drafted, carbon sequestration and hydrogen production), *Nitrosomonas europaea* (drafted, carbon sequestration), *Chloroflexus aurantiacus* (drafted, carbon sequestration), and *Methanosarcina barkeri fusaro* (drafted, methane production).

Target: Complete field site characterization and start the subsurface research at the Field Research Center (FRC), established at Oak Ridge National Laboratory for the Natural and Accelerated Bioremediation Research (NABIR), to provide the fundamental knowledge for development of bioremediation methodologies for containment and clean up of hazardous materials.

Result: The target was met, phase 2 of the site characterization activities for both the contaminated and background sites at the FRC have been completed in accordance with the NABIR FRC Characterization Plan. Completed activities in Areas 1, 2 and 3 of the

contaminated site include installation of new characterization boreholes/wells, groundwater sampling, hydraulic testing, pumping and gradient tracer testing, and some geophysical surveying.

FY 2000 Targets and Assessments:

Complete site characterization of the first Natural and Accelerated Bioremediation Research Field Research Center, and commence activities necessary to enable sample collection and distribution to investigators. (Nearly Met Goal)

Plan of Action: As a result of the changes made late in FY 2000, samples will be provided to NABIR investigators during the initial months of FY 2001 for analyses. The results of these analyses will provide baseline characterization information for the field site and, at the same time, will be of use to investigators in their individual projects.

FY 1999 Targets and Assessments:

Initiate a new joint Biological and Environmental Research and Basic Energy Sciences program in fundamental science that will underpin new opportunities and technologies in carbon capture. (Exceeded Goal)

Advancing Our Understanding Of The Nature Of Matter And Energy (SC 3-1)

Advance our understanding of the key building blocks of life through basic research in functional genomics and structural biology. (Met Goal)

FY 2001 Targets and Results:

Target: By the end of FY 2001, the DOE Joint Genome Institute (JGI) will complete the sequencing and submission to public databases of 100 million finished and 250 million high-quality, draft base pairs of DNA, including both human and mouse.

Result: BER exceeded its FY 2001 DNA sequencing goals. To date, the Joint Genome Institute has determined a total of 326.84 million units of high-quality, draft DNA sequence from the human and mouse, and 215.5 million units of the highest quality, finished human and mouse DNA sequence. In FY 2001 alone, the Joint Genome Institute determined a total of 103.95 million units of the highest quality human and mouse DNA sequence, nearly half of their overall highest quality total.

Target: Conduct five Intensive Operations Periods (IOPs) on schedule at the Atmospheric Radiation Measurement (ARM) Southern Plains site. Obtain data from the second station on the North Slope of Alaska, and make operational the third station in the Tropical Western Pacific on Christmas Island on schedule and within budget, in accordance with program plan.

Result: Exceeded Goal - Seven IOPs were completed. Data analysis is complete and available to all researchers. Data from both North Slope stations are available from the ARM Archive. The Tropical Western Pacific ARM site consists of three measurement stations, two of which are fully operational. Installation of the third site is underway, and operations began January 2002.

Target: Complete phase 1 clinical trials of Boron Neutron Capture Therapy (BNCT) at reactor sources of neutrons and begin re-

search on accelerator-based BNCT. This research will provide the basis for evaluating the efficacy of BNCT, and for designing phase II clinical trials that include reactor and accelerator-based sources of neutrons.

Result: Met Goal - Manuscript describing results is in preparation for publication.

FY 2000 Targets and Assessments:

- (1) Complete the sequencing of 50 million subunits of human DNA and submit to publicly-accessible databases in FY 2000. (Exceeded Goal)
- (2) Complete the genetic sequencing of over 10 additional microbes with significant potential for waste cleanup and energy production. (Met Goal)
- (3) Continue Atmospheric Radiation Measurement (ARM) accomplishments by conducting five Intensive Operations Periods (IOPs) at the ARM Southern Great Plains site. Obtain data from the second station on the North Slope of Alaska and make operational the third station in the Tropical Western Pacific on Christmas Island. (Met Goal)
- (4) Proceed on the development of the next generation coupled ocean-atmosphere climate model, leading to better information for assessing climate change and variability at regional, rather than global scales. This next generation model will change grid size from the current 300 to 500 kilometers on a side to less than 200 kilometers on a side. (Met Goal)
- (5) In cooperation with NASA, NSF, USDA/Forest Service, and the Smithsonian Institution, provide quantitative data on the annual exchange of carbon dioxide between the atmosphere and terrestrial ecosystem from 25 AmeriFlux sites representing major types of ecosystem and land uses in North and Central America. Provide data on environmental factors, such as climate variation on

the net sequestration or release of carbon dioxide and the role of biophysical processes controlling the net exchange. (Met Goal)

FY 1999 Targets and Assessments:

- (1) Complete sequencing of 30 million subunits and draft sequence of 30 million additional subunits of human DNA for submission to publicly-accessible databases. (Nearly Met Goal)
- (2) Determine 70 percent of the DNA sequence of 10 additional microbes with potential use in waste cleanup or energy production. (Exceeded Goal)
- (3) Complete the initial SC/EM Pilot Collaborative Research Program and, in cooperation with EM, initiate development of the most promising cleanup technologies arising from these projects. (Below Expectation)
- (4) Conduct, with at least 25 to 30 patients, Boron Neutron Capture Therapy (BNCT) Research Phase I/II clinical trials at reactor sources with neutrons. (Below Expectation)

Providing Extraordinary Scientific Tools, Workforce, And Infrastructure (SC 4-1)

Ensure the greatest return on public investments by utilizing the unique capabilities of the DOE laboratories to advance the life and environmental sciences, advanced imaging, and medical applications of basic research. Through stewardship of these capabilities, ensure that DOE has the scientific base to meet its technologically challenging missions. (Met Goal)

FY 2001 Targets and Results:

Result: A combined microscope developed by scientists at the William R. Wiley Environmental Molecular Sciences Laboratory (EMSL) pairs important tools of cellular research — optical, or confocal, microscopy (OM) and magnetic resonance microscopy (MRM). With combined OM/MRM microscopy, live cells and cellular changes such as the transformation from healthy to tumor cells or the effects of radiation and chemical treatment can be studied simultaneously with both techniques in real time; therefore, this combined microscope is considerably more powerful than each of the techniques individually.

Result: Researchers at ORNL and UC Berkeley have developed a very sensitive microcantilever instrument for detecting the protein marker for prostate cancer, or prostate specific antigen (PSA), found at elevated levels in the blood of men with prostate can-

cer. When the cancer protein molecules bind to the surface of the microcantilever, which are 50 microns wide (half the width of a human hair), the cantilever bends about 10 to 20 nanometers

– the diameter of 100 to 200 hydrogen atoms. A sensitive laser detects and measures the minute movement of the cantilever, thus signaling the presences of increased levels of PSA.

FY 2000 Targets and Assessments:

No targets were established for this goal in FY 2000.

FY 1999 Targets and Assessments:

No targets were established for this goal in FY 1999.

GPRA Activity: Basic Energy Sciences

Annual Performance Plan GPRA Program Activity	DOE Office	Financial Statement Footnote	Program Element In Schedule Net Costs	NET COSTS (\$M)		
				FY 01	FY 00	FY 99
Basic Energy Sciences	SC	21	Basic Energy Sciences	\$685	\$665	\$670

Description: The Basic Energy Sciences (BES) program fosters and supports fundamental research in the natural sciences and engineering to provide a basis for new and improved energy technologies and for understanding and mitigating the environmental impacts of energy use. As part of its activities, BES plans, constructs, and operates major scientific user facilities to serve researchers at universities, national laboratories, and industrial laboratories. The research programs supported by the BES program are kept relevant and outstanding through: independent technical peer evaluations; advisory committee reviews; program evaluations; and the research needs of DOE programs and the scientific community.

Making Advances In Physical Sciences In Quest For Clean, Affordable And Abundant Energy (SC 1-1)

Foster and support world-class, peer-reviewed research in the scientific disciplines encompassed by the BES mission areas, cognizant of DOE needs as well as the needs of the broad national science agenda. Provide national and international leadership in select areas of materials sciences and engineering, chemical sciences, biosciences, and geosciences. (Met Goal)

FY 2001 Results:

The BES program continues as one of the Nation's largest sponsors of fundamental research in the

natural sciences and is uniquely responsible for supporting research impacting energy resources, production, conversion, efficiency, and the mitigation of the adverse impacts of energy production and use. BES gathers and maintains records of annual research accomplishments with technology impacts and awards and recognition resulting from the thousands of research projects supported by the program. These results are openly communicated on the internet, at meetings, in publications, and are highlighted in the BES section of the President's Budget Request to Congress.

The draft human DNA sequence was published in the February 15/16, 2001 issues of the journals *Nature* and *Science*. DOE initiated this monumental research project, sequenced human chromosomes 5, 16, and 19, and contributed many of the fundamental; and the DOE's Joint Genome Institute, together with its international partners, determined more than 90-percent of

the Fugu genome sequence and made it available in an accessible database.

FY 2001 Targets and Results:

Target: Use expert advisory committees and rigorous peer review committees to ascertain that the research performed by investigators in universities and DOE laboratories is focused and outstanding. An additional indicator of the success of our scientific research will be the recognition through the awards received by our researchers and by the broader scientific community.

Result: In FY 2001, 98.5 percent of BES-supported activities were competitively reviewed. All new research projects were competitively selected and peer-reviewed, and approximately 30 percent of ongoing projects received peer review during FY 2001 by external experts using guidelines defined in 10 CFR 605 for the university projects, and similar guidelines which have been established by BES for the laboratory projects. (All ongoing projects receive external peer review at least once every 3 to 4 years). The Basic Energy Sciences Advisory Committee met four times in FY 2001 to review numerous aspects of the BES facility and research portfolio (agendas available on the internet).

FY 2000 Targets and Assessments:

No performance targets were established in FY 2000.

FY 1999 Targets and Assessments:

No performance targets were established in FY 1999.

Advancing Our Understanding Of The Nature Of Matter And Energy (SC 3-1)

Establish and steward stable, essential research communities and institutions, particularly those for which BES is the Nation's primary or sole support. (Met Goal)

FY 2001 Results:

In FY 2001, the program office funded research in more than 150 academic institutions located in 48 states and in 13 DOE laboratories located in nine states. Activities supported by the BES program are a significant part of the national research effort, providing particular strength to the Nation's science enterprise in the physical sciences and in facilities planning, construction and operation. The BES program stewards important research communities and institutions in order to respond quickly and appropriately to scientific opportunity and mission need. Participation by students, postdoctoral research associates, and young faculty and staff is continued and imperative to ensure continuation and intellectual growth of the research communities.

