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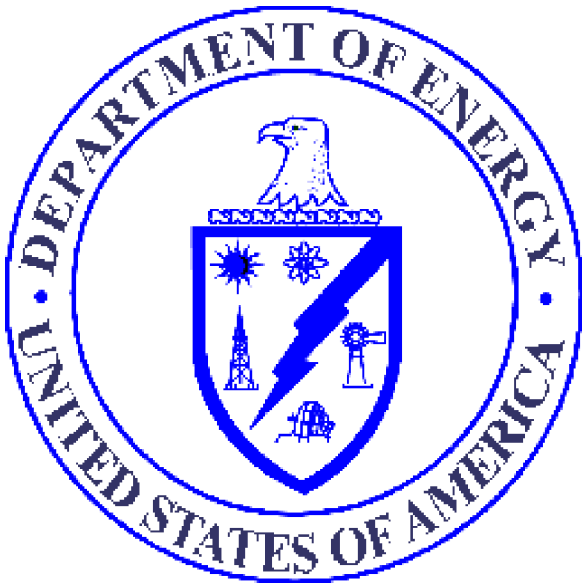
U. S. Department of Energy



Fiscal Year 1997
Annual Report

FY 1997 ANNUAL REPORT

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DOE is interested in the comments and suggestions of those who read this document. The Reader Response Sheet at the end of this document is designed to provide information on ways to improve this report and make it more useful to you, our valued customer. Please take a few minutes to complete the response sheet and forward it as indicated.

February1998

Message From the Secretary

The Government Management Reform Act and the Government Performance and Results Act both have the objective of ensuring that Federal government agencies are accountable to American taxpayers. This report, the Department of Energy's FY 1997 Annual Report, provides a clear accounting of the return on the investment entrusted to the Department of Energy.

Unlike previous annual reports prepared by the Department, this report is fashioned along the lines of a corporate report to the shareholders. Not only does this report contain audited financial statements for the fiscal year but it also describes what our shareholders, American taxpayers, received in the way of services and contributions to the important National goals this Administration and the Department have promised to provide.

I am personally committed to the principles of the President's National Performance Review to reinvent government by changing the way we do business. This report is another measure of this commitment. It provides a progress report on how the Department is serving the country and how we are doing it for much lower cost. On September 30, 1997, I submitted a strategic plan which documents the important goals and objectives of the Department with clear measures that would indicate our progress. Future budgets and reports on our results will be based upon this plan.

Everyone, including the President, the Congress, and the American taxpayer, wants our Federal government agencies to strive for excellence and efficiency in all that we do. It is my hope that this report can help to establish an open and collegial effort to ensure this outcome.

Federico Pena
Secretary of Energy

OVERVIEW

Introduction

One of the greater challenges the Department of Energy (DOE) has faced in recent years is creating a government that works better and costs less. To meet this challenge, DOE has become a more streamlined agency: one that is responsive to its many stakeholders, and leads the way in meeting some of our Nation's most important goals. Today we are providing better products and services at a lower cost to U.S. taxpayers. Our successes in FY 1997 have proven this agency to be a major contributor to the Nation's economic growth, a secure energy supply, a cleaner environment, scientific advancement and technological development, and a reduced worldwide nuclear threat.

We continued to deliver measurable results that build on the Administration's progress in accelerating the cleanup of our weapons production sites; strengthening nuclear nonproliferation; replacing underground testing with science-based stockpile stewardship; promoting clean, efficient, and abundant energy supplies; and enhancing the Nation's economic competitiveness through advancements in science and technology.

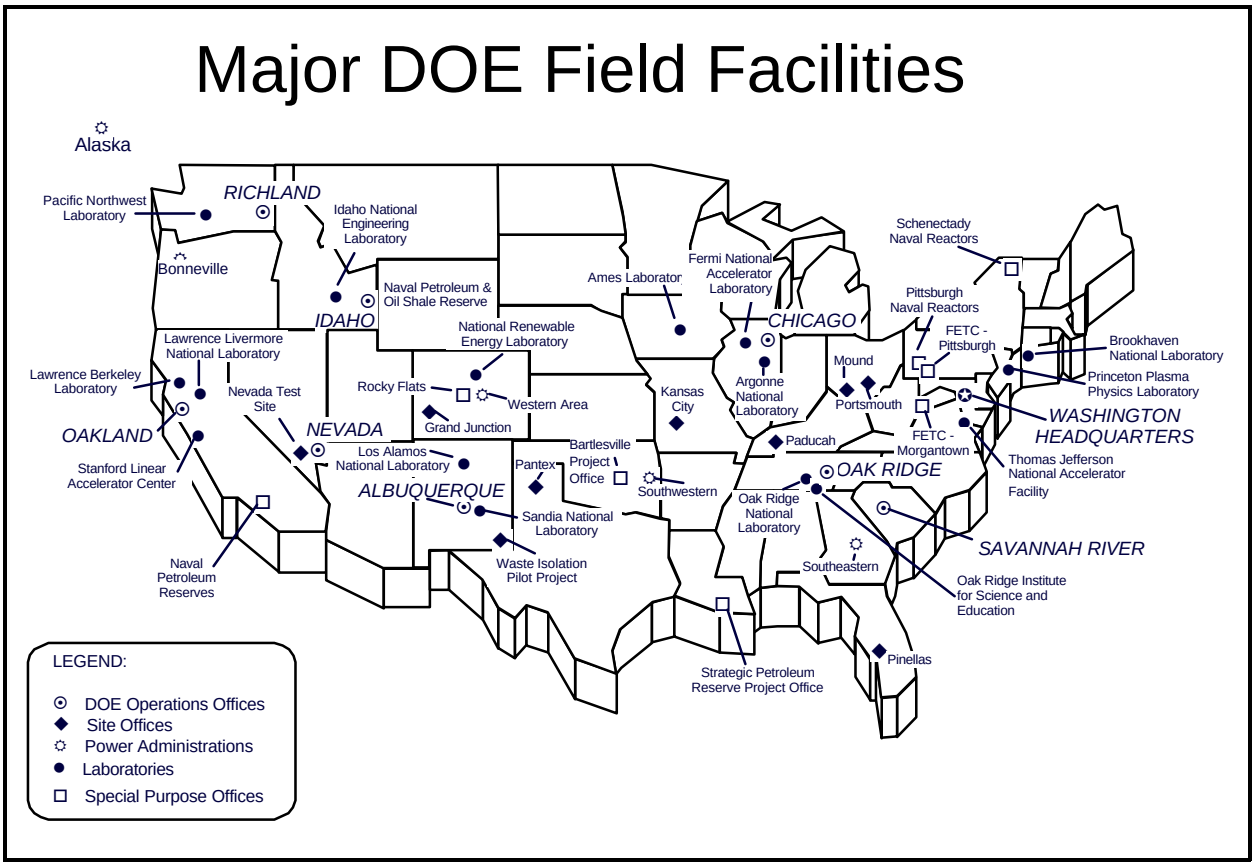
Our History

The Department of Energy has been in formal existence for only twenty years, yet its history extends far back to days of the Manhattan Project, when security requirements led to the establishment of the Manhattan Engineering District in 1942, under the Army Corps of Engineers, to manage the development of the first atomic bomb. After World War II, with atomic weapons a reality, Congress created the Atomic Energy Commission (AEC) in 1946 to direct the design, development, and production of nuclear weapons. The AEC's mission also extended into developing nuclear reactors, initiating major efforts to commercialize nuclear power, and regulating the growing industry.

In 1975, Congress replaced the AEC with two separate agencies: the Nuclear Regulatory Commission, which was assigned the licensing and regulatory functions of the abolished AEC, and the Energy Research and Development Administration, created to manage the nuclear weapons, naval reactors, and energy development programs, as well as to research the environmental and safety aspects of energy technologies. During this period, the United States found itself faced with an energy crisis, emphasizing the need for one cabinet-level department to coordinate all Federal energy policy and programs. Congress passed legislation to create the Department of Energy in October 1977, bringing together many important functions under one agency. Today, the Department manages a vast array of energy programs and a nationwide complex including headquarters organizations, operations offices, field offices, national laboratories, power marketing administrations, special purpose offices, and sites now dedicated to environmental cleanup.

Our Mission

Since the publication of the Department of Energy's first Strategic Plan in April 1994,



our activities have been conducted within a framework and vision for accomplishing our overall agency mission and the missions we identified through the five business lines that encompass everything we do: energy resources, national security, environmental quality, science and technology, and economic productivity.

The Department of Energy's mission is 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. We identified the following five business lines through our initial comprehensive strategic planning process:

Energy Resources: Encourage efficiency and advance alternative and renewable energy technologies; increase energy choices for all consumers; ensure adequate supplies of clean, conventional energy; and reduce U.S. vulnerability to external events.

National Security: Support and maintain the safety and reliability of the enduring nuclear stockpile without nuclear testing; safely dismantle and dispose of excess weapons; and provide the technical leadership for national and global nonproliferation activities.

Environmental Quality: Reduce the environmental, safety, and health risks and threats from DOE facilities and develop the technologies and institutions required for solving domestic and global environmental problems.

Science and Technology: Use the unique resources of the Department's laboratories and the country's universities to maintain U.S. leadership in basic research; increasingly focus applied research to support the Department's other business lines; and maintain world technical leadership through long-term, systemic reform of science and mathematics education.

Economic Productivity: Promote economic growth and the creation of high-wage jobs through research and development partnerships with industry; drive products into the domestic and international marketplace; and help industry become more competitive by cost-effectively shifting from waste management to resource efficiency and pollution prevention.

Corporate Management

We recognized through our strategic planning process that a streamlined Department required the key elements of successful business practices. Determining how we conduct our businesses is as essential to our success as determining the missions themselves. These elements are critical to our success and are integrated into every business line:

Communication and Trust: We must communicate information and build trust within the organization and with our stakeholders and customers.

Human Resources: We must recruit, train and develop, reward performance, motivate, and promote diversity within our workforce.

Environment, Safety and Health: We must ensure the safety and health of workers and the public, and we must protect and restore the environment.

Management Practices: We must implement the best practices in allocating, spending, and accounting for resources and procuring, producing, and contracting for goods and services.