FY 2000 Targets and Assessments:

No performance targets were established in FY 2000.

FY 1999 Targets and Assessments:

No performance targets were established in FY 1999.

Providing Extraordinary Scientific Tools, Workforce, And Infrastructure (SC 4-1)

Plan, construct, and operate premier national scientific user facilities for materials research and related disciplines to serve researchers at universities, national laboratories, and industrial laboratories. Operate facilities to the highest standards for scientific productivity, efficiency, user needs, and safety. Continue the advanced education and training activities of young scientists to maintain and renew research communities and institutions. Manage the operations of the BES program to high standards by ensuring that the processes for planning, reviewing, selecting, and managing science projects and programs are sound and based on peer review and merit evaluation. As part of this goal BES is improving U.S. research in neutron science in preparation for the commissioning of the Spallation Neutron Science by ensuring that neutron science facilities are optimally available to the scientific community, and by investing in instrumentation for the future. The Office of Science is also continuing the new directions in the areas of nanoscale science, engineering, and technology research, and is exploring concepts and designs for Nanoscale Science Research Centers. (Met Goal)

FY 2001 Targets and Results:

The BES program supports world-class scientific user facilities, providing outstanding capabilities for imaging and characterizing materials of all kinds from metals, alloys, and ceramics, to fragile biological specimens and crystals. There were 8,294 researchers from universities, national laboratories, and industrial laboratories performing experiments at these facilities in FY 2001. BES is the major supporter of x-ray and neutron science in the United States and has pioneered the development of virtually all of the instruments and techniques used at these facilities

for research in materials sciences, surface science, condensed matter physics, atomic and molecular physics, chemical dynamics, x-ray microscopy, tomography, femtosecond phenomena, interfacial/environmental, and geophysics studies. Within the physical sciences, BES remains the dominant federal supporter of beamline development and instrument fabrication providing as much as 85 percent of the federal support for these activities.

Target: Maintain and operate the scientific user facilities so that the unscheduled downtime on average is less than 10 percent of the total scheduled operating time.

Result: The seven major BES user facilities operated on average 96.1 percent of their scheduled operating time in FY 2001. The operating hours (actual/scheduled) for the facilities were: National Synchrotron Light Source (5,556/5,556), Stanford Synchrotron Radiation Laboratory (4,539/4,781), Advanced Light Source (5,261/5,468), Advanced Photon Source (4,788/5,000), High Flux Isotope Reactor (8/8), Intense Pulsed Neutron Source (3,968/3,868), Los Alamos Neutron Science Center (2,364/2,882). The three BES FY 2001 major ongoing enhancements and maintenance activities of existing synchrotron radiation light sources and neutron scattering sources are on cost and schedule. The projects are (1) SPEAR3 upgrades at SSRL; 50 percent in FY 2001, (2) improvements at HFIR, such as the HB-2 Beam Tube Extension, undertaken during an extended reactor outage in FY 2001 for the regularly scheduled (approximately every decade) replacement of the beryllium reflector, and (3) a new beam line at the Advanced Light Source at Lawrence Berkeley National Laboratory. Each Office of Science construction project undergoes regular technical, cost, schedule and management peer reviews, which are independently conducted by the Office of Engineering and Construction Management.

Target: Meet the cost and schedule milestones for upgrade and construction of scientific user facilities, including the construction of the Spallation Neutron Source.

Result: The Spallation Neutron Source construction, project number 99-E-334, was 33.3 percent complete at the end of FY 2001 (versus a scheduled completion of 35.3 percent), and is within cost targets.

Target: Complete the milestones listed in the corrective action plan for the Departmental challenge of managing physical assets (FMFIA) Note: This measure cuts across all Science activities.

Result: The Department identified "Managing Physical Assets" as a Departmental Challenge in FY 2000. The Department risks not being able to meet existing mission objectives if the condition and functionality of its facilities are not adequately addressed. During FY 2001, the Office of Science initiated steps to identify modernization needs. The office requested each laboratory to prepare a Strategic Facilities Plan to identify their expected general purpose infrastructure modernization needs for FY 2002 to 2011. A summary report based on these plans was issued in April 2001. The report indicates a sizeable backlog of unfunded capital needs. The Office of Science has prepared an infrastructure budget initiative for FY 2003 consistent with expected Congressional language in the FY 2002 budget. It will cover all SC laboratories and excess facilities needs. The completion of a five-year program plan for addressing infrastructure modernization needs has been delayed to February 2002 and will support the FY 2003 budget request to Congress.

FY 2000 Targets and Assessments:

(1) Maintain the high quality and relevance of DOE's science as evaluated by annual

peer reviews and advisory committees. (Met Goal)

(2) Maintain and operate scientific user facilities to serve thousands of researchers from universities, national laboratories, and industry such that the unscheduled downtime is less than 10 percent of the total scheduled possible operating time on average. (Met Goal)

(3) Continue construction of the Spallation Neutron Source, meeting costs and timetables as contained in the Critical Decision II agreement, to provide beams of neutrons used to probe and understand the physical, chemical, and biological properties of materials at an atomic level leading to better fibers, plastics, catalysts, and magnets and improvements in pharmaceuticals, computing equipment, and electric motors. (Met Goal)

(4) Meet the cost and schedule milestones for upgrade and construction of scientific facilities. (Met Goal)

(5) Continue Partnerships for Academic-Industrial Research where peer-reviewed grants are awarded to university researchers for fundamental, high-risk work jointly defined by the academic and industrial research partners. (Met Goal)

(6) Continue fabrication of instrumentation for the short-pulse spallation source at the Manuel Lujan, Jr. Neutron Scattering Center at the Los Alamos Neutron Science Center. (Met Goal)

FY 1999 Targets and Assessments:

Begin Title I design activities, initiate subcontracts and long-lead procurements, and continue research and development work necessary to begin construction activities of the Spallation Neutron Source. (Met Goal)

GPRA Activity: Advanced Scientific Computing Research

Annual Performance Plan GPRA Program Activity	DOE Office	Financial Statement Footnote	Program Element In Schedule Net Costs	NET COSTS (\$M)		
				FY 01	FY 00	FY 99
Advanced Scientific Computing Research	SC	21	Advanced Scientific Computing	\$122	\$137	\$144

Description: The Advanced Scientific Computing Research (ASCR) program supports research in forefront and diverse applied mathematical sciences, high-performance computing, communications, and information infrastructure which spans the spectrum of activities from strategic, longer-term, fundamental research to technology research, development, and demonstration. It links SC's science programs and laboratories to national economic competitiveness by conducting long-term, high-risk, industry-relevant research and development projects in critical technology areas.

Making Advances In Physical Sciences In The Quest For Clean, Affordable And Abundant Energy (SC 1-1)

Promote the transfer of advanced scientific computing research results to DOE missions in areas such as the improved use of fossil fuels, the atmospheric and environmental impacts of energy production and use, and future energy sources. (Met Goal)

FY 2001 Targets and Results:

In FY 2001 ASCR, based on peer-reviewed proposals, established seven Integrated Software Infrastructure Centers whose mission is to transfer advanced scientific computing research to scientific disciplines that are important to DOE missions.

FY 2000 Targets and Assessments:

No performance targets were established in FY 2000.

FY 1999 Targets and Assessments:

No performance targets were established in FY 1999.

Providing Extraordinary Scientific Tools, Workforce And Infrastructure (SC 4-1)

Foster research to support national laboratories, and to create new fundamental knowledge in areas of advanced computing research important to the Department, for example high-performance computing, high-speed networks, and software to enable scientists to make effective use of the highest performance computers available. Network enhancements are being made at National Energy Research Scientific Computing Center (NERSC) and Energy Science Network (ESnet) to improve researchers' access to high-performance computing and software support, and enhance scientific opportunities by enabling scientists to access and understand greater amounts of scientific data. The Office of Science is also serving researchers at national laboratories, universities, and in the industry, by enabling new understanding through analysis, modeling, and simulation of complex natural and engineered systems and effective integration of geographically distributed teams through national laboratories. (Exceeded Goal)

FY 2001 Targets and Results:

Target: Conduct regular peer review and merit evaluation based on regulatory requirements for grants and cooperative agreements, with all research projects reviewed at least once and no project extending more than four years without review.

Result: 96 percent of SC's research grants are peer-reviewed and competitively selected, ensuring that the best research performers are chosen.

Target: Review and select, through rigorous peer review for Phase II funding, 80 Small Business Innovation Research (SBIR) projects determined to be of the highest quality, and to satisfy proof of concept under Phase I funding. In a separate competition, select 200 new SBIR proposals for Phase I funding.

Result: On May 25, 2001, 98 Small Business Innovation Research (SBIR) projects that were determined to be of the highest quality were selected for Phase II funding. On June 20, 2001, 213 new SBIR proposals were selected for Phase I funding.

Target: Operate facilities, including the NERSC and ESnet, within budget while meeting user needs and satisfying overall SC program requirements where, specifically, NERSC will deliver 3.6 teraflop capability by the end of FY 2001 to support DOE's science mission.

Result: The IBM SP upgrade at NERSC is in final acceptance testing which will be completed by mid-July 2001. This computer will deliver a peak performance of 5 teraflops or 40 percent more than the target of 3.8 teraflops.

Target: Expand and increase access to published and pre-printed scientific and technical information via cost-effective, specialized information retrieval systems resulting in a 25 percent increase in users served.

Result: In FY 2001, 5.9 million scientific and technical information customer transactions were accommodated via DOE's access and dissemination web sites. The baseline total for FY 2000 was 3.4 million customer transactions. The 25 percent increase projected for FY 2001 established a target of 4.25 million. The actual 5.9 million transac-

tions as of the end of the fiscal year surpasses 2000 baseline by 74 percent and exceeds the 2001 target by 39 percent.

Target: Support the Computational Science Graduate Fellowship (CSGF) Program with the successful appointment of ten new students to support the next generation of leaders in computational science for DOE and the Nation.

Result: In July, 2001, the CSGF announced the appointment of 24 new fellows, exceeding the target of 20 new fellows.

FY 2000 Targets and Assessments:

(1) Develop advanced computing capabilities, computational algorithms, models, methods, and libraries, and advanced visualization and data management systems to enable new computing applications to science. (Met Goal)

(2) Continue to fabricate, assemble, and operate premier supercomputer and networking facilities that serve researchers at national laboratories, universities, and industry-enabling understanding of complex problems and effective integration of geographically distributed teams in national collaborations. (Met Goal)

(3) Review and select for Phase II funding approximately 80 Small Business Innovation Research proposals that satisfy proof-of-concept under Phase I funding. In a separate competition, select about 200 SBIR proposals for Phase I funding. (Met Goal)

(4) Initiate seven Laboratory Technology Research projects that address the Department's top priorities for science and technology through cost-shared research partnerships with industry. (Nearly Met Goal)

Plan of Action: Although the period of performance and the scope of the collaborations are below originally intended levels, in FY 2001, the LTR program plans to ini-

tiate 10 research projects that address the Department's top priorities for science and technology, through cost-shared partnerships with industry, if permitted by the FY 2001 appropriation. (Twelve multi-year Laboratory Technology Research projects were started in FY 2001.)

(5) Meet 75 percent of the requirements of computer facilities and networks users. (Nearly Met Goal)

Plan of Action: In the case of both ESnet and NERSC, the demand for computing capabilities far exceeded what current resources are able to provide. To address this problem, NERSC will continue using peer reviews and focus on the Office of Science's highest priority research to allocate limited resources to achieve optimum scientific output from the facility. ESnet employs a number of innovative network management and contracting procedures to deliver the maximum amount of service for the minimum cost, as previously noted by external review committees.

(6) Increase by 25 percent over FY 1999 the availability of peer-reviewed scientific journal literature, preprints, and reports to DOE and the public through collaborations with publishers, data compilers, exchange partners, and research and development programs using web-based mechanisms. (Exceeded Goal)

(7) Increase visibility and use of energy-related scientific and technical information by government, academia, industry, and the public through electronic web-based products that promote scientific advancement, resulting in 15 percent more customer usage over FY 1999. (Exceeded Goal)

FY 1999 Targets and Assessments:

Provide fundamental research in environmental sciences, biology, molecular sciences, and computational modeling that will underpin the cleanup of contaminated sites. (Met Goal)

GPRA Activity: Fusion Energy Research

Annual Performance Plan GPRA Program Activity	DOE Office	Financial Statement Footnote	Program Element In Schedule Net Costs	NET COSTS (\$M)		
				FY 01	FY 00	FY 99
Fusion Energy Sciences	SC	21	Fusion Energy Sciences	\$263	\$237	\$224

Description: The mission of the U.S. Fusion Energy Science (FES) Program is to advance plasma science, fusion science, and fusion technology. These disciplines are the knowledge base needed for an economically and environmentally attractive fusion energy source. The research programs supported by the Fusion Energy Science program are kept relevant and outstanding through: independent technical peer evaluations; advisory committee reviews; program evaluations; and the research needs of DOE programs and the scientific community.

Making Advances In Physical Sciences In Quest For Clean, Affordable And Abundant Energy (SC 1-1)

Deliver excellent research in plasma science, fusion science and fusion technology, cognizant of DOE mission needs as well as the needs of the broad national science agenda. Provide national and international leadership in select areas of plasma science, fusion science, and fusion technology. Be the steward for plasma science, fusion science, and fusion technology at the DOE laboratory complex and research facilities, and for the scientific and technical workforce, providing the infrastructure to meet elements of the Nation's science agenda now and in the future. Ensure that the fusion research program is effectively integrated to produce results that advance the program's mission while working to build effective, mutually beneficial

connections with other fields of science. Enhance the effectiveness of available U.S. funding through mutually beneficial collaborative activities with fusion programs abroad.
(Below Expectations)

FY 2001 Targets and Results:

In FY 2001, the Office of Fusion Energy Science used and supported the broad capabilities of the fusion research community through a balanced research portfolio at universities (28 percent of funds), national laboratories (51 percent of funds), and industrial firms and small businesses (21 percent of funds), that produced major scientific results over a wide range of activities. A number of significant scientific advances were made in FY 2001 that enabled the program to move toward the development of the ability to predict the plasma behavior under many conditions. Innovations in fusion technologies helped improve the vision of fusion as an attractive energy source.

Target: By June 2001, enter into a new NSF/DOE Partnership in Basic Plasma Science and Engineering to provide continuity after the present agreement ends, and initiate a new element of the U.S.-Japan collaborative program by the end of FY 2001.

Result: The NSF partnership agreement that permits joint solicitation of basic plasma science studies, was signed in February 2002. The new element of the U.S.-Japan program was initiated as planned.

Target: Complete by June 2001 the six MW power upgrade of the DIII-D microwave system and initiate experiments with it to control and sustain plasma current profiles, with the goal of maintaining improved confinement of plasma energy for longer periods of time.

Result: While the completion of the upgrade to the DIII-D microwave power was delayed until March 2002 without additional cost to allow implementation of an innovative fix to a longstanding technical problem, the program obtained successful initial results on controlling and sustaining the current profiles with a lower level of available power. This fix will improve future operations.

FY 2000 Targets and Assessments:

(1) Maintain the high quality and relevance of DOE's science as evaluated by annual peer reviews and advisory committees. (Met Goal)

(2) Operate the DIII-D Tokamak facility to test the feasibility of using increased radio frequency heating power and improved power exhaust capabilities to extend the pulse length of advanced operating modes, a requirement for future fusion energy sources. (Met Goal)

FY 1999 Targets and Assessments:

Maintain high scientific quality in the Energy Research Program as judged by the Program Advisory Committees. (Met Goal)

Providing Extraordinary Scientific Tools, Workforce, And Infrastructure (SC 4-1)

Manage the fusion program's human resources and the operations of the national fusion science user facilities to the highest standards for efficiency, productivity and safety. Use peer reviews and merit evaluations to plan, select, implement, and review fusion energy sciences programs. Coordinate with the NNSA's Office of Defense Programs on International Fusion Energy activities. Continue to educate and train young scientists who will contribute broadly to the Nation's progress in many fields of science and technology. (Met Goal)

FY 2001 Targets and Results:

In FY 2001, the three major fusion research facilities were operated in a safe manner and weeks-of-operation goals set for each facility were met. At each facility, a Program Advisory Committee used peer-review processes to plan, implement, and review the research being done. Monthly coordination meetings were held to assure that the different aspects of inertial fusion research funded by participating offices are fully coordinated.

Target: Initiate and meet schedules for dismantling, packaging, and offsite shipping of the Tokamak Fusion Test Reactor systems.

Result: The effort to decontaminate and decommission the TFTR facility at PPPL is proceeding on cost and schedule.

FY 2000 Targets and Assessments:

(1) Operate a novel magnetic fusion confinement device, the National Spherical Torus Experiment, with 0.5 mega-ampere plasma currents approaching 0.5-second pulse lengths and 1 mega-ampere currents for shorter pulses. (Met Goal)

(2) Make operational three innovative concept exploration experiments in fusion sci-

ence—the LSX field—reversed configuration and the flow-through Z pinch, both at the University of Washington, and the Pegasus quasi-spherical toroidal plasma at the University of Wisconsin providing basic scientific understanding of relevant concept phenomena. (Met Goal)

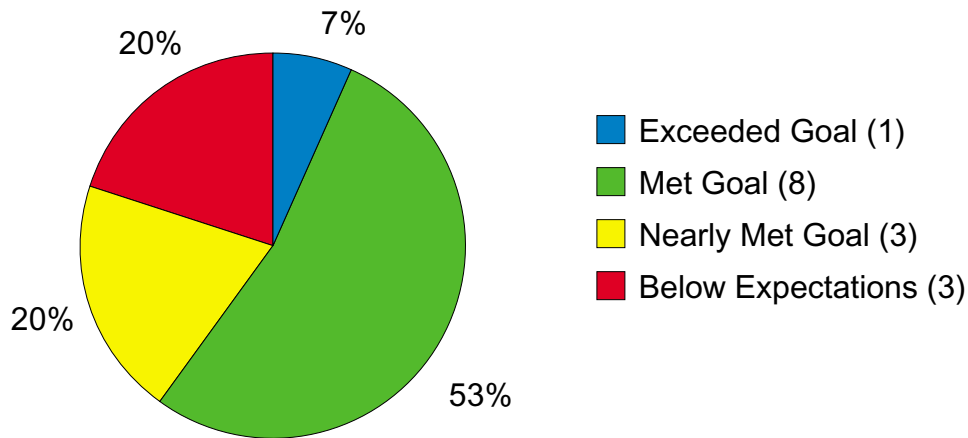
FY 1999 Targets and Assessments:

No performance targets were established in FY 1999.

Corporate Management

GOAL: Demonstrate excellence in the Department’s environment, safety and health practices and management systems to support our world-class programs.

The following pages contain detailed information on the results achieved for revised final FY 2001 performance goals and targets for offices supporting the Corporate Management goal. These final revised performance goals were included the Department’s FY 2002 Annual Performance Plan. There were 15 General Performance Goals in FY 2001 for offices supporting the Corporate Management goal. The overall results are:



GPRA Program Activity: Environment, Safety and Health

Annual Performance Plan GPRA Program Activity	DOE Office	Financial Statement Footnote	Program Element In Schedule Net Costs	NET COSTS (\$M)		
				FY 01	FY 00	FY 99
Environmental Safety & Health (Defense & Non-Defense)	EH	23	Facility Safety	\$65	\$62	\$73
		23	Health Studies	\$89	\$98	\$91

Description: The Office of Environment, Safety and Health (EH) is a corporate resource that provides leadership and Departmental management excellence to protect the workers, the public, and the environment. EH provides corporate policy, guidance and technical expertise to support and advise the Secretary regarding the line management implementation of environment, safety and health requirements and programs. EH staff are experts in disciplines such as environmental protection; industrial hygiene; industrial, chemical, and constructions safety; public health; occupational medicine, and risk management. EH activities funded under this GPRA activity cover both the "Energy Supply" appropriation and the "Other EH Defense Activities" appropriation. Under the Energy Supply appropriation EH funds two major activities: Policy, Standards and Guidance; and Corporate Programs. This better characterizes EH as a corporate resource to advance the DOE mission while promoting the establishment of effective and efficient environment, safety and health programs. Under the Other EH Defense Activities appropriation, EH funds the following four major core activities: Oversight, Health Studies, the Radiation Effects Research Foundation (RERF), and the Gaseous Diffusion Plants activity. In addition, funding is provided for Exposure Compensation Activities that relate to compensation of workers across the complex for work-related illnesses. The Gaseous Diffusion Plants activity will be completed in FY 2001. No funding is requested in FY 2002. EH has established the following general performance goal in support of the Department's strategic plan.