In FY 1997, the Department undertook a planning effort to produce a new strategic plan to take us into the 21st century. This plan also meets the requirements of the Government Performance and Results Act (GPRA). The new plan, released on September 30, 1997, has been significantly improved through a very close consultation process with Congress, our customers and stakeholders. Based on this plan, beginning with the FY 1998 budget cycle, the Department will conduct its activities within a new framework of four business lines, each with a strategic goal. Economic productivity continues to be an element of our activities, but will now be incorporated in the remaining four business lines. In the spirit of the National Performance Review, we identified a fifth strategic goal addressing corporate management. This fifth goal encompasses three areas critical to the success of our business lines: 1) environment, safety and health; 2) communication and trust; and 3) management practices (including human resources). Because the changes just described weren't initiated until FY 1998, the structure for this FY 1997 annual report will include economic productivity as a separate business line and human resources as a separate critical success factor.

As we continue our path forward into FY 1998, the Department of Energy will continue to build on its accomplishments with its new Strategic Plan to bring America into the 21st century. We can be proud of the successes we have achieved over the past four years, but we must continue to look

forward to new opportunities and challenges and to reassess our unique capabilities. Our priorities may change, but our focus remains the same— deliver results in the most efficient manner that promise a safer, cleaner, more productive world for ourselves and future generations.

Energy Resources

Clean, secure, affordable energy supplies are essential to the well-being of all Americans and to our Nation's economic health. Every day Americans depend on energy, usually without considering the impact its benefits have on their lives until events like a major oil disruption cause domestic and international turmoil. During FY 1997, we continued to develop and promote a comprehensive energy strategy which will result in an energy efficiency and renewable energy portfolio that 1) cost-effectively addresses critical domestic pollution prevention and energy security needs; 2) advances the efficient and environmentally responsible production, transportation, and use of domestic fossil fuels and other conventional energy sources; 3) promotes development of sustainable energy technologies with high export potential; 4) promotes an equitable system of energy supply and end use; 5) ensures that Americans enjoy sustainable, secure, and competitively priced energy services; and 6) reduces U.S. vulnerability to energy supply disruptions.

Energy security and economic growth depend on an abundant, affordable energy supply. The Department has many successes in advancing the Administration's commitment to a strong domestic energy industry, while promoting the use of clean energy technologies. The Federal Energy Regulatory Commission (FERC) focused much of its efforts in FY 1997 to make regulation more effective and integrate market forces into the overall regulatory model. FERC's regulatory activities provided new standards for market-based rates that encourage power companies, including those in the electricity, natural gas, and oil industries, to identify competitive services and receive market-based regulation. Improved environmental programs at FERC were also achieved through streamlining environmental reviews, stakeholder involvement, and incentives for voluntary compliance.

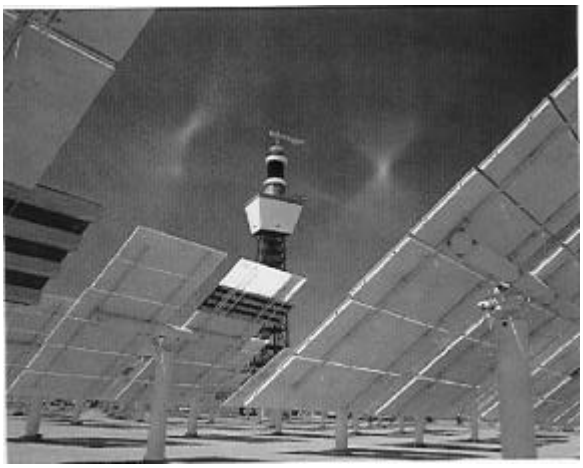
Energy demand is ever-increasing, and domestic production is essential to economic security. The demand for natural gas continues to rise, and coal remains the largest source for electric power. The Domestic Natural Gas and Oil Initiative has strengthened this vital sector of our economy by removing barriers to domestic production. Promoting energy efficiency is a cornerstone of the Nation's sustainable energy strategy goals of maximizing energy productivity, preventing pollution, and ensuring America's energy security. Our energy-efficiency programs are producing tangible results that can be measured in cost savings, job creation, and reduced oil imports.

The Department promotes energy efficiency by transferring proven energy efficiency measures to reduce government energy consumption and the resulting pollution, as well as through investments in renewable energy technology development. We helped attract more than $80 million of private sector investment to cost share our R&D in renewable technologies. In FY 1997, we weatherized more than 60,000 low-income homes, bringing the total number of homes weatherized since 1977 to over 4.4 million. We established regional umbrella energy

contracts any Federal agency can use to simplify procurement, accelerate private sector investment, and increase energy savings at Federal facilities. In the transportation sector, we are leading the government's R&D effort for building an 80 mile-per-gallon family car, and delivering technologies that will improve the fuel economy of diesel engines while reducing emissions. In FY 1997, we expanded the Clean Cities program, which promotes the use of alternative fuel vehicles, from 50 to 57 cities.

The Department continues to support the President's Climate Change Action Plan to reduce carbon emissions and international climate change initiatives under the United Nations Framework Convention on Climate Change. In FY 1997, we launched a campaign in six major cities with national retail chains to promote high-efficiency appliances. We also added 60 partnerships to the Rebuild America program to make building energy-efficiency improvements in cities across the United States, and over 200 new industrial partners to the Climate Wise program that challenges industry to reduce greenhouse gas emissions. We awarded $4.6 million for 13 new grants in the National Industrial Competitiveness for Energy, Environment, and Economics program, known as NICE^3. This innovative program promotes industry and government cost-shared projects to produce the next generation of cost-effective, pollution-prevention technologies.

In the energy security area, we are reducing U.S. vulnerability to energy supply disruptions with investments in the Nation's natural gas and oil industry recovery methods, and with regulatory reforms to boost the production of natural gas and oil. The Strategic Petroleum Reserve (SPR) is a key component of our energy security strategy. In FY 1997, we increased drawdown capability to 3.7 million barrels per day and inventory availability to 555 million barrels. We also initiated further efforts in the infrastructure life extension program to ensure the SPR maintains high reliability and availability of its critical drawdown systems well into the future.



Solar Two is a 50/50 cost-shared project between DOE and industry partners. DOE's Solar Thermal Electric Program is collaborating with the private sector to develop new solar technologies to meet the huge commercial potential for solar power.

To promote the development of clean power plants to contribute to the nation's electrical capacity and reduce electricity costs, the Department supports a new generation of natural gas, biomass, and clean coal power technologies. Nuclear power is also an important contributor to power production in the 21st century, and we continue to support the certification of standardized Advanced Light Water Reactors to ensure that nuclear power is a viable option for electricity production.

National Security

Although the post-Cold War era has brought about many changes in the Department's national security focus, the Department of Energy maintains a resolute commitment to

its mission of supporting a secure national defense. In August 1995, President Clinton, emphasizing his continued support and confidence in science-based stockpile stewardship to maintain a safe, secure, and reliable stockpile, announced that the United States would pursue a zero-yield Comprehensive Test Ban Treaty.

During FY 1997, additional progress was made in implementing the science-based Stockpile Stewardship and Management Program. The milestone of a one-trillion floating point calculations per second (teraflop) computer was installed in June and will support next-generation weapons simulations. The National Ignition Facility construction project is on schedule, but the Dual Axis Radiographic Hydrodynamic Test facility's construction schedule will be changed due to the cost of the selected technology for the second axis. Key stewardship experiments at the Los Alamos Neutron Science Center and the two planned subcritical experiments at the Nevada Test Site were successful.

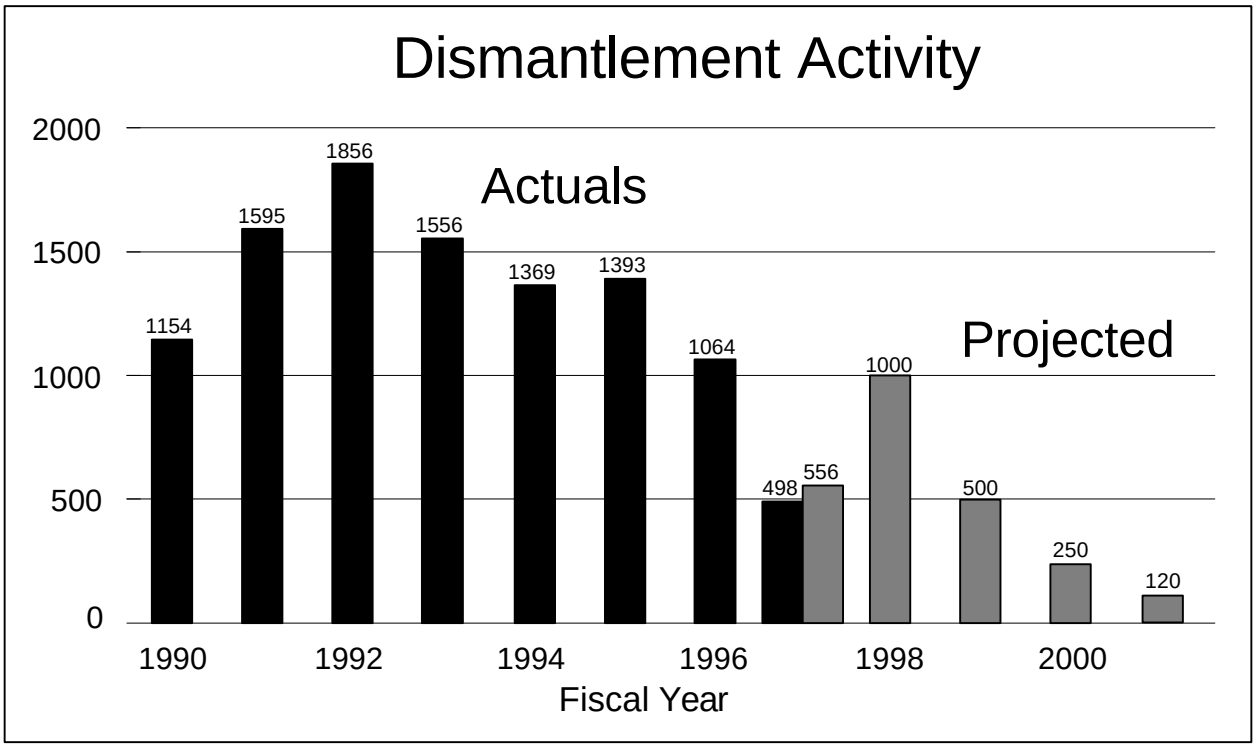
The Department ensured the safety and reliability of the nuclear weapons stockpile through continuing and enhanced surveillance of the weapons, meeting virtually all Department of Defense annual weapons alteration, modification, and surveillance schedules; completing an initial risk assessment for each enduring stockpile weapon; completing the design assessment phase of the W87 Life Extension Program in February 1997; and completing the 1997 Annual Certification Technical Reports that allowed the Department to recertify that the stockpile is safe and reliable.