Instituting A Sound ES&H Culture (CM 1-1)

Integrate and embed risk-based, outcome-oriented environment, safety and health (ES&H) management practices into the performance of DOE's day-to-day work. Clearly identify and fund ES&H priorities and ensure resources are appropriately spent on those priorities. Conduct over-

sight, special reviews, assessments, evaluations, and inspections of such topics as environmental protection, fire protection, safety management implementation, and accidents. Identify at-risk worker populations and employ appropriate mitigation measures. Continue shift from a reactive approach to emphasizing excellence and prevention in protecting worker and public safety and health. (Nearly Met Goal)

FY 2001 Targets and Results:

Target: Make biennial presentations of the results of epidemiologic surveillance analyses to workers and management at participating DOE facilities; and expand public access to the Office of Epidemiologic Studies through improved web linkages.

Result: During FY 2001, nine Epidemiologic Surveillance presentations were made to management, workers and citizens; and 29 Epidemiologic Surveillance Annual Reports were posted to the EH-6 web page.

Target: Fully implement Integrated Safety Management at all DOE sites. (FMFIA-safety and health)

Result: At the beginning of FY 2001, the Department had expected to complete implementation of Integrated Safety Management (ISM) at its two remaining sites: Los Alamos National Laboratory (LANL) and the Oak Ridge Y-12 Plant. LANL completed its ISM verification during FY 2001 as expected. Based on the results from the LANL verification assessment, the Albuquerque Operations Office declared ISM implemented at LANL in April 2001. Because of the amount of work needed to prepare for Y-12's review, the Y-12 verification did not start until August 2001. On November 13, 2001, Y-12's verification of ISM implementation was completed, and the Y-12 Area Office subsequently declared Y-12 implementation complete. Under the ISM system, local management must conduct annual reviews and may conduct additional for-cause reviews, as needed, to verify that ISM remains implemented at each site.

Target: Publish 10 interim or final international health scientific and technical reports from the RERF, Marshall Islands, and Russians to increase our information defining the relationship between ionizing radiation dose and its effect on human health.

Result: Published 13 interim or final International Health Scientific and Technical Reports.

FY 2000 Targets and Assessments:

(1) Conduct oversight special reviews, assessments, evaluations, and inspections of such topics as emergency management, safety management, and accidents. (Met Goal)

(2) Propose legislation to Congress that would establish a program to compensate current and former Federal and contractor workers and beryllium vendor employees who are ill because of beryllium exposure, as well as certain workers at the Oak Ridge East Tennessee Technology Park and the Paducah Gaseous Diffusion Plant in Kentucky who have illnesses associated with exposures that occurred during their employment. (Met Goal)

(3) Provide medical screening to all DOE workers formerly exposed to beryllium during their employment at DOE facilities. (Met Goal)

(4) Develop a stronger, more coherent public health agenda for DOE sites. (Met Goal)

(5) Accomplish the milestone of the FMFIA corrective action plan to complete the nuclear safety standards upgrade project. (Nearly Met Goal)

Plan of Action: Plans to fully implement ISM at the two remaining sites were prepared by those sites and are scheduled for completion by April 1, 2001.

FY 1999 Targets and Assessments:

(1) Conduct oversight special reviews, assessments, evaluations, and inspections of such topics as emergency management,

safety management and accidents.
(Met Goal)

(2) Issue an initial status report on the development of a public health agenda by

December 31, 1998, and a final public health agenda for each site, which reflects customer and stakeholder input, to be issued in FY 2000. (Nearly Met Goal)

GPRA Program Activity: Departmental Administration & Hearings and Appeals

Annual Performance Plan GPRA Program Activity	DOE Office	Financial Statement Footnote	Program Element In Schedule Net Costs	NET COSTS (\$M)		
				FY 01	FY 00	FY 99
Departmental Administration	S1, PA, HG, PI, GC, ED, ME	23	*	*	*	*
Hearings and Appeals	HG		*	*	*	*

* In accordance with OMB Statement of Federal Financial Standards number 4, Managerial Cost Accounting Concepts and Standards for the Federal Government, the Departmental Administration net costs were allocated to the programs and are not reported separately.

Description: These Departmental offices often support the strategic objectives of the program areas and corporate management at a level below the reporting threshold of this plan. For example, the Office of Hearings and Appeals contributes to the improvement of the delivery of adjudication services through the use of business-like management practices. However, primary responsibility for these goals resides in the Offices of Procurement Policy and Procurement Operations in the Office of Management, Budget and Evaluation (ME). The Office of Economic Impact and Diversity (ED) collaborates with the Energy Information Administration to report on the effects of national energy programs, policies, and regulations of DOE on minorities and minority communities. Examples such as these abound in the Departmental offices. Many of these offices lead Departmental efforts in attaining our strategic goals. A description of these offices follows:

Office of the Secretary: The Office of the Secretary provides overall policy direction for the Department of Energy in fulfilling its mission to foster a secure and reliable energy system that is environmentally and economically sustainable; to be a responsible steward of the Nation’s nuclear weapons; to clean up our own facilities; and to support continued United States leadership in science and technology.

Management and Administration (MA) and the Chief Financial Officer (CFO): In FY 2001, the Office of Management and Administration and the Office of the Chief Financial Officer were combined into the new Office of Management, Budget and Evaluation (ME). This performance report, however, organizes the results for MA and CFO as described in the revised final performance plan for FY 2001, contained in the FY 2002 Annual Performance Plan. MA provided Department-wide administrative and management support. It was responsible for administrative services, human re-

sources, training, procurement and financial assistance oversight and policy, and other management systems and processes. MA provided human resources and procurement services to DOE headquarters staff, managed the headquarters facilities, and supported DOE missions with a wide range of functions. The Office of the CFO provided centralized direction and oversight of the full range of financial and planning activities including: strategic planning and program evaluation; project management; budget formulation, presentation and execution; Department-wide oversight of internal controls; Departmental accounting and financial policies, procedures and directives; operation and maintenance of the Department's payroll system and financial information system/Standard General Ledger; and, financial management (accounting, cash management, and reporting).

Board of Contract Appeals: The Board is an administrative tribunal responsible to the Secretary and under law for the fair and impartial trial and adjudication of a variety of disputes. With few exceptions, these disputes are related to the Department's acquisition and financial assistance programs.

Congressional and Intergovernmental Affairs: This office promotes Departmental policies, programs and initiatives through liaison, communication, coordination and interaction with Congress, state, local, and tribal governments, other Federal agencies, stakeholders, and the general public.

Public Affairs: The Office of Public Affairs communicates information about DOE's work in a timely, accurate, and accessible way to the news media and the public.

General Counsel: The Office of the General Counsel provides comprehensive legal services to the Secretary and the Department.

Policy and the International Affairs: In FY 2001, the Office of Policy (PO) and the Office of International Affairs (IA) were combined into the new Office of Policy and International Affairs (PI). This report, however, organizes the results for PO and IA as described in the revised final performance plan for FY 2001, contained in the FY 2002 Annual Performance Plan. PO served as the primary policy advisor to the Secretary and the Department's senior management on issues related to the availability, economic efficiency, and reliability of the Nation's energy sector, and is the source of accurate and unbiased analysis of existing and prospective energy-related policies. PO's role was to deliver integrated and cross-cutting policy advice to Departmental leadership and represent the Department in interagency discussions on energy policy. During the last two years, the Office had been directed to: 1) serve as the research and development (R&D) Secretariat and lead a Department-wide review and analysis of the energy resources R&D portfolio; 2) coordinate DOE responses to energy-related emergencies through the newly-created Office of Energy Emergencies; and 3) develop a coordinated, Department-wide program to address nuclear materials stewardship. IA's role was to formulate and develop international energy policy; lead the Department's bilateral and multilateral cooperation with other nations and international organizations, including participation in international negotiations; coordinate the implementation of international cooperative agreements; advance energy, environmental, and nonproliferation policies in international agreements; promote positive relationships with foreign nations that support U.S. policy goals; and, promote policy and regulatory reforms in foreign countries that will remove barriers and open markets for U.S. firms abroad. IA also coordinated DOE's international energy, science and technology relations with other countries.

Office of Economic Impact and Diversity: The Office of Economic Impact and Diversity (ED) develops and executes department-wide policies to implement applicable legislation and Executive Or-

ders that strengthen diversity requirements affecting the workforce, small and disadvantaged businesses, minority educational institutions, and historically under-represented communities. The Office promotes excellence and equity in the Department's workforce, undertakes measures that promote a positive work environment for all employees, addresses unlawful discrimination, advocates environmental justice, protects whistle blowers, and creates partnerships with small and disadvantaged businesses and minority educational institutions. The larger office includes the Offices of Minority Economic Impact, Civil Rights and Diversity, Small and Disadvantaged Business Utilization, Employee Concerns and the National Ombudsman.

Office of Hearings and Appeals: The Office of Hearings and Appeals (OHA) is responsible for all of the Department's adjudicatory processes, personal security clearance cases, whistleblower complaints, and requests for information under the Freedom of Information and Privacy Acts. In addition, OHA is responsible for resolving or adjudicating all remaining matters stemming from the Emergency Petroleum Allocations Act of 1973. OHA also seeks to resolve all claims of adverse impact emanating from the operations of the Department, including employee claims, public interests, and disputes between offices.

Office of Management & Administration

Managing Human Resources (CM 2-1)

Align programs and policies pertaining to human capital with DOE's mission and integrate human resource management into DOE's system for planning, budgeting, and program evaluation. Continue to recruit, develop, and manage our workforce, including entry-level positions to sustain world-class programs and operations. Improve Federal technical workforce capabilities through support of Federal Technical Capability Panel operations for activities related to the Technical Qualification Program, program reporting and assessments. Continue to conduct self-assessments to measure organizational performance including evaluating results, measuring trends, and recommending organizational improvements to DOE leadership. (Nearly Met Goal)

FY 2001 Targets and Results:

Target: Improve Departmental Human Capital Management by initiating comprehensive human resources strategies

which will: implement the FY 2001 milestones in the DOE Corporate Training Plan; increase the electronic transfer of documents in Corporate Human Resource Information System (CHRIS), resulting in 15 percent of all personnel documents being processed electronically.

Result: DOE has met its human capital management performance targets. These include completing the FY 2001 milestones in the DOE Corporate Training Plan, and increasing the electronic transfer of documents in CHRIS by over 49 percent which exceeded the 15 percent target.

Target: Complete the milestones listed in the FMFIA corrective action plan for the Departmental challenge of human capital management. (FMFIA)

Result: DOE met all but two of the FY 2001 milestones in the FMFIA corrective action plan for the Departmental challenge of human capital management. The two milestones, developing a mechanism to forecast mission needs/project skills gaps, and developing succession planning strategies have been extended into FY 2002/2003

due to revised initiatives included in the DOE 5-Year Workforce Restructuring Plan forwarded to OMB in September 2001.

Plan of Action: Implement the Initiatives included in the DOE 5-Year Workforce Restructuring Plan.

FY 2000 Targets and Assessments:

(1) Improve Federal technical workforce capabilities at defense sites by implementing the FY 2000 milestones of the Revised Implementation Plan for Defense Nuclear Facilities Safety Board (DNFSB) Recommendation 93-3. (Met Goal)

(2) Increase the electronic transfer of documents through implementation of paperless workflow and reduce personnel paper transactions by 15 percent. (Exceeded Goal)

(3) Improve workforce skills and reduce training costs by implementing the FY 2000 milestones in the DOE Corporate Education, Training, and Development Plan. (Met Goal)

(4) Have 90 percent of contract professionals certified under DOE professional development standards. (Nearly Met Goal)

Plan of Action: Through September 2000, about 85 percent of DOE contract professionals were certified. The Department will continue to train and certify the DOE contract professionals to meet the 90 percent goal. (In FY 2001 about 85 percent of the DOE contract professionals were certified. This target is now addressed in Ensuring Public Confidence in the Department's Contractual Transactions (CM 3-2) by achieving professional certification for the majority of procurement personnel.)

In FY 2000 and FY 2001, 85 percent of DOE's contract professionals were trained and certified. With turnover and promotions,

the Department expects to continue to maintain an 85 percent certification level. Therefore, no new targets were set in this area.

FY 1999 Targets and Assessments:

(1) Improve Federal technical workforce capabilities at defense sites by implementing the FY 1999 milestones of the Revised Implementation Plan for DNFSB Recommendation 93-3. (Met Goal)

(2) Implement a DOE-wide employee accessible automated personnel system by December 1998. (Exceeded Goal)

(3) Improve workforce skills and reduce training costs by implementing the FY 1999 milestones in the DOE Corporate Education, Training, and Development Plan. (Met Goal)

Ensuring Public Confidence In The Department's Contractual Transactions (CM 3-2)

Maximize the use of electronic commerce systems in purchasing and personal property sales, and ensure integration with internal financial management systems as well as external interfaces. Increase the use of performance-based service contracts by reviewing selected eligible actions for conversion and by conducting training for program and project managers to continually improve performance-based statement of work, and ensure evaluation of contractor performance. Ensure competent organizational workforce by achieving professional certification for the majority of procurement personnel; and, implement leadership development and succession planning programs. (Met Goal)

FY 2001 Targets and Results:

Target: Convert all management and operating (M&O) contracts awarded in FY 2001 to Performance-Based Service Contract (PBSC) management contracts.

Result: All six M&O contracts awarded in FY 2001 were PBSC management contracts.

Target: Award approximately 50 percent of service contracts as PBSC using government-wide standards.

Result: 48.75 percent of service contracts (other than simplified acquisitions) were awarded as PBSC using government-wide standards.

Target: Select and begin implementation of DOE-wide electronic contracting for large procurements.

Result: E-commerce systems have been implemented at major DOE Contracting Activities

Target: Complete the milestones listed in the FMFIA corrective action plan for the Departmental challenge of contract management. (FMFIA).

Result: All milestones listed in the FMFIA corrective action plan for the Departmental challenge of contract management have been met.

Target: Conduct a comprehensive aviation program study by April 2001, including an OMB Circular A-76 analysis and a cost effectiveness evaluation; and, establish a review process for the conduct of charter and contract aviation services.

Result: In the DOE Aviation Program, the analysis, development of recommendations, and draft report was completed in March 2001. A review process for the conduct of charter and contract aviation services has

been completed and the requirements and processes have been incorporated into DOE Order 440.2A, Aviation Management and Safety, which is complete and should achieve final Departmental approval by November 2001.

FY 2000 Targets and Assessments:

(1) Convert all M&O contracts awarded in FY 2000 to Performance-Based Management Contracts using government-wide standards. [Federal Acquisition Regulations (FAR), (48 CFR Part 39) and Office of Federal Procurement Policy letter 91-2]. (Met Goal)

(2) Convert one support services contract at each major site to a Performance Based Service Contract (PBSC) using the government-wide standards. [FAR, (48 CFR Part 39) and Office of Federal Procurement Policy letter 91-2]. (Met Goal)

(4) Complete the milestones listed in the FMFIA corrective action plan for the Departmental challenge of contract management. (Met Goal)

(5) Improve overall efficiency and safety of aviation services by conducting a comprehensive aviation program study by July 2000, including an OMB Circular A-76 analysis and a cost-effectiveness evaluation; and, by establishing a review process for the conduct of charter and contract aviation services. (Nearly Met Goal)

Plan of Action: Phase I of the study was completed at the end of the fiscal year. The final report, which will incorporate conclusions from Phase I and Phase II, will include recommendations for fleet mix changes (e.g., dispositions and acquisitions) and is expected to be complete by June 2001.

FY 1999 Targets and Assessments:

- (1) Convert all M&O contracts awarded in FY 1999 to performance-based contracts. (Met Goal)
- (2) Award 50 percent of all M&O contracts, including three M&O contracts that will change to FAR contracts during FY 1999, using competitive procedures. (Exceeded Goal)
- (3) Award 50 percent of all support service contracts in FY 1999 as performance-based service contracts. (Exceeded Goal)
- (4) Issue a new contractor fee policy by December 1998, as committed to in the FMFIA FY 1997 report. (Met Goal)
- (5) Conduct a follow-up assessment of the effectiveness of actions taken in response to the recommendations made in the Performance-Based Incentive Report, as committed to in the FMFIA FY 1997 report. (Met Goal)

Chief Financial Officer

Managing Financial Resources And Physical Assets (CM 3-1)

Continue to streamline and improve operations, improve decision-making, ensure accountability, maximize departmental resources, and achieve intended results by corporately managing the Department's mission, functions, and activities. The Office of the CFO has the lead responsibility for this goal and prepares and publishes the Department's Strategic Plan, Annual Performance Plan, and the Annual Performance and Accountability Report that includes the Department-wide audited financial statement. CFO is executing the project for implementing the Business Man-

agement Information System (BMIS) Phoenix core financial system including pilots, training, system interfaces, Standard General Ledger (SGL) integration and data conversion. CFO is also managing a Departmental Project Management Tracking and Control System to monitor the status of projects in terms of cost, schedule, and technical performance. (Below Expectations)

FY 2001 Targets and Results:

Target: Complete the implementation of the BMIS Phoenix core financial system at a minimum of one service center cluster as part of a phased deployment strategy.

Result: The project team is nearing completion of the design for the new BMIS Phoenix system but the progress was below expectations. The design phase of the systems development methodology is in the critical step of recommending the blend of technical and business gap closing strategies.

Plan of Action: There have been delays and schedule slippages in the BMIS Phoenix system project. The project team will complete the design of the new BMIS Phoenix system in early FY 2002.

Target: By April 2001 have all ongoing capital asset acquisition projects, valued at \$5 million or more, fully integrated into the project management policies, procedures, and systems implementation.

Result: The Department met its goal and issued DOE Order 413.3, Program and Project Management for the Acquisition of Capital Assets and the accompanying draft Manual and Practices for immediate implementation in October 2000 to fully integrate all ongoing capital asset acquisition projects, valued at \$5 million or more into the project management policies, procedures and systems implementation.

Target: Recruit and hire additional personnel to address immediate needs in HQ critical financial functions (FMFIA-human capital management)

Result: The CFO has been successful in achieving its goal of hiring additional personnel to meet immediate needs in HQ's critical financial functions. While hiring did not eliminate all of the critical needs in the financial functions, they did alleviate hardships.

Target: Complete all planned External Independent Reviews (EIRs) of projects on schedule, to support both the needs of the project managers and the validation of the performance baselines.

Result: At the start of the fiscal year there was a requirement to conduct 12 EIR's to validate performance baselines in preparation for the fiscal year 2003 budget requests. Three additional baseline validation EIR's were requested by the Program Offices to support requirements not previously scheduled. All performance baseline validations EIR's were completed in time to support Program Office requirements.

Target: Improve EIR procedures and Statements of Work. (FMFIA-project management)

Result: The implementation procedures for EIRs have been completed and implemented. These procedures will be included in the Project Management Manual and Procedures.

Target: By April 2001, resolve all recommendations from the National Research Council's (NRC's) 1999 report, "Improving Project Management in the Department of Energy."

Result: All 19 recommendations from the NRC 1999 report have been resolved; 13 through closure and six are proceeding according to an approved action plan.

FY 2000 Targets and Assessments:

(1) Complete the development of requirements and the creation of a new account structure. Purchase commercial Core Financial System software for 150 users for a pilot implementation at one of the three accounting service centers and two of its satellite sites. Begin implementation solutions for special DOE requirements. (Met Goal)

(2) By April 2000, implement new project management policies and procedures that strengthen the management of projects, and by July 2000, have new systems in place to verify progress against established project scope, schedule and cost baselines on projects valued at \$5 million or more. (Nearly Met Goal)

Plan of Action: Policies and procedures developed. Implementation will commence in FY 2001.

(3) By September 30, 2000, reestablish the Acquisition Executive and Energy Systems Acquisition Advisory Board (ESAAB) processes for use on critical decisions for projects of \$5 million or more. (Met Goal)

(4) Complete the milestones listed in the FMFIA corrective action plan for the Departmental challenge of CFO mission critical staffing. (Below Expectations)

Plan of Action: The CFO will continue to aggressively conduct recruitment workshops and job fairs at local colleges and universities to obtain additional qualified personnel to alleviate critical workforce issues.