Planned progress was made toward developing a new production source of tritium by 2005 by moving forward on both technology tracks using a commercial reactor or irradiation services and making accelerator design option decisions. The Department, however, did not approve the commercial reactor's tritium extraction facility project baseline in September as originally planned.

In FY 1997, the Department reduced the nuclear weapons stockpile by safely dismantling 498 warheads without adversely impacting the environment or public safety and health. The shortfall from an expected level of 556 weapons was due to a safety concern over the detonator removal process for the W69 warhead.

Workers dismantle nuclear warheads. DOE is committed to dismantle nuclear warheads that have been removed from the U.S. nuclear stockpile without impact to the environment, worker and public safety, or health.

The Department's national security mission includes activities that support U.S. arms control, national and global nonproliferation goals, and nuclear threat reduction to meet the new challenges posed by threats to our



national security. We are working closely with other nations to protect existing nuclear material and to prevent additional production of materials.

We have made progress in dealing with U.S. weapons-usable fissile materials; protection, control, and accounting for materials (MPC&A) in Russia, the Newly Independent States, and the Baltics; limiting the use of highly enriched uranium (HEU) and plutonium (Pu) worldwide; and establishing transparent and irreversible reductions of fissile material worldwide. A path forward for storage and disposition of U.S. weapons-usable fissile materials was announced in January 1997 and progress is being made on the selected path. Through cooperation with the Russian Federal Nuclear Radiation and Safety Authority, MPC&A upgrades on information systems were accomplished this year. Three shipments of U.S.-origin HEU were received, and 3,550 spent fuel rods were received from the Democratic People's Republic of Korea (DPRK). These rods were canned in preparation for safeguards controls by the International Atomic Energy Agency (IAEA). We successfully negotiated expansion and began implementation of transparency agreements as part of the purchase of 500 metric tons of HEU from dismantled former Soviet nuclear warheads.

The Department strengthened the nuclear nonproliferation regime by providing equipment, technologies, and expertise to IAEA and the United Nations Special Commission (UNSCOM) to monitor and inspect North Korea and Iraq's compliance with the Nuclear Non-Proliferation Treaty obligations. Eleven agreements for safeguards cooperation between DOE and foreign governments or organizations were implemented, and U.S. weapons-grade materials were placed under IAEA safeguards during FY 1997. The safety of Soviet-designed nuclear power plants in Russia, Ukraine, and central and Eastern Europe was improved by addressing endemic safety problems, and the Department assisted

a multi-national effort to shutdown the Chornobyl nuclear power plant by the year 2000 to reduce environmental and safety threats.

Finally, the Department made progress on reducing the size of the nuclear weapons complex and mitigated the impacts on workers and communities affected by contractor workforce restructuring.

Environmental Quality

Today, in the post-Cold War era, we are faced with the largest environmental cleanup in U.S. history. Fifty years of operating weapons-related facilities left a legacy of unacceptable risk to the environment and the health and safety of the American people. The Department of Energy is committed to minimizing the environmental risks posed by its past and current activities, as well as reducing harmful environmental effects associated with energy production, delivery and use. We have been aggressively addressing both the immediate and long-term environmental and health risks of the Department's former weapons production complex, making progress in our efforts to resolve issues surrounding the safe disposal of civilian and military nuclear spent fuel and high-level waste, accelerating cleanup to address high and adverse impacts on the human health of surrounding communities, and seeking innovative approaches to clean up current pollution and prevent future pollution.

In 1997, the Environmental Management Program initiated the implementation of its "2006 Plan" to complete the cleanup of most of our contaminated sites over the next 10 years. The first surplus weapons production site, the Pinellas Plant, was closed and turned over to Pinellas County in September 1997.

We accelerated the complete deactivation of the PUREX plant at the Hanford Site from the original schedule of FY 1998 to FY 1997, with an estimated cost reduction of $43.4 million. To safely deactivate surplus non-weapons nuclear facilities, the Department removed the remaining fuel from the Experimental Breeder Reactor II in Idaho and completed the construction of the Sodium Processing Facility to prepare wastes for ultimate disposition.

The treatment, storage and disposal of radioactive wastes is an on-going effort that is indicating significant progress. In FY 1997, we treated approximately 6,000 cubic meters of low level waste and disposed of approximately 38,000 cubic meters of low level waste. We also produced more than 270 canisters of vitrified high level waste for future repository disposal. In December 1996, the Department awarded a contract for an advanced mixed waste treatment facility at the Idaho National Engineering Laboratory.

The Department completed cleanup actions at 10 Environmental Management geographic sites to bring the cumulative total of completed sites to 62 out of 132 sites to be remediated. We completed 140 facility decommissionings to bring the total to 380 out of 1,090 facilities, and completed remedial actions at approximately 485 release sites, now more than one-third of all release sites planned for remedial action. A primary goal of our environmental quality business is to prevent future pollution to minimize the impact of the Department's operations on the environment, reduce costs, and improve efficiency. In FY 1997, we completed more than 100 pollution prevention projects and pollution prevention plans for 30 reporting sites.

In FY 1997, the DOE Civilian Radioactive Waste Management Program, which is charged with disposing of the nation's spent nuclear fuel and high-level radioactive wastes, refocused its activities to provide deliverables consistent with reduced funding and revised policies. We reached an important milestone when we completed the excavation of the Exploratory Studies Facility main 5-mile loop at Yucca Mountain on April 25, 1997. DOE also submitted a Topical Safety Analysis Report to the Nuclear Regulatory Commission (NRC) on May 1, 1997. This report for a non-site specific Phase I interim storage facility design is currently under a detailed technical review by the NRC and will assist in maintaining a readiness capability should interim storage be authorized by legislation.

Post holeout activities at the Exploratory Studies Facility at Yucca Mountain. The facility's 5-mile tunnel was completed in April 1997 as research continued to determine the site's suitability for a permanent repository of commercial nuclear waste.

Science and Technology

The United States is globally recognized as a leader in science and technology, and the Department of Energy plays a major role in maintaining this leadership. Our science and technology mission is to utilize our reservoir of scientific and technological assets and capabilities to conduct world class basic and applied research that will advance U.S. security and economic productivity by supporting a broad national science and technology portfolio. The Department draws upon an extensive network of national laboratory expertise in science and technology that DOE and our predecessor agencies have developed over the past 50 years. The work of our laboratories' 30,000 scientists and engineers provides the foundation for success in all our missions. All of DOE's key programs depend on the laboratories' award-winning research to pave the way for a sustainable energy future, enhanced environmental quality, economic growth, and a smaller, safer nuclear stockpile.

Our contributions to technological development were recognized by our winning 36 of R&D Magazine's "R&D 100" Awards in 1997. The number won by our laboratories since the award program began in 1963 is 453, the most awarded by far to any single organization and twice as many as all government agencies combined. Previous winners of this prestigious award, presented to the year's most outstanding technological developments with commercial potential, include such well-known products as antilock brakes, the VCR, the automated teller machine, and the cancer-fighting drug Taxon. This year's award-winning innovations ranged from supercomputing to the biological recycling of tires, reflecting the breadth of resources within the national laboratories. They also reflect our collaborative efforts. Five awards were the results of collaboration among the laboratories and 20 were shared with industry, including small business.

The Department of Energy provides and operates major user facilities for DOE research, as well as partnerships with industry and the scientific community. These facilities include synchrotron radiation sources, neutron sources, and electron beam microanalytical instruments which are essential forefront research tools that scientists use to advance knowledge and develop new products, materials, and manufacturing processes. In FY 1997, we achieved new milestones in the number of hours used at DOE's basic energy science facilities including the Stanford Synchrotron Radiation Laboratory, the National Synchrotron Light Source, the Advanced Photon Source, the Advanced Light Source, the Intense Pulse Neutron Source, the Los Alamos Neutron Scattering Center, and the High Flux Isotope Reactor.

The Department continues to pursue international collaborations on large-scale science projects to explore the frontiers of high energy physics. In FY 1997, we completed negotiations and signed the "International Cooperation Agreement Between the European Organization for Nuclear Research (CERN) and the Department of Energy of the United States of America and the National Science Foundation of the United States of America Concerning Scientific and Technical Cooperation on Large Hadron Collider Activities." We are also working on the next-generation, high power, pulsed spallation neutron source, now in planning at Oak Ridge National Laboratory. This

Four DOE laboratories were jointly recognized with an R&D 100 award for their research into a new chemical process that uses a mutant bacterium created through genetic techniques. The laboratories signed a $7 million cooperative research and development agreement with a Pennsylvania chemical company to develop the process into a cost-effective source of commercial chemicals.

year, we completed a peer review of a Conceptual Design Report by 60 independent, world-wide experts.

Our science and technology activities are essential to missions of other Federal agencies. In FY 1997, we supported the National Aeronautics and Space Administration's (NASA) space exploration efforts by providing power systems. We designed, fabricated and assembled radioisotope thermoelectric generators and radioisotope heater units for NASA's Cassini and Mars Pathfinder missions. We supported the Presidential Initiative on the Next Generation Internet, a multi-agency

effort that includes the Defense, Energy, and Commerce Departments, NASA, and the National Science Foundation. In FY 1997, we worked with these agencies through coordinated research activities to develop an implementation plan to build a foundation of computer network technology applications for the future. Our human genome research is conducted through coordinated efforts with the National Institutes of Health and the international community. Our research is advancing the state of genomic research by increasing the speed and quality of DNA sequencing and improving quality and efficiency of data entry into public data bases.

Our scientific research efforts support the investigation of the causes of climate change to predict if and how energy production and use can affect the global and regional environment. With a budget of $40 million annually, the Atmospheric Radiation Measurement (ARM) program is the Department's largest contribution to the U.S. Global Change Research program. In FY 1997, we dedicated the new ARM site on the North Slope of Alaska to help us better understand clouds and energy flows in the Arctic region. The data gathered at this new site will be used to refine the computer models that predict global climate change.