(5) Complete all planned EIRs of projects on schedule, to support both the needs of the project managers and timely delivery of EIR reports, with the programs' corrective action plans, to the Congress. (Met Goal)

(6) Complete the milestones listed in the FMFIA corrective action plan for the Depart-

mental challenge of project management.
(Nearly Met Goal)

FY 1999 Targets and Assessments:

(1) Identify functional and technical system requirements for developing a Business Management Information System (BMIS) with a special emphasis on financial management, and develop business scenarios for its evaluation (a milestone of a FMFIA corrective action plan).
(Nearly Met Goal)

(2) Develop annual performance-based budgets by using DOE's corporate Strategic Management System to link resource requirements to 5-year plans, make independent project validations, and perform cross-cutting program evaluations. (Nearly Met Goal)

(3) Verify progress against established project scope, schedule, and cost baselines on projects valued at \$5 million or more.
(Below Expectations)

(4) Complete four Energy Systems Acquisitions Advisory Board (ESAAB) critical actions on required strategic and major systems.
(Met Goal)

(5) Accomplish the milestones of the FMFIA corrective action plan for the Departmental challenge of project management.
(Below Expectations)

Office of Economic Impact and Diversity

Managing Human Resources (CM 2-1)

Align programs and policies pertaining to human capital to DOE's mission and integrating human resource management into DOE's system for planning, budgeting, and program evaluation. Continue to recruit, develop, and manage

our workforce, including entry level positions to sustain world-class programs and operations. As part of this goal, Office of Economic Impact and Diversity (ED) will fully implement the Department's Minority Educational Institutions Strategy and increase management accountability in implementing the DOE Strategic Plan and Workforce 21. ED will also develop and administer, in conjunction with the National Academy of Public Administration, a survey to determine customer knowledge of and satisfaction with the Department's employee concerns programs.
(Nearly Met Goal)

FY 2001 Results:

This year DOE took steps to ensure diversity and improve the working environment for all employees. The office of Civil Rights (ED-4) provided support and guidance to the Executive Resources Board on evaluating the diversity element in Senior Executives' performance appraisals. ED ensured that the Secretary and Senior managers received quarterly reports outlining ongoing diversity efforts and progress. ED developed a multi-year affirmative employment plan to address the under-representation of minorities and women at DOE. ED also revised the "Acquisition Letter" which provides contractors with guidance on development of their diversity plans. ED successfully established a management accountability system. ED produced a report entitled "Human Capital Management in a Dynamic Environment" which defines diversity baselines for monitoring and evaluation progress. ED, with the Department of Human Resources, devised strategies for integrating and making diversity a critical element in all decisions relating to the hiring process. ED's survey contract with the National Academy of Public Administration raised employee awareness surrounding their work environment. A memorandum signed by the Secretary on June 20, 2001, affirmed the Department's commitment to minority Educational Institutions.

FY 2000 Targets and Assessments:

(1) Determine how well the Department’s diversity goals are being met by tracking the Department’s personnel actions on hiring and competitive promotions against the current Civilian Labor Force statistics. (Met Goal)

(2) Increase employee awareness by publicizing DOE-wide the scope of the employee concerns program, the availability of the ombudsman function, and the DOE employee concerns program offices at the operations and field offices. (Met Goal)

FY 1999 Targets and Assessments:

Publish in the Code of Federal Regulations the DOE Mentor-Protégé Program. (Nearly Met Goal)

Managing Financial Resources And Physical Assets (CM 3-1)

Continue to streamline and improve operations, improve decision-making, ensure accountability, maximize departmental resources, and achieve intended results by corporately managing the Department’s mission, functions, and activities. ED supports this goal by securing resources for minority institutions. (Below Expectations)

FY 2001 Targets and Results:

Target: Achieve the Department’s small business percentage goals negotiated with the Small Business Administration (SBA) and the Office of Federal Procurement Policy.

Result: The goals assigned by SBA to DOE were unreasonably high, and DOE notified SBA in 2000 that DOE could not achieve these goals. The Government-wide, statutory small business goal is 23 percent. The Office of Management and Budget (OMB) decided in FY 2000, that DOE could not count subcontracts awarded by its management and operating contractors towards its small business prime contractor’s goals. SBA assigned DOE a goal of 5 percent in FY 2000 and FY 2001. Since most prime contracts are awarded for a 5-year period, most of the dollars obligated are to fund existing contracts.

FY 2000 Targets and Assessments:

Ensure equitable opportunities for minority educational institutions and small, minority, and women owned businesses to compete. (Below Expectations)

Plan of Action: The Department did not meet the SBA assigned goal of 5 percent of total procurement base for prime contracting. The Department has adopted two strategies to strengthen support to small businesses and to minority educational institutions. With respect to small businesses, the Department will identify small business contracting opportunities for a 3-year period and develop an Annual Small Business Report to the Secretary that will provide the framework for achieving and increasing the Department’s small business contracting goals. With respect to minority educational institutions, the Department will, in FY 2001, fully implement the Minority Educational Institutions Strategy to facilitate increased support to minority educational institutions.

In FY 2001 the Department confirmed its commitment to minority educational institutions in a memorandum signed by the Secretary on June 20, 2001.

FY 1999 Targets and Assessments:

(1) Enhance America's science workforce by ensuring that minority-serving institutions are afforded and take advantage of the Federal Research, development, education and equipment opportunities for which they are eligible, and increasing minority-serving awards by 5 percent over FY 1998. (Below Expectations)

(2) Commit to specific procurement strategies that will increase the participation of women-owned small businesses in the Federal marketplace through a Memorandum of Understanding with the Small Business Administration. (Met Goal)

Office of Policy

Enhancing Domestic Oil And Gas Supplies (ER 1-2)

Provide policy, legislative, regulatory, and technology options, as well as improved practices to enhance the availability of domestic oil and natural gas supplies, while minimizing the environmental impacts of production. Develop technologies and improved practices to enhance the reliability and adequacy of the domestic natural gas pipeline and storage system. The Office of Policy (PO) supports this goal by developing and assessing policy options to (1) spur domestic production and transport of natural gas; and (2) ensure adequate supply of petroleum, through increased domestic production and transport of oil and oil products. (Met Goal)

FY 2001 Results:

PO was instrumental in leading the National Energy Policy Development Group (NEP) to recommend that new technology be used to promote enhanced oil and gas recovery from exist-

ing wells, that oil and gas exploration technology be improved, that pipeline safety be improved, that the adequacy of America's refining capacity be ensured, and that the President make energy security a priority of our trade and foreign policy. PO continues to advance DOE and Administration policies through: a) our work with the Mineral Management Service on its leasing program development; b) our work with the Office of Fossil Energy on Outer Continental Shelf issues; c) our work with the Bureau of Land Management on their onshore leasing program; and, d) the extensive work associated with the development and eventual implementation of the NEP, including the work on the Alaska National Wildlife Refuge and fuels issues.

FY 2000 Targets and Assessments:

Work with industry organizations and government agencies, including the National Petroleum Council, to assess the impact of changing market conditions and regulations on the level and variability of petroleum prices and supply, and provide recommendations to minimize disruptions during change. (Nearly Met Goal)

Plan of Action: Six major actions have been completed. Significant additional work is underway consistent with this performance objective. DOE expects to work with EPA and other agencies throughout the first and second quarters of 2001 to help finalize an acceptable ultra-low sulfur diesel rule (completed December, 2000) as well as a gasoline toxics rule (completed April 2001). DOE analysis will continue related to Methyl Tertiary-Butyl Ether (MTBE), an issue raised by Congressional legislative efforts and in National Petroleum Council (NPC) study and ultra-low sulfur diesel fuel (completed April 2001). DOE is working with EIA, industry organizations (National Petrochemical and Refinery Association (NPR), American Petroleum Institute (API) fuels committee), EPA, and other groups on these is-

sues. DOE has also initiated an Atlantic Basin gasoline and diesel fuel import supply study which will be carried out over the 2001 reporting period.

FY 1999 Targets and Assessments:

Work with industry organizations and government agencies, including the National Petroleum Council, to assess the impact of changing market conditions and regulations on the level and variability of petroleum prices and supply, and provide recommendations to minimize disruptions during change. (Met Goal)

Coordinating Federal Government Responses To Energy Emergencies (ER 1-4)

Coordinate Federal agency responses to regional or national energy supply shortages or other unusual market disruptions that could adversely impact consumers or the economy. PO coordinates Federal and State responses to energy emergencies in a manner that anticipates emergencies, and fosters improved responses through better communication among Federal, state, and industry stakeholders. (Met Goal)

FY 2001 Results:

PO has successfully coordinated the resources of the Federal government to prepare for, avoid, mitigate and respond to energy emergencies. During the winter, spring and summer of 2001, when California was experiencing a shortage in electricity supply and was faced with rolling blackouts, PO worked closely with electric system operators and California State energy officials to assess the extent of the problem and co-

ordinated a Federal response that included emergency power deliveries from the Federal Power Marketing Administrations, clarification of Environmental Protection Agency (EPA) emission regulations, and conservation measures at Federal facilities. While several rolling blackouts did occur in California last winter, the efforts of PO were credited with avoiding many more and helped to minimize those that did occur. To prepare for potential winter heating fuel shortages in New England during the winter of 2000-2001, PO jointly sponsored a workshop with the National Association of State Energy Officials and the Council of New England Governors. All relevant Federal and state agencies participated and developed coordination and communication protocols that were used throughout the winter to assure adequate supplies and delivery of heating fuels. During the spring of 2001, PO worked with the Energy Information Administration to provide a detailed Reformulated Gasoline Supply Assessment for East Coast and Midwest markets. This assessment served as the basis for the Department's response to public concerns over sharply-increased gasoline prices in the early summer. Later in the summer of 2001, PO led an Administration-wide effort to respond to the loss of a key Midwest refinery to a fire. DOE coordinated a very quick turnaround local supply assessment for the market affected by the refinery outage and recommended a waiver of RFG and CG requirements (which EPA granted in part) to allow additional supply to enter the Chicago market.

FY 2000 Targets and Assessments:

Complete final preparations for a smooth Y2K transition in U.S. energy markets in cooperation with industry organizations and other government agencies. Provide for timely public communication of information regarding readiness status, contingency planning activities, and real-time perfor-

mance of the Nation's energy infrastructure during the Y2K rollover. (Met Goal)

FY 1999 Targets and Assessments:

Work with industry organizations and government agencies to establish a comprehensive process to assess Y2K readiness status, promote intersectoral coordination, and provide contingency plans. Provide for timely communication to the public of information regarding readiness status and contingency planning activities. (Met Goal)

Establishing A More Open, Competitive Electric System

(ER 2-1)

Identify policy, legislative, regulatory, and technology options, as well as improved practices, to enhance the development of competitive electricity markets that result in a more efficient and reliable electric power system, while also producing consumer savings and environmental benefits. PO will lead this goal and continue to conduct analyses of the electric sector markets and regulation, and restructured electricity markets in order to better enable decision makers and legislators to address electricity reliability, prices and other related economic issues. In FY 2001, PO will coordinate the Department's contribution to the efforts of the Energy Policy Development Group to develop and recommend a national energy policy to the President. (FMFIA) (Met Goal)

FY 2001 Results:

PO has provided ongoing support to the Office of the Secretary, the Office of Management and Budget, and the National Economic Council on

issues related to the California power crisis. This support included a wide variety of analyses and memoranda on specific topics including, but not limited to the following: assessment of California's conservation and energy efficiency efforts for 2001; impact of California's retail rate increase on solvency for the major investor-owned utilities; impact of the NOx emissions limit on generating capacity; periodic status reports on electric generating plant and qualifying facilities outages; and, periodic status reports on construction of new generating facilities. PO has constructed a model to simulate the potential for electricity outages in California. This work represents a significant improvement over forecasts made by other organizations in that it uses probabilistic methods to estimate weather and plant outages; it evaluates the potential for electricity outages for all hours, not just the single peak hour as other forecasts do; and provides an estimate of the magnitude of electricity outages, which no other forecast has provided. PO coordinated the development, analysis and communication of Departmental and Administration statements on energy policy, including the development of a National Energy Policy Plan.