Economic Productivity

The Department's emphasis on scientific research and development is helping us realize our vision for the Nation's economic growth. We are partnering with U.S. industry to advance technological development using our laboratories' core competencies in areas such as energy and environmental technologies, advanced materials development, and high-performance computing. Our partnerships with U.S. industry are providing sustainable, clean, and economical energy technologies throughout the world. They are leading to new market opportunities and the creation of high-wage jobs. The new technologies that we have helped develop and bring to market will keep American industry competitive in the global market and enhance energy security, reduce energy costs, and protect the environment. By accessing capabilities and talent found in our laboratories, industrial partners gain valuable benefits, such as access to unique research facilities. At the same time, the Department lowers the cost of its mission R&D and keeps vital technological capabilities at the leading edge.

Developing nations are providing the United States a profitable opportunity as they begin to invest in industry to fuel their economic growth. Exporting our technologies is beneficial both to U.S. industry, as sales of its products increase, and to the nations that invest in them, as they strive to ensure a clean, more productive future. In FY 1997, we helped remove barriers to U.S. companies in coal technology and energy efficiency and renewables markets, including those in China, Brazil, India and South Africa. We opened oil, gas, energy efficiency and renewable technology opportunities for U.S. companies in Ukraine and initiated a forum for Arctic oil and gas practices with Russian associations.

Here at home, we are working with the most energy-intensive industries to focus cooperative research, increase energy and resource efficiency, and improve U.S. competitiveness. In October 1996, we signed a partnership agreement with the U.S. aluminum industry and signed a similar agreement with the chemical industry last February. The steel, glass, metalcasting, and forest products industries are also part of this

program, known as "Industries of the Future".

We are also working to deliver the benefits of efficiency and renewable energy R&D to U.S. consumers by reducing their energy bills, improving the economy, preventing pollution, and improving the environment. In FY 1997, our programs saved $10 billion in consumer energy costs in homes, buildings, businesses, industries, and vehicles. We saved the Federal government over $700 million in energy costs. These investments have helped the United States avoid 15 million tons of pollutants from energy use. We are also developing a plan to increase the energy efficiency of buildings through the adoption of an approach the industry calls system integration or "whole buildings." Ultimately, the plan will result in 50 percent more efficient new homes and commercial buildings and 20 percent more efficient existing homes.

Small business is the backbone of our economy and the Department plays a role in facilitating the growth and development of small businesses. We developed a comprehensive Departmental strategy to provide increased procurement opportunities for small business. The strategy includes co-sponsoring training and technical assistance seminars with other agencies to exchange lessons learned and innovative initiatives, expanding participation in the small business Mentor-Protégé Program, and conducting a comprehensive subcontracting plan review to assure compliance under our contract reform diversity clause provisions.

Corporate Management

The corporate management goals and objectives for FY 1997 reflected our commitment to adopting the best business practices and were key indicators of the Department's performance in carrying out our missions. They ensured that we place the highest priority on protecting the environment and the health and safety of our workers and the public; that the American people have trust in and access to the Department's activities; that we used the best-in-class resource management and procurement practices, and that we treated our employees as our most valuable resource.

Communication and Trust

Since the announcement of the Department's Openness Initiative four years ago in which we pledged to replace the Cold War culture of secrecy with one of openness, communication and trust, the Department has led this unprecedented effort to ensure the American people have trust in government and that it is accountable to citizens. In the last 4 years, we have declassified thousands of documents, established an interagency telephone helpline in response to the demand for information, and developed OpenNet, an Internet-based capability that enables the public to electronically search and retrieve documents. In FY 1997, we reviewed 2.3 million pages of historically significant national security records 25 years or older and declassified 38 percent of these documents. In March 1997, Secretary Peña announced an important milestone in the openness effort with the release of the document, "Building Public Trust" in which commitments and actions directed by President Clinton were outlined to respond to the recommendations of his Advisory Committee on Human Radiation Experiments.

In FY 1997, we reviewed an additional 400,590 documents for potential declassification under the Atomic Energy Act and Executive Order 12958. We

continued to develop techniques to improve delivery of our services and products to customers and stakeholders by improving our information management systems. We are working to eliminate backlog in Freedom of Information Act (FOIA) requests. Stakeholder involvement is also essential to the success of our programs. The Environmental Management Program ensures that decisions consider the input of site-specific advisory groups which we increased this year to 13 Site-Specific Advisory Boards. We completed a third national survey of our stakeholders' attitudes, needs, and expectations of the Department to assess our progress against previous results. In FY 1997, 9 DOE organizations conducted a survey of a total of 6,374 customers, more than twice the number as in FY 1996. Although more than 75 percent of respondents were satisfied or very satisfied with our products and services, these results did not indicate an increase in customer satisfaction from the FY 1996 level.

Human Resources

The Department continuously strives to provide an environment where teamwork, trust, openness, pride and respect are standard practices, and excellent performance is rewarded. We provide meaningful work opportunities and implement innovative compensation and personnel initiatives to attract and retain a diverse and well-trained workforce, capable of carrying out our missions. To improve the technical qualification of our personnel, we implemented tracking systems in FY 1997 which ensure that our employees meet or exceed applicable Technical Qualification Standards and report on actions to address the critical unmet technical safety needs previously identified. We are streamlining the management structure while ensuring we maintain workforce diversity. In FY 1997, we reduced the number of supervisors by an additional 24 percent and decreased the number of employees in senior-level positions by 220. At the same time, we issued quarterly reports on the Diversity Program Monitoring system and implemented the Hispanic Outreach Initiative. For those employees requiring transition assistance to minimize the impacts of Headquarters downsizing, we expanded our services to include 10 specialized 2-day workshops and developed an outplacement and career development tracking system.

Environment, Safety and Health

Reinventing our agency also demanded we reexamine our priorities. We recognized that making the health and safety of our workers and the public and protecting the environment must be one of our highest priorities in conducting our business. DOE leadership confirmed that there will not be a trade-off between success in our missions and environment, safety and health. We have made progress in identifying and managing the hazards across the Department's complex, taking swift and unprecedented actions when necessary to rebuild trust and to make environment, safety and health a priority. In February 1997, Secretary Peña announced the termination of the Department's contract with Associated Universities for management of Brookhaven National Laboratory due to environment, safety and health concerns. During the next 10 months, the Department and the Environmental Protection Agency conducted an intensive review of environmental, safety and health activities at Brookhaven, while completing one of the fastest processes for selecting a new management and operating contractor for a national laboratory. These efforts reflect this Administration's commitment to fully integrating safety and environmental protection into scientific

research in the Department's network of national laboratories and sites.

Environment, safety and health considerations are today an integral component of everything we do, and every individual working for the Department, from Federal employees to subcontractors, is now engaged in our efforts to ensure a safe workplace and a clean environment. In August 1997, seven DOE sites were awarded Vice President Gore's Hammer Award for participation in a Department-wide initiative known as Enhanced Work Planning to improve safety, increase efficiency, and reduce costs.

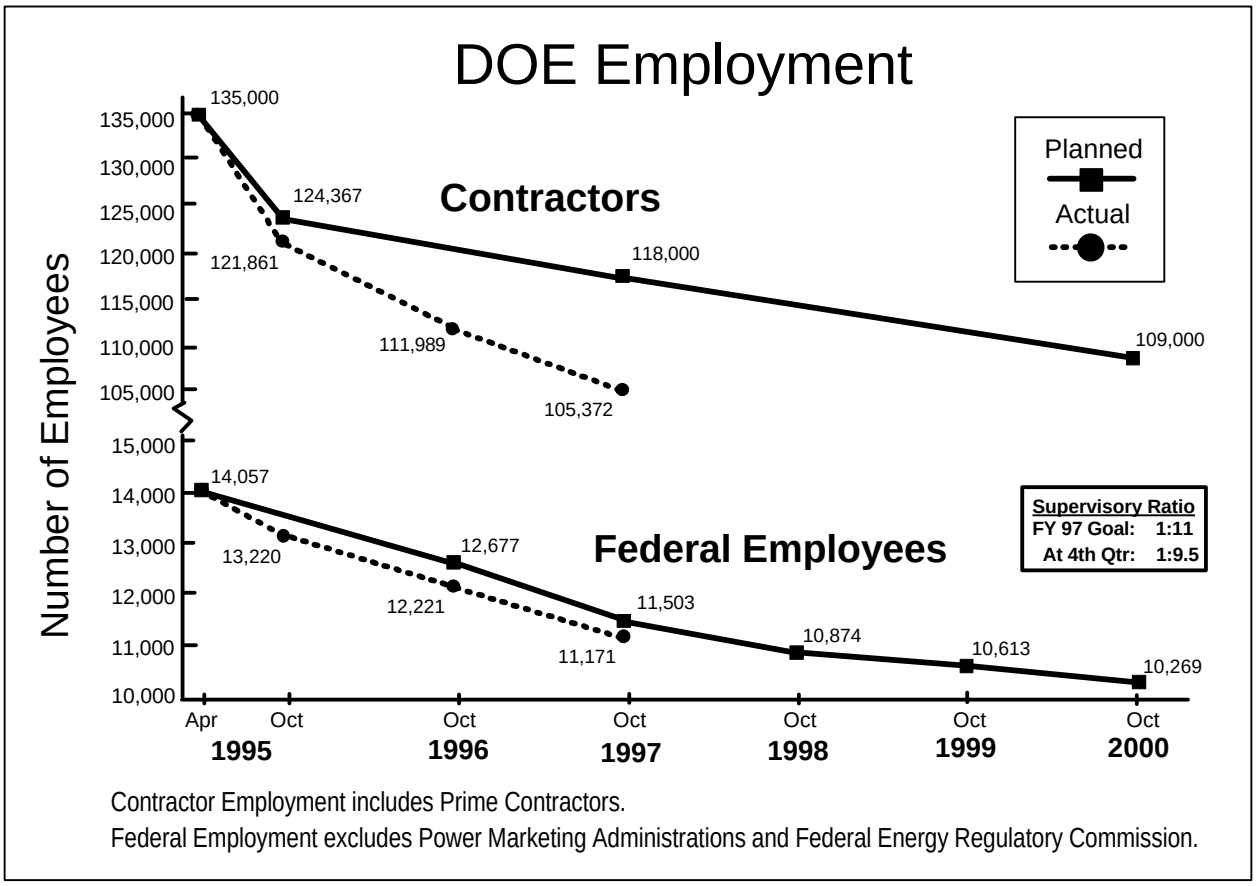
We continue to shift from a reactive approach to an emphasis on prevention and excellence in protecting worker and public safety and health and in achieving environmental standards. In FY 1997, three baseline assessments were completed for a comprehensive medical follow-up program for former workers who may have been exposed to hazardous substances. Our records related to environment, safety and health are open and our stakeholders today have easy access to this information. Records on Russian worker radiation are valuable in helping the United States gain further insight into radiation safety. This year we completed the preservation microfilming of these fragile records of worker dosimetry. We now have a multi-disciplinary, fully integrated oversight process for independently evaluating environment, safety and health and safeguards and security programs.

Management Practices

The Department has adopted "best-in-class" management practices in conjunction with our mission. Performance is our focus and is integrated into management practices throughout headquarters, field and contractor operations. Through the Strategic Alignment Initiative, we reduced Federal staffing by 2,889 positions, achieving cumulative savings for FY 1996-1997 of $213 million. We achieved more than $360 million in savings through continued improvements in contracting, information management, and travel activities.

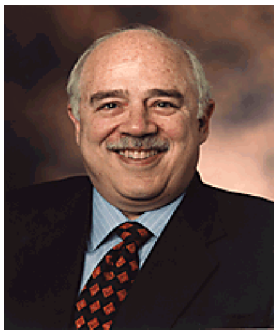
Since recognizing the opportunity to reduce administrative costs associated with Federal regulations, we have eliminated many unnecessary prescriptive requirements as well as nonessential processes, reports, forms and directives. The number of paper purchase orders as well as the cost per transaction has decreased substantially in FY 1997 through the use of electronic purchasing and credit cards for small purchases. We have applied business process reengineering to other Departmental functions such as major acquisitions, interagency agreements and payment processing.

Accomplishments in our contract reform initiative implemented in 1994 were recognized through the Contract Reform Self-Assessment process conducted in FY 1997. Increased competition, cost reduction, greater contractor financial accountability, and improved efforts to protect workers, the public and the environment are all successes achieved in the Department's reinvention of its contracting practices to performance-based approaches.



Contractor Employment includes Prime Contractors.

Federal Employment excludes Power Marketing Administrations and Federal Energy Regulatory Commission.



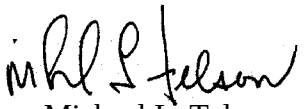
Michael L. Telson

Message From the Chief Financial Officer

I am pleased to present the Department of Energy's consolidated financial statements and disclose our financial condition and the results of operations for FY 1997. Last year, for FY 1996, the Department submitted its first consolidated financial statements to the Office of Management and Budget and was one of only six Federal agencies to receive an unqualified audit opinion. That submission represented the only time a Cabinet level department or agency received an unqualified opinion on their first effort to prepare department-wide statements. Building on our past experience, the Office of the Chief Financial Officer has prepared the following comprehensive Departmental statements for FY 1997 in accordance with the requirements of the Office of Management and Budget, the Chief Financial Officers Act of 1990, and the Government Management Reform Act of 1994.

The Department of Energy continues to emphasize professional excellence, accountability, and responsibility in the administration of its programs. Roles and responsibilities in financial management have been institutionalized by the Chief Financial Officers Act, and require aggressive efforts of agencies to promote an environment of positive financial stewardship in the Federal Government. Our efforts and initiatives toward improved financial management have been challenged by increasing requirements and expectations during a period of declining resources. These initiatives include consolidating selected accounting functions from nineteen field accounting offices to three financial service centers, and implementing new Government-wide Federal Financial Accounting Standards, such as the early implementation of Standard Number 4, *Managerial Cost Accounting Concepts and Standards*. Another challenging initiative that significantly impacts these financial statements involves the effect on unfunded liabilities as the Department moves toward an accelerated cleanup approach for the Environmental Management program. This new accelerated approach is designed to complete the cleanup of as many sites as possible by 2006 and addresses life cycle costs associated with the more rapid disposal of nuclear materials and waste.

The Department, and the Federal government as a whole, are experiencing significant financial management changes that are making us more efficient, effective and accountable. These changing requirements and expectations continue to demand the diligence, dedication, and effective use of all our resources to ensure the Department fulfills its financial responsibility to the American taxpayer, the Congress, and the President. Although the Department has continued to reduce its staffing, we are striving to develop smarter management practices in order to cut costs, save taxpayer dollars and do more with less. Downsizing and reengineering initiatives coupled with the application of quality principles are refocusing our efforts toward streamlining activities, instituting performance measurement oversight and continuing to place customer service high on our list of priorities. Our current financial initiatives are critical to the achievement of our Departmental goals.



Michael L. Telson
Chief Financial Officer

Financial Overview

This financial overview of the consolidated financial statements contains highlights of significant balances contained in the consolidated financial statements and related financial performance measures. The financial performance measures were developed by the Office of the Chief Financial Officer in partnership with Headquarters and Field Offices to implement a performance-based oversight strategy.

Highlights of Significant Balances
(comparative FY 1996 balances provided where appropriate)

CONSOLIDATED STATEMENT OF FINANCIAL POSITION

ASSETS - The Consolidated Statement of Financial Position reflects total assets of **$96.8** billion (FY 1996-$94.0 billion) and primarily consists of the following:

Fund Balances with Treasury of **$10.5** billion (FY 1996-$10.9 billion) consist primarily of appropriated funds to pay current liabilities and finance authorized purchase commitments.

Investments of **$8.4** billion (FY 1996-$7.1 billion) consist primarily of 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. The $1.3 billion increase in the Department's investments during FY 1997 occurred as a result of normal investing of fees received.

Accounts Receivable of **$5.3** billion (FY 1996-$5.5 billion) consist of intragovernmental receivables of $563 million resulting primarily from reimbursable work performed for other Federal agencies and governmental receivables due from the public of $4.7 billion primarily for Nuclear Waste Fund and Uranium Enrichment Decontamination and Decommissioning Fund fees.

Stockpile Materials of **$37.5** billion (FY 1996-$39.5 billion) consist of crude oil at the Strategic Petroleum Reserve and nuclear materials. The Strategic Petroleum Reserve component of $15.0 billion represents the cost of 555 million barrels of crude oil stored in salt domes, terminals, and pipelines. The reserve provides a deterrent to the use of oil as a political instrument and provides an effective response mechanism should a disruption occur. The nuclear materials of $22.5 billion consist primarily of weapons and related components, including those in the custody of the Department of the Defense under Presidential Directive, and materials used for research and development purposes.

Property, Plant and Equipment of **$20.8** billion (FY 1996-$22.0 billion) includes over 124 million square feet of buildings located on over 2.5 million acres of land. The

Department's property and equipment values have been adjusted to reflect the Department's changing mission (e.g. downsizing of the defense complex) and to be in compliance with applicable accounting standards and guidance. During FY 1997, the Department raised its capitalization threshold from $5,000 to $25,000 for all field elements except the power marketing administrations. This change in accounting policy resulted in a $694 million charge to expense.

Regulatory Assets of **$13.2** billion (FY 1996-$8.0 billion) are associated with the Department's power generation and management responsibilities. These regulatory 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. The $5.2 billion increase in regulatory assets is attributable to the BPA Appropriation Refinancing Act of 1994 requiring DOE to assume a liability to repay the unpaid balance of capital appropriations of the power generating assets of the Corps of Engineers and the Bureau of Reclamation associated with the Federal Columbia River Power System.

LIABILITIES - The Consolidated Statement of Financial Position reflects Departmental liabilities totaling **$221.9** billion (FY 1996-$264.6 billion). The following significant liabilities represent the amount of monies or other resources that are likely to be paid by the Department as a result of transactions or events that have already occurred.

Deferred Revenues and Other Credits of **$9.2** billion (FY 1996-$8.4 billion) primarily represent the amount of Nuclear Waste Fund revenues that exceed the Nuclear Waste Fund expenses. 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.

Environmental Liabilities of **$180.6** billion (FY 1996-$229.1 billion) represent the Department's obligation to correct the environmental damage incurred throughout the DOE complex while researching, producing and testing nuclear weapons. This complex included nuclear reactors, chemical processing buildings, metal machining plants, laboratories, and maintenance facilities where environmental contamination occurred as a result of operations. The environmental legacy derived from the process of producing nuclear weapons includes thousands of contaminated areas and buildings, and large volumes of waste and special nuclear materials requiring treatment, stabilization, and disposal. The Department's environmental liability also includes the cost of addressing existing wastes and those facilities that have been declared surplus, as well as the cost to decontaminate and decommission facilities still operating. This liability is also significant from a Government-wide perspective in that it is one of the largest in the Federal government, and is the primary reason for the deficit Net Position of **($125.1)** billion reflected on the Consolidated Statement of Operations and Changes in Net Position. This liability decreased by $48.5 billion from last year's estimate due primarily to a new vision

for addressing the legacy of the cold war and disposing of nuclear materials and waste. The new vision and proposed strategy were released in a June 1997 Discussion Draft "Accelerating Cleanup: Focus on 2006" and provided the basis for the FY 1997 estimates developed by DOE sites. Additionally, since this liability is essentially unfunded, it represents significant future funding requirements for the Department.

Pensions and Other Actuarial Liabilities of **$6.3** billion (FY 1996-$6.1 billion) represent amounts which the Department has obligations to pay for specified benefits to contractor employees having approved defined benefit pension plans and postretirement benefits other than pensions. The Department has a unique contractual relationship with these contractor employees that makes the Department ultimately responsible for funding the defined benefit pension and postretirement benefit plans and any related liabilities. Defined benefit pension plans provide benefits, such as a percentage of the final average pay for each year of service, while postretirement benefits other than pensions include predominantly postretirement health care benefits.

CONSOLIDATED STATEMENT OF OPERATIONS AND CHANGES IN NET POSITION

During FY 1997, the Department implemented the Office of Management and Budget's Statement of Federal Financial Accounting Standards Number 4, *Managerial Cost Accounting Concepts and Standards for the Federal Government*. The main objective of this Standard is to provide reliable and timely information on the full cost of Federal programs. To comply with this Standard, the Department's business lines were divided into 52 responsibility segments, representing major elements of the Department's mission, and processes and systems were modified to accumulate the full cost information. This resulted in the allocation of costs totaling approximately $3.5 billion to the 52 responsibility segments in addition to those costs charged directly to each segment.