FY 2000 Targets and Assessments:

Use recently enhanced modeling capabilities to demonstrate the impact of provisions to address market power and properly-sized regional transmission organizations in support of the legislative process. (Met Goal)

FY 1999 Targets and Assessments:

(1) Enhance electricity sector modeling capabilities by benchmarking the representation of transmission system constraints against models of physical power flows to better address electric reliability and economic issues, and use this enhanced modeling capability in support of the legislative process. (Met Goal)

(2) Issue a revised Administration proposal on electric utility restructuring and the supporting economic analysis to provide a catalyst for consensus and action. (Met Goal)

Conducting Policy Analysis For Deploying Energy Efficient Technologies (ER 3-4)

Ensuring that energy-efficiency regulations and other policies produce economic, energy and environmental benefits. The PO will lead this goal by guiding the analysis of likely effects of energy efficiency regulations and policies on energy use and by assessing alternatives that would maximize the benefit of the energy sector consumers and the economy. (Met Goal)

FY 2001 Results:

PO worked closely with the Office of Energy Efficiency and Renewable Energy, the Office of General Counsel, other DOE offices and other Federal agencies to ensure that likely effects of energy-related regulations were carefully assessed to ensure that energy and environmental objectives were met, and that the likely net benefits for consumers and the economy would be positive. As a consequence of these efforts, new efficiency standards were issued for clothes washers, water heaters, fluorescent light ballasts, numerous categories of commercial building equipment, and certain types of new buildings; and standards for central air conditioners and heat pumps were proposed.

FY 2000 Targets and Assessments:

No performance targets were established in FY 2000.

FY 1999 Targets and Assessments:

No performance targets were established in FY 1999.

Ensuring Energy Related Regulations And Procedures Produce Economic, Energy And Environmental Benefits (ER 4-1)

Analyze the likely effects on energy production and use, including electricity generation, of environmental and other energy-related regulations or policies that are under consideration with the objective of assuring the achievement of environmental objectives, while also producing benefits for the energy sector, consumers and the economy. (Met Goal)

FY 2001 Results:

PO provided coordinated Departmental input into EPA's determination that regulation of hazardous air pollutant emissions from coal and oil utilities was necessary under the Clean Air Act. PO provided, and continues to provide, Departmental input to Administration multi-emissions reduction strategy, resulting in consideration of broad impacts on energy markets and total costs. PO provided coordinated input to EPA regulation on cooling water intake structures for new utility facilities, in order to provide necessary flexibility to tailor regulation to potential adverse environmental impacts and increase State decision-making. PO provided Departmental input into EPA's proposed guidance for technology requirements for sources impacting haze in national parks,

resulting in more flexible proposed guidance for utilities. PO continues to work with EPA and other Administration interests and outside stakeholders on Methyl Tertiary-Butyl Ether (MTBE), Ultra-Low Sulfur Diesel (ULSD) and Mobil Source Air Toxics (MSAT) (gasoline toxics) regulatory issues through analysis, Congressional testimony and interagency discussions.

FY 2000 Targets and Assessments:

No performance targets were established in FY 2000.

FY 1999 Targets and Assessments:

No performance targets were established in FY 1999.

Cooperating Internationally To Reduce Energy Related Environmental Impacts (ER 5-1)

Develop U.S. policies and approaches for international environmental agreements that impact energy production, transportation, and use. PO will lead this goal and assist the Administration in the development and analysis of U.S. proposals to reduce greenhouse gas emissions in order to further the cost-effective achievement of any domestic and international commitments to address global climate change concerns. PO will develop and coordinate U.S. efforts to support technology transfer as a means of encouraging reductions in greenhouse gas emissions internationally. PO will continue development of the U.N. Persistent Organic Pollutants agreement, following successful conclusion of the agreement in 2000. PO will contribute to U.S. efforts at the 9th Session of the U.N. Commission on Sustainable Development to produce outcomes that re-

flect U.S. policies on energy, transport, and atmosphere and will support U.S. efforts at upcoming U.N. Economic Commission for Europe (Convention for Long Range Transboundary Air Pollution) negotiations on particulates. FE and EE support this goal in the area of international renewable energy and joint implementation, and are facilitating more comprehensive information exchange from developed to developing countries on renewable energy and energy efficiency technologies. (Met Goal)

FY 2001 Results:

The U.S., along with 90 other countries, negotiated a legally-binding global treaty to ban or severely restrict the production, use and/or release of 12 persistent organic pollutants (POPs), including dioxins, furans and Polychlorinated Biphenyls (PCBs) associated with energy production. The treaty's control obligations — ambitious, yet practical for developing countries — are largely within existing U.S. environmental statutes. A proposal to ratify the treaty was transmitted to Capitol Hill by the State Department. PO also contributed to U.S. efforts at the 9th Session of the U.N. Commission on Sustainable Development to produce outcomes that reflect U.S. policies on energy, transport, and atmosphere in preparation for the World Summit on Sustainable Development (WSSD). FE and EERE supported this goal by facilitating more comprehensive information exchanges from developed to developing countries on renewable energy and energy efficiency technologies, and by assisting in the development of these technologies in developing countries.

FY 2000 Targets and Assessments:

(1) Support further development and the adoption of U.S. proposals for guidelines for implementing the flexibility mechanisms included in the Kyoto Protocol. (Met Goal)

(2) Support, through quantitative analysis and international contacts, Administration efforts to obtain meaningful commitments for reducing greenhouse gas emissions from developing countries. (Nearly Met Goal)

Plan of Action: PO staff will continue dialogue with officials in Bolivia to discuss an emissions growth target. PO staff will conduct technical exchanges with Israeli analysts. This workshop will provide the tools Israelis need to identify an emissions target. [This work has been postponed.]

(3) Lead U.S. Government technology and climate change strategy development and implementation through: (a) chairing and expanding the Annex II countries' Climate Technology Initiative which promotes the objectives of the UN Framework Convention on Climate Change (UNFCCC) by fostering international cooperation for accelerated development and diffusion of climate-friendly technologies and practices for all activities and greenhouse gases; (b) leading and facilitating the development of U.S. positions on technology issues in the climate negotiations including participation in the UNFCCC technology consultation process. (Exceeded Goal)

FY 1999 Targets and Assessments:

(1) Develop a DOE proposal for guidelines for implementing the flexibility mechanisms included in the Kyoto Protocol. (Nearly Met Goal)

(2) Support through quantitative analysis and international contacts, Administration efforts to obtain meaningful commitments for reducing greenhouse gas emissions from developing countries. (Below Expectations)

(3) Lead the U.S. Government technology and climate change strategy development and implementation through: (a) chairing and expanding the Annex II countries' Climate Technology Initiative which promotes

the objectives of the UN Framework Convention on Climate Change by fostering international cooperation for accelerated development and diffusion of climate-friendly technologies and practices for all activities and greenhouse gases; and, (b) leading and facilitating the development of U.S. positions on technology issues in the climate negotiations including participation in the UNFCCC technology consultation process. (Met Goal)

Managing Financial Resources And Physical Assets (CM 3-1)

Continue to streamline and improve operations, improve decision-making, ensure accountability, maximize departmental resources, and achieve intended results by corporately managing the Department's mission, functions, and activities. PO supports this goal by developing science and technology policies in support of Departmental missions in fundamental science, mission-driven research and development, laboratory missions and management, and international science and technology cooperation. PO will also maintain the Nuclear Materials Stewardship Initiative to ensure the life-cycle management of nuclear materials is safe, environmentally sound, efficient, cost-effective and transparent (to meet nonproliferation objectives). PO will issue by September 2001, an update to the "Multi-year Agenda for the Nuclear Materials Council" contained in the Integrated Nuclear Materials Management Plan submitted to Congress in June 2000. (Below Expectations)

FY 2001 Results:

PO met the Science & Technology part of this goal as demonstrated by the following: PO developed policies to streamline the management, administration and oversight of the technology

partnering activities of its national laboratories, and issued three DOE directives to ensure DOE-wide compliance. PO also continues to provide leadership on new technology initiatives, such as its leadership of the President's National Climate Change Technology Initiative. The Nuclear Materials Stewardship Initiative was suspended indefinitely in October 2001; therefore, the Multi-year Agenda for the Nuclear Materials Council was not accomplished. Before suspension, the Nuclear Materials Council met several times and the Nuclear Materials Stewardship Task Force met monthly to institutionalize the Nuclear Materials Stewardship Initiative. Decisions on three surplus nuclear materials were made relative to national resource designation. Other materials were being evaluated for national resource designation. A Materials Management Group Pilot Project and Phase I of the Corporate Nuclear Materials Information Management Project were underway.

FY 2000 Targets and Assessments:

No performance targets were established in FY 2000.

FY 1999 Targets and Assessments:

No performance targets were established in FY 1999.