REVENUES AND FINANCING SOURCES - Total revenues and financing sources consist primarily of the following:

Appropriated Capital Used of **$20.0** billion represents the funds made available to the Department to perform its mission through congressional appropriations. These appropriations are recognized as financing sources at the time the related expenses are incurred and the assets are consumed in operations.

Revenues from Goods and Services Provided are **$6.2** billion. This amount consists of public revenues of $4.3 billion predominantly from the sale and transmission of electric power and the sale of oil from the Department's reserves, and intragovernmental revenues of $1.9 billion from work done for others.

Other Revenues and Financing Sources of **$1.2** billion consist primarily of Nuclear Waste Fund fees assessed, revenues collected for the Federal Energy Regulatory Commission, and revenues recognized for the Petroleum Pricing Violation Escrow Fund.

EXPENSES - The revenues contained on the Consolidated Statement of Operations and Changes in Net Position are impacted by expenses and an adjustment due to a change in estimating the unfunded environmental liability **($47.7)** billion and primarily consist of the following:

Program Expenses of **$11.3** billion make up the majority of the Department's expenses and are categorized by business line and explained in detail in the supplementary information provided after the notes to the financial statements. The fifth business line, Economic Productivity, cuts across multiple organizational missions, funding levels and activities and, therefore, is included within the other four business lines. These expenses are presented in Table 1.

Expenses by Business Line: (in billions)	
Energy Resources	$1.7
National Security	5.9
Environmental Quality	1.2
Science and Technology	2.5
Total	***$11.3***

Table 1., Business Line Expenses

Cost of Goods & Services Provided of **$4.7** billion represents costs incurred in generating the $6.2 billion of public and intragovernmental revenues from goods and services provided.

Other Expenses of **$3** billion represent a reduction in the value of the nuclear materials stockpile for materials that were declared excess to national security requirements ($1.3 billion); a write-off of property, plant, and equipment due to the change in DOE's capitalization threshold ($.7 billion); interest costs accrued by the power marketing administrations on amounts owed to Treasury ($.5 billion); and other miscellaneous costs ($.5 billion).

Unfunded Liability Adjustment of **($48.1)** billion primarily consists of the net decrease in environmental liability estimates resulting from the accelerated cleanup approach for the Environmental Management program.

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

Financial Performance Measures

Executive Information System

The Department has aggressively moved towards developing and initiating an Executive Information System (EIS) to make useful financial information readily available to the Department's managers. During FY 1997, an initial pilot system was developed and deployed to selected Headquarters and Field Office staff to support summary analyses for senior management use and provide information for external summary level reporting. The initial pilot system provides executives and senior managers immediate access to summary information in the following areas: funding, status of obligations, travel, functional costs, program direction/departmental administration, and employee demographics. **Chart 1** displays the Headquarters and Field Offices utilizing the capabilities available on the EIS. The offices participating in the initial pilot represent 35 percent of the total number of offices anticipated to utilize the EIS. The Department plans to expand the EIS capabilities to all Field Offices and Headquarters Offices during FY 1998.

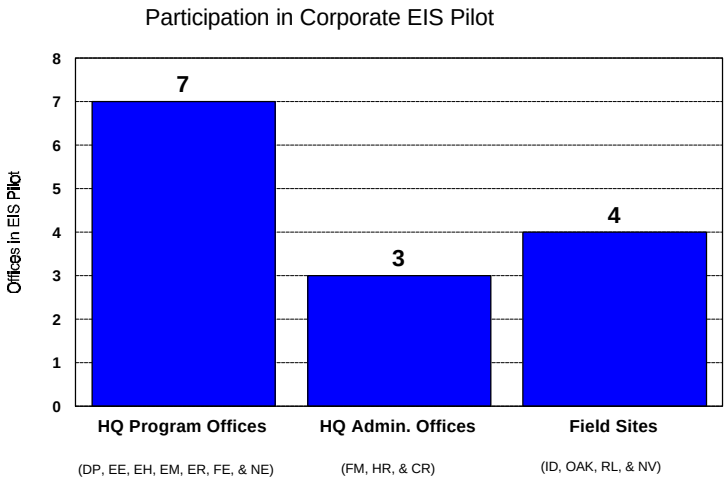


Chart 1

Payment Performance

Prompt Payment. The Department is committed to meeting Federal government goals established by the Office of Management and Budget and enacted legislation related to payments made by Federal agencies. The Department's FY 1997 on-time payment performance percentage rate was 95 percent. **Chart 2** displays the Federal government's prompt payment goal and the Department's accomplishments for FY 1994-FY 1997.

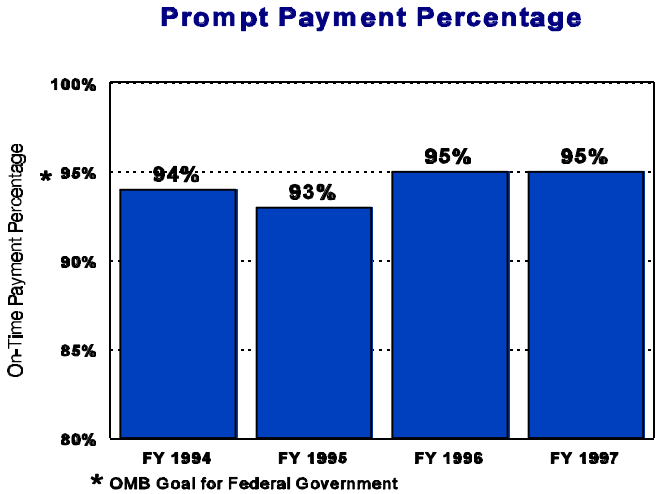


Chart 2

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 results portrayed in **Chart 3** demonstrate the Department's efforts to implement the Governmentwide mandate to fully utilize Electronic Funds Transfer for payments. Overall performance during FY 1997 fell slightly short of goals due to efforts required.to successfully consolidate payment processes for 19 accounting offices into 3 financial service centers.

Travel Payments. The goal for average processing time from the receipt of travel voucher to final payment

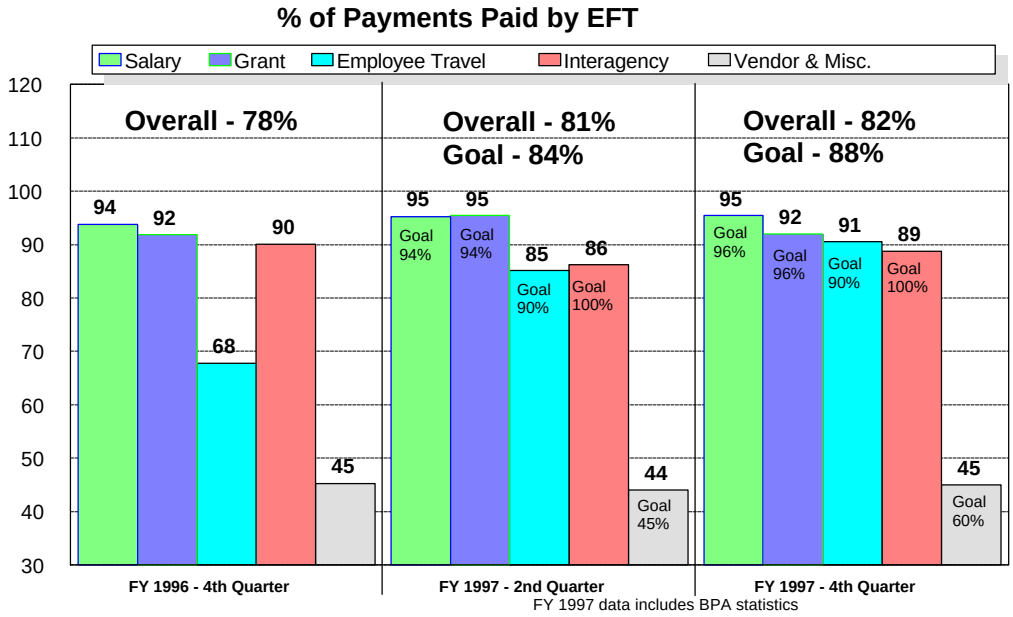


Chart 3

of the travel voucher is 10 days or less, as established by OMB. As **Chart 4** shows, the Department has exceeded OMB's goal and continues to improve customer service by further reducing the processing time.

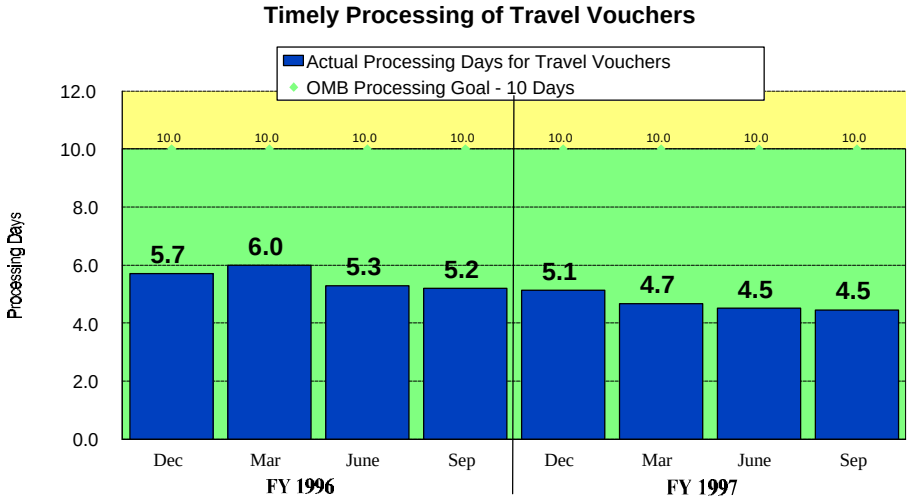


Chart 4

Functional Support Cost Reporting

Over the past several years the Department has made significant progress in controlling functional support costs across the complex. Functional support activities are required to be performed, but are not directly tied to mission activities and do not include the costs of capital equipment and construction. Examples of functional support activities include: maintenance, procurement, information/outreach services, safeguards and security, financial services, and safety and health. The Department has initiated efforts to compile, analyze and monitor functional support costs provided by the Department's major contractors at 21 Departmental sites. A reporting system was established during FY 1997 to accumulate data on functional support costs for FY 1994 through FY 1997. **Chart 5** displays the downward trend as the Department focuses to control and monitor these costs.