Office of International Affairs

Cooperating Internationally To Develop Open And Transparent Energy Markets (ER 5-2)

Enhance energy security by increasing the capacity and diversity of international oil and gas producers. Promote open energy markets and increase the transparency of world oil markets. Promote deployment of clean and efficient energy systems. Office of International Affairs (IA) will work toward increasing U.S. energy-related business internationally by removing policy, legal and fiscal barriers for U.S. companies by: implementing with other APEC members, and the private sector — initiatives to promote energy sector reform, including natural gas and independent power production and reporting results to APEC ministers and economic leaders; advancing energy activities in U.S.-China Forum on Environment and development, and the goals of the joint statement, the "Energy and Environment Cooperation Initiative;" continuing to lead a regulatory reform initiative to promote economic growth through private investment in

sustainable energy development and regional integration; continuing to develop and sustain our African Energy Partnership, including with Angola, Nigeria and South Africa; continuing to promote science and technology cooperation and economic growth through private investment in developing countries in accordance with guidance by the President's Council on Science and Technology (PCAST) recommendations; continuing to lead regulatory reform initiative under a Binational Commission to promote adoption by Russian Government of transparent, fair, consistent regulations in the oil, gas and power sectors in order to attract investment; continuing to lead Western Hemispheric process of developing a vision of and plans for region's energy infrastructure in the 21st century, emphasizing a government-business dialogue and partnership; continuing coordination of the Russian-American Fuel Cell Consortium (RAFCO) which has as one of its primary goals, the opening up of the Russian market to U.S. manufactured fuel cells; continuing DOE leadership in international energy initiatives instrumental in developing an effective legal and regulatory framework for private sector energy investment and policies to encourage diversification of fuel supplies. (Met Goal)

FY 2001 Results:

IA has worked with foreign governments and other organizations to encourage market reform to promote energy development. IA hosted a meeting on energy demand, forecasts and regulation. IA convened North American Energy Working Group with Canada and Mexico and led a U.S.-Mexico working group to facilitate energy market integration. IA expanded scope of DOE-led interagency consultative group with Nigeria to enhance Nigeria's oil and gas development and began preparations for G8 Energy Ministers' Meeting. IA developed Asia-Pacific Economic Cooperation (APEC) Energy Security Initiative that was approved by APEC leaders. IA led efforts to promote development of oil and gas resources in the Caspian Sea while mini-

mizing risk of delivery disruption to the world market. IA led the effort to establish interagency Clean Energy Technology Exports (CETE) Working Group. IA organized U.S.-China Oil and Gas Industry Forum and participated in China Clean Energy Forum to promote private sector participation in the energy sector. IA spearheaded U.S. efforts to support development of production sharing framework in Russia and negotiated an Energy Services Agreement within the World Trade Organization. IA worked with the Department of State to extend the RAFCO agreement; sponsored workshops to encourage development of oil spill response plans; and engaged in successful dialogue with Chinese officials to identify priorities for cooperation in new strategic areas. DOE provided a representative to the U.S. Embassy Beijing to advance energy cooperation and support DOE programs.

FY 2000 Targets and Assessments:

(1) Continue DOE leadership in international energy initiatives that are instrumental in developing, through government-to-government efforts, an effective legal and regulatory framework for private-sector energy investment and policies to encourage development of a broad portfolio of fuel supplies. (Met Goal)

(2) Continue coordination of the Russian-American Fuel Cell Consortium (RAFCO) which has as one of its primary goals, the opening up of the Russian market to U.S. manufactured fuel cells. (Nearly Met Goal)

Plan of Action: Work continues on finalizing the fuel cell technology roadmap and the development of a joint venture to manufacture fuel cell balance of plant in Russia. The Undersecretary has been briefed on the proposed joint venture and provided a copy of the proposals for the joint venture. The Tennessee Valley Authority has also become interested in the proposal as has the Inter-

national Science and Technology Center, which is located in Moscow. Continuing cooperation with these organizations will be important.

(3) Increase U.S. energy-related business internationally by removing policy, legal, and fiscal barriers for U.S. companies by:

- Continuing to implement with other APEC economies and the private sector an initiative to promote accelerated investment in natural gas infrastructure and trading networks in the APEC region;
- Implementing the U.S.-China Energy and Environment Cooperation Initiative including coordination of interagency effort involving DOE programs, EPA, Commerce, and Office of Science and Technology Policy (OSTP) to promote rural electrification, urban air quality, clean energy sources, and energy efficiency;
- Continuing to lead a regulatory reform initiative to promote economic growth through private investment in environmentally-sound energy development and regional integration in Sub-Saharan Africa, including South Africa;
- Continuing to lead a regulatory reform initiative under the Binational Commission to promote adoption by the Russian Government of transparent, fair, and consistent regulations in the oil and gas and power sectors in order to attract investment. (Met Goal)

FY 1999 Targets and Assessments:

(1) Continue DOE leadership in international energy initiatives that are instrumental in developing, through government-to-government efforts, an effective legal and regula-

tory framework for private sector energy investment and policies to encourage development of a broad portfolio of fuel supplies. (Met Goal)

(2) Issue an initial status report on the development of a public health agenda by December 31, 1998; and a final public health agenda for each site, which reflects customer and stakeholder input, shall be issued by September 30, 1999. (Nearly Met Goal)

(3) Complete review of proposals for the second round in FY 1999, and initiate projects to design and develop advanced catalysts, electrodes, and membranes, as well as advanced separator plates and high temperature sealants under the Russian-American Fuel Cell Consortium. (Met Goal)

(4) Increase U.S. energy-related business internationally by removing policy, legal and fiscal barriers for U.S. companies. In FY 1999, the Department will: implement with other African Petroleum Exporting Countries (APEC) economies and the private sector an initiative to promote accelerated investment in natural gas infrastructure and trading networks in the APEC region; implement the U.S.-China Energy and Environment Cooperation Initiative including coordination of interagency effort involving DOE programs, EPA, Department of Commerce and the OSTP to promote rural electrification, urban air quality, clean energy sources, and energy efficiency; lead a regulatory reform initiative to promote economic growth through private investment in environmentally-sound energy development and regional integration in Sub-Saharan Africa, including South Africa; and lead a regulatory reform initiative under the Binational Commission to promote adoption by the Russian Government of transparent, fair and consistent regulations in the oil and gas, and power sectors in order to attract investment. (Met Goal)

GPRA Program Activity: Office of Inspector General

Annual Performance Plan GPRA Program Activity	DOE Office	Financial Statement Footnote	Program Element In Schedule Net Costs	NET COSTS (\$M)		
				FY 01	FY 00	FY 99
Office of Inspector General	IG	23	Inspector General	\$34	\$33	\$31

Description:

Major statutory responsibilities of the Office of Inspector General (OIG) under the Inspector General Act of 1978, as amended, are to detect and prevent fraud, waste, abuse, and violations of law, and to promote economy, efficiency, and effectiveness in the operations of the Department of Energy (DOE), including the National Nuclear Security Administration (NNSA). In addition to the broad provisions of the Inspector General Act, Congress requested the OIG to assess the most significant management challenges facing the Department. In response, the OIG initiated an analysis and issued a special report that focused on those areas that warrant increased emphasis or appear to have reached a heightened level of urgency. The OIG determined that the most serious challenges facing the Department during FY 2001 can be categorized as follows:

- Effective Establishment of the NNSA;
- Contract Administration;
- Energy Supply/Demand Technology;
- Environmental Remediation (including radioactive waste storage);
- Human Capital;
- Information Technology;
- Infrastructure;
- Property Controls and Asset Inventories;
- Safety and Health; and,
- Security

Promoting The Effective, Efficient, And Economical Operation Of The Department Of Energy, Including NNSA, Through Audits, Investigations, Inspections And Other Reviews (CM 5-1)

Complete required financial audits by designated due dates in the law. Address emerging issues by responding to Departmental priority requests, answering Congressional inquiries, conducting joint reviews with other Federal agencies, testifying before Congress, and assisting the Justice Department in the Qui Tam and other cases. Evaluate the results of the Department's use of performance measures to monitor programs and operations. Plan the OIG audit, investigation, and inspection workloads by focusing on the issues that are critical. (Exceeded Goal)

FY 2001 Targets and Results:

Target: Complete the required annual financial statement audits by designated due dates in the law.

Result: The OIG transmitted the auditor's report on the Department of Energy's Fiscal Year 2000 financial statements to the Department on February 16, 2001, ahead of the March 1 statutory due date. (Exceeded Goal)

Target: Initiate at least 60 percent of the audits planned for the year and replace those audits not started with more significant audits which identify time-sensitive issues needing review.

Result: The OIG initiated 98 percent of its audits planned for the year. (Exceeded Goal)

Target: Initiate at least 70 percent of inspections planned for the year, and replace those not started with inspections having greater potential impact.

Result: The OIG initiated 80 percent of the inspections planned for the year, in addition to initiating a number of unplanned inspections based on the identified potential impact.

Target: Obtain judicial and/or administrative action on at least 35 percent of all cases investigated during the fiscal year.

Result: Of all cases investigated, the OIG obtained judicial and/or administrative action on 38 percent.

Target: Obtain at least a 70 percent acceptance rate on criminal and civil cases formally presented for prosecutorial consideration.

Result: During FY 2001, the OIG obtained a 72 percent acceptance rate on cases presented for prosecutorial consideration.

Target: Complete the milestones listed in the corrective action plan for the management challenge of inadequate audit coverage. (FMFIA)

Result: The OIG will continue to request additional resources to provide adequate audit coverage through the Department's budget process. The OIG met the goal for the five critical milestones listed in the corrective action plan for the management challenge of inadequate audit coverage. (FMFIA)

FY 2000 Targets and Assessments:

(1) Complete the required annual financial statement audits by designated due dates in the law. (Met Goal)

(2) Complete at least 60 percent of the audits planned for the year and replace those audits not started with more significant audits which identify time sensitive issues needing review. (Exceeded Goal)

(3) Initiate at least 80 percent of inspections planned for the year and replace those not started with inspections having greater potential impact. (Met Goal)

(4) Obtain judicial and/or administrative action on at least 35 percent of all cases investigated during the fiscal year. (Exceeded Goal)

(5) Obtain at least 75 percent acceptance rate on criminal and civil cases formally presented for prosecutorial consideration. (Below Expectations)

Plan of Action: The OIG referred 25 cases for prosecution during the year with a 68-percent acceptance rate. The OIG will continue to expand its liaison and cooperative work with the Department of Justice. The OIG will continue to focus its investigative resources on cases with the greatest potential for positive impact on the Department and prosecutive merit.

FY 1999 Targets and Assessments:

(1) Render, by designated due dates, an opinion annually on the Department's consolidated financial statements, system of internal controls, and compliance with laws and regulations. (Met Goal)

(2) Complete at least 60 percent of the audits planned for the year and replace those audits not started with more significant audits which identify time-sensitive issues needing review. (Met Goal)

(3) Focus investigations on allegations of serious violations of Federal law by: obtaining judicial and/or administrative action on 30 percent of all cases in open status during the fiscal year; and obtaining acceptance of 75 percent of the cases presented for prosecution. (Met Goal)

(4) Plan and, on a timely basis, conduct reviews based on assessment of risk and/or benefit to key Department programs. (Met Goal)

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