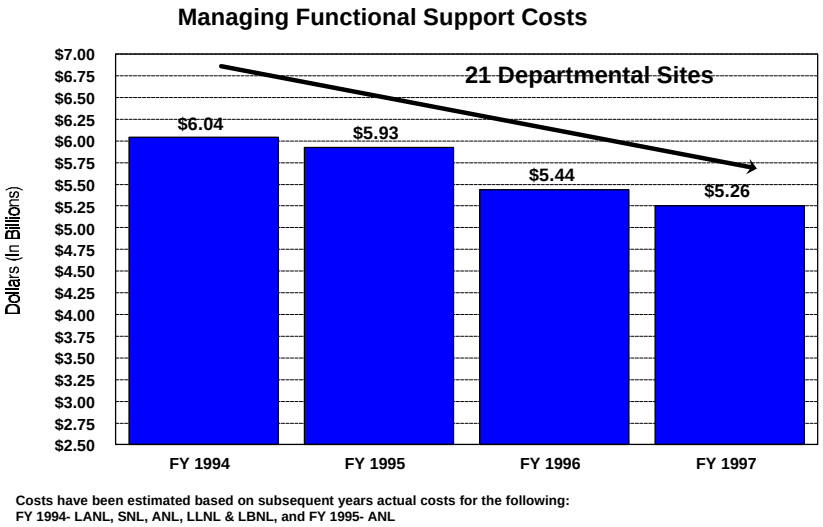


Chart 5

Balances of Uncosted Obligations

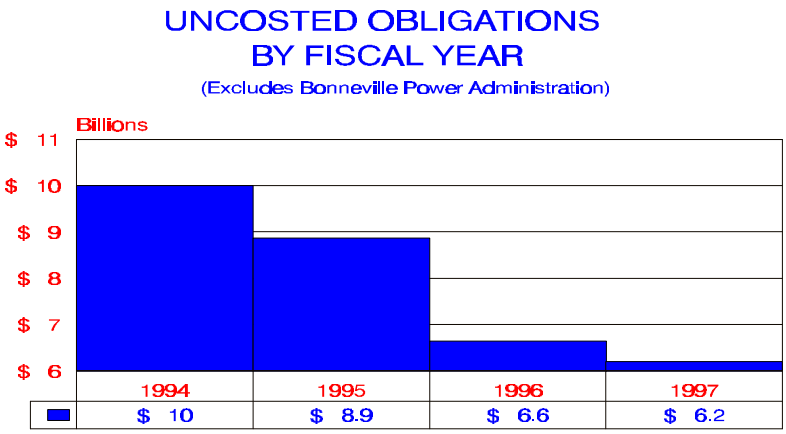


Chart 6

The Department's total uncosted obligation balance is the lowest it has been in over 15 years. Over the past several years, the Department has made significant progress in analyzing and reducing the level of uncosted balances. 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 delivered. While balances of uncosted obligations are natural and acceptable, concern is directed at agencies when excess uncosted balances are maintained. The Department's uncosted obligations are evaluated and considered in the budget formulation process. As reflected in **Chart 6**, the Department has taken aggressive actions to understand what drives uncosted obligation balances, control and reduce these balances, and more actively consider these resources when determining budget estimates. A process improvement group developed new policy and a methodology for analyzing uncosted balances. This methodology established dollar level thresholds which are consistent with sound financial management for specific types of financial/contractual arrangements allowing the Department to evaluate its overall performance based on the variance between the calculated thresholds and actual balances. The chart excludes data for the Bonneville Power Administration, which is treated as a Government Corporation and reported $51.1 million in uncosted balances for FY 1997.

Department of Energy
Washington, DC 20585
February 26, 1998

MEMORANDUM FOR THE SECRETARY

FROM: Gregory H. Friedman
Principal Deputy Inspector General

SUBJECT: INFORMATION: Report on "Audit of the Department of Energy's Consolidated Financial Statements for Fiscal Year 1997"

BACKGROUND:

The subject report provides the results of our audit.

DISCUSSION:

The Office of Inspector General audited the Department's Consolidated Statement of Financial Position as of September 30, 1997, and the related Consolidated Statement of Operations and Changes in Net Position for the year then ended. In the opinion of the Office of Inspector General, these financial statements present fairly, in all material respects, the financial position of the Department as of September 30, 1997, and the results of operations and changes in net position for the year then ended, in conformance with the basis of accounting described in Note 1 of the financial statements.

In accordance with *Government Auditing Standards*, the Office of Inspector General issued a separate report on our consideration of the Department's system of internal controls. We reported that a systematic process needs to be developed and implemented to improve the method of estimating the environmental liability. Specifically, procedures should be adopted to update the estimate through fiscal yearend and to ensure that all known remediation costs are included. This problem was considered to be a material reportable condition, but it did not have a material effect on the financial statements because of corrective actions taken by the Department. We also reported that controls over performance measure information presented in the Overview to the financial statements need to be strengthened to ensure that information is adequately supported and properly presented. While we also considered this matter to be a reportable condition, it did not materially affect the Department's financial statements.

The audit disclosed a number of other conditions relating to the Department's system of internal controls that were not considered to be reportable conditions and did not materially affect the Department's financial statements. These matters will be communicated to the Chief Financial Officer and to heads of field elements in separate reports. The recommendations made in these reports are designed to strengthen internal controls or improve operating efficiencies.

As described in *Matters of Emphasis* in our report on the consolidated financial statements, the Department is faced with a number of uncertainties. The most significant of these is the environmental liability estimate. In addition to the uncertainty inherent in any long-term estimate, uncertainties also exist with regard to the realization of Departmental plans regarding funding, facility end-states, anticipated regulatory approvals, and projected savings from productivity and efficiency improvements. Similar concerns also exist with regard to the resolution of various administrative and legal proceedings to which the Department is a party, including issues involving the Nuclear Waste Fund. These actions may result in settlements or decisions adverse to the Government; however, the outcomes of such proceedings are not currently susceptible to reasonable estimation. The manner in which each of these matters is resolved will affect ultimate costs to the Department.

In addition to the report on internal controls, we also issued a report on the Department's compliance with applicable laws and regulations. The results of our tests in this area disclosed no compliance matters reportable under applicable audit standards.

We also performed audit procedures to test compliance with the Federal Financial Management Improvement Act of 1996. This Act requires that auditors perform tests to determine whether the Agency has substantially complied with Federal financial management systems requirements, applicable accounting standards, and implementation of the United States Standard General Ledger at the transaction level. Our procedures revealed no conditions that constituted substantial noncompliance with the Act.

MANAGEMENT RESPONSE:

Departmental Management generally concurred with the audit recommendations contained in the Department-level internal control report and has indicated that corrective actions will be taken where appropriate.

Attachment

cc: Deputy Secretary
Under Secretary
Chief Financial Officer

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

REPORT OF THE OFFICE OF INSPECTOR GENERAL

The Secretary
U.S. Department of Energy

We have audited the accompanying Consolidated Statement of Financial Position of the U.S. Department of Energy (Department) for the year ended September 30, 1997, and related Consolidated Statement of Operations and Changes in Net Position for the year then ended. These financial statements are the responsibility of the Department's management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with generally accepted auditing standards: *Government Auditing Standards* issued by the Comptroller General of the United States; and Office of Management and Budget (OMB) Bulletin No. 93-06, *Audit Requirements for Federal Financial Statements*, as amended. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, the evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management as well as evaluating the overall presentation of the financial statements. We believe that our audit provides a reasonable basis for our opinion.

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, 1997, and the results of its operations for the year then ended in conformity with the hierarchy of accounting principles described in Note 1 of the financial statements.

Our audit was made for the purpose of forming an opinion on the Department's Consolidated Statement of Financial Position as of September 30, 1997, and related Consolidated Statement of Operations and Changes in Net Position for the year then ended. The information presented in management's Overview and the Supplemental Financial and Management Information sections is not a required part of the statements, but is supplementary information required by OMB Bulletin No. 94-01, *Form and Content of Agency Financial Statements*. We have considered whether this information is materially inconsistent with the above statements. Such information has been subjected to limited auditing procedures applied in the audit of the financial statements, and accordingly, we do not express an opinion on it. The performance information included in management's Overview is addressed in our audit report on the Department's system of internal controls.

Management has chosen for purposes of additional analysis to incorporate the Executive Summary from the Department's Report on Compliance with the Federal Managers Financial Integrity Act of 1982 in its Annual Report. This Summary is not a required part of the consolidated financial statements. While such information has been reviewed separately by the Office of Inspector General, it has not been subjected to auditing procedures applied in the audit of the consolidated financial statements, and accordingly, we do not express an opinion on it.

MATTERS OF EMPHASIS

As described in Note 13 of the financial statements, the Department changed its method of estimating its environmental remediation liability for Fiscal Year 1997. The change in method resulted in a reduction in the estimated unfunded liability of about $49 billion, from $228 billion reported for Fiscal Year 1996, to $179 billion recorded at September 30, 1997. The primary reasons for such change are the adoption of a remediation approach designed to accelerate cleanup at most of the Department's sites and the change in end-state assumptions for a number of facilities assigned to the Environmental Management (EM) Program. As with previous estimation methods, the estimate continues to be based on assumptions regarding actions that are to take place in the future and is highly uncertain. In addition to the uncertainty inherent in any long-term estimate, the following factors impact the overall uncertainty of the estimate:

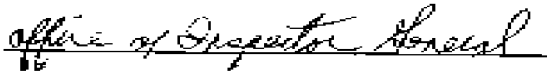
- The impact of potential changes to planned facility end-state or land-use assumptions could be profound.
- Congressional appropriations may not be received at the levels anticipated.
- The planned approach and scope of work for many remediation projects are subject to regulatory approval.
- Cost increases caused by future inflation may occur.
- Complete information as to the extent of contamination is not available for facilities that have not been completely characterized.
- The Department may be required to fund disposal costs for depleted uranium (including depleted uranium generated by the United States Enrichment Corporation).
- Projected savings attributable to efficiency and productivity improvements included in lifecycle cost estimates may not be achievable.
- Opening of the planned repository for storage of high-level waste and spent nuclear fuel may be delayed and projected waste volumes may exceed planned capacity.
- The portion of the accrued liability related to the Department's Accelerated Cleanup Plan is based on the adjusted mid-point of estimates derived from differing funding assumptions: a range of about $11 billion.

- The Department's estimate of disposal fees for high-level waste was prepared during Fiscal Year 1995 and has not been updated to reflect major changes in assumptions. The estimate is to be updated during Fiscal Year 1998 in conjunction with a Congressionally-directed study and may increase.
- Remediation costs for contaminated facilities not yet assigned to the Department's environmental management program are based on computer modeling rather than lifecycle cost estimates.

The Department also is a party to various administrative proceedings, legal actions, and tort claims that may ultimately result in settlements or decisions adverse to the Government, as discussed in Note 16 of the financial statements. The Office of General Counsel, in responding to our inquiries about these matters, was not able to form a conclusion as to the likely outcome or potential loss resulting from litigation, claims, and assessments against the Department. Readers of the Department's consolidated financial statements should, therefore, be aware that the statements may be affected by uncertainties concerning the outcome of claims described in Note 16, which are not currently susceptible to reasonable estimation.

REFERENCE TO OTHER REPORTS

In accordance with *Government Auditing Standards*, we have also issued a report on our consideration of the Department's system of internal controls and a separate report on its compliance with laws and regulations. Both reports are dated December 29, 1997, except as they relate to the following two items. As to Note 13, the date extends to January 30, 1998, the date on which field work was completed on procedures required to update the environmental liability estimate. As to Note 16, the date extends to February 19, 1998, the date through which several motions and lawsuits were filed by various entities related to the Department's compliance with the Nuclear Waste Policy Act.



December 29, 1998, except for Note 13, as to which the date is January 30, 1998, and Note 16, as to which the date is Fenruary 19, 1998.

Principal Financial Statements

DOE'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 books and records of DOE 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.

The statements should be read with the realization that they are for a component of a sovereign entity, that liabilities not covered by budgetary resources cannot be liquidated without the enactment of an appropriation, and that payment of all liabilities other than for contracts can be abrogated by the sovereign entity.

Management acknowledges its responsibility for maintaining internal accounting and administrative controls that are adequate to ensure that transactions are executed in accordance with budgetary and financial laws and other requirements, consistent with the purposes authorized, and are recorded in accordance with Federal accounting standards; assets are properly safeguarded to deter fraud, waste, and abuse; and performance measurement information is adequately supported.

In accordance with the Federal Managers' Financial Integrity Act of 1982, the Department has completed the required evaluations of its financial management system and system of management controls. The results of the Department's financial management system evaluation and assurances provided by system managers indicate that the financial management system substantially complies with the principles, standards, and system requirements prescribed by the Comptroller General and the Office of Management and Budget. The management control evaluations conducted, assurances prepared by senior officials, and other information such as independent audit reports and self-assessments, indicate that the system of management controls provides reasonable assurance that the management control objectives were achieved except for the reportable problems specifically described in the Secretary's FY 1997 Federal Managers' Financial Integrity Act Report. (See page 141 for executive summary of this report)

Consolidated Statements of Financial Position *(in millions)*

as of September 30, 1997 and 1996

	1997	1996
ASSETS		
Agency Assets		
Intragovernmental		
Fund Balance with Treasury (Note 2)	$10,509	$10,911
Investments (Note 3)	7,845	6,402
Accounts Receivable (Note 4)	563	688
Governmental		
Investments (Note 3)	45	72
Accounts Receivable, Net (Note 4)	4,595	4,668
Stockpile Materials, Net (Note 5)		
Strategic Petroleum Reserve	14,981	15,224
Nuclear Materials	22,531	24,264
Property, Plant and Equipment, Net (Note 6)	20,756	22,049
Regulatory Assets (Note 7)	13,165	8,020
Other Agency Assets	1,037	817
Total Agency Assets	$96,027	$93,115
Custodial Assets (Note 8)	770	918
Total Assets	$96,797	$94,033
LIABILITIES		
Liabilities Covered by Budgetary Resources		
Intragovernmental Liabilities		
Accounts Payable	$914	$776
Debt (Note 9)	9,083	2,456
Appropriated Capital Owed to Treasury (Note 10)	2,309	3,797
Governmental Liabilities		
Accounts Payable (Note 11)	4,979	4,887
Debt (Note 9)	7,166	7,197
Deferred Revenue and Other Credits (Note 12)	9,219	8,417
Funded Environmental Liabilities (Note 13)	1,148	1,165
Total Liabilities Covered by Budgetary Resources	$34,818	$28,695
Governmental Liabilities Not Covered by Budgetary Resources		
Environmental Liabilities (Note 13)	179,466	227,949
Pension and Other Actuarial Liabilities (Note 14)	6,308	6,135
Other Governmental Liabilities (Note 15)	1,317	1,800
Contingencies (Note 16)		
Total Liabilities Not Covered by Budgetary Resources	$187,091	$235,884
Total Liabilities	$221,909	$264,579
NET POSITION		
Unexpended Appropriations (Note 17)	5,359	5,841
Invested Capital	52,957	56,714
Cumulative Results of Operations	3,371	2,690
Future Funding Requirements	(186,799)	(235,791)
Total Net Position	($125,112)	($170,546)
Total Liabilities and Net Position	$96,797	$94,033

The accompanying notes are an integral part of these statements.

Consolidated Statement of Operations and Changes in Net Position *(in millions)*
for the Fiscal Year Ended 1997

	1997
REVENUES AND FINANCING SOURCES	
Appropriated Capital Used	$20,049
Revenues from Goods and Services Provided (Note 18)	
Public	4,331
Intragovernmental	1,874
Interest (Note 19)	652
Other Revenues and Financing Sources (Note 20)	1,187
Less Receipts Transferred to Treasury & Other Agencies (Note 21)	(1,733)
Nuclear Waste Fund Deferred Revenue Adjustment (Note 12)	(958)
Total Revenues and Financing Sources	$25,402
EXPENSES	
Program Expenses	
Energy Resources	1,677
National Security	5,915
Environmental Quality	1,200
Science and Technology	2,525
Cost of Goods and Services Provided (Note 18)	
Public	2,827
Intragovernmental	1,912
Other Expenses (Note 22)	3,007
Unfunded Liability Adjustments (Note 23)	(48,105)
Total Expenses	($29,042)
Revenues and Financing Sources in Excess of Total Expenses	$54,444
CHANGES IN NET POSITION	
Net Position, Beginning Balance, as Stated	($170,546)
Prior Period Adjustments (Note 24)	(6,070)
Net Position, Beginning Balance, as Adjusted	($176,616)
Non-Operating Changes	(2,940)
Excess (Shortage) of Revenues and Financing Sources Over Total Expenses	54,444
Net Position	($125,112)

The accompanying notes are an integral part of these statements.

Notes to the 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 (DOE). They have been prepared from the books and records of DOE in accordance with the form and content for agency financial statements, specified by the Office of Management and Budget (OMB) in OMB Bulletin No. 94-01. Generally accepted accounting principles for the Federal government consist of the following hierarchy:

- Individual standards agreed to by the Director of OMB, the Comptroller General, and the Secretary of the Treasury and published by OMB and the General Accounting Office;
- Interpretations related to the Statement of Federal Financial Accounting Standards issued by OMB;
- Requirements contained in OMB Bulletin No. 94-01, Form and Content of Agency Financial Statements; and
- Accounting principles published by other authoritative standard-setting bodies and other authoritative sources.

B. Description of Reporting Entity

DOE is a cabinet level agency of the Executive Branch of the U.S. Government. DOE's headquarters organizations are located in Washington, D.C. and Germantown, MD and consist of an executive management structure that includes: the Secretary, the Deputy Secretary, and the Under Secretary; nine Secretarial staff organizations; and program organizations that provide technical direction and support for DOE's principal programmatic missions. DOE 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.

DOE has a complex field structure comprised of operations offices, field offices, power marketing administrations, laboratories, and other facilities. The majority of DOE's environmental cleanup, energy research and development, and testing and production activities are carried out by major contractors. These contractors operate, maintain, or support DOE'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 DOE. In most cases, their charts of accounts and accounting systems are integrated with DOE's accounting system through a home office-branch office type of arrangement. Additionally, DOE is ultimately responsible for funding certain defined benefit pension plans, as well as post retirement 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 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 a liability is 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. Revenues and Other Financing Sources

DOE 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. Appropriations are recognized as a financing source at the time the related operational or administrative expenses are incurred. Appropriations expended for property, plant and equipment are recognized as financing sources when the asset is consumed in operations. Revenues are recognized when earned (i.e., goods have been delivered or services rendered.) (See Notes 18 - 21)

E. Funds with Treasury and Cash

Funds with Treasury represent appropriated funds, trust funds, and revolving funds that are available to pay current liabilities and finance authorized purchase commitments. Cash balances

held outside Treasury primarily represent trust fund balances held in minority financial institutions. -(See Note 2)

F. Investments

Investments in Treasury securities for the Nuclear Waste Fund are classified as available for sale and are reported at fair value in accordance with Statement of Financial Accounting Standards (SFAS) No. 115, *Accounting for Certain Investments in Debt and Equity Securities.* All other DOE investments are reported at cost net of amortized premiums or discounts as it is DOE's intent to hold the investments to maturity. Premiums or discounts are amortized using the effective interest method. (See Note 3)

G. Accounts Receivable, Net of Allowance

The amounts due for governmental (non-Federal) receivables are stated net of an allowance for uncollectible 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 4)

H. Property, Plant, and Equipment

Property, plant, and equipment that are purchased, constructed, or fabricated in-house, including major modifications or improvements, are capitalized if they have an anticipated service life of 2 years or more and cost $25,000 or more. Costs of construction are capitalized as construction work in process. Upon completion or beneficial occupancy, the cost is transferred to the appropriate property account. Property, plant and equipment related to environmental management facilities storing and processing DOE's environmental legacy wastes are not capitalized. (See Notes 6 and 22)

Depreciation expense is generally computed using the straight line method throughout DOE. The units of production method may be 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	25 - 40 years
ADP Software	5 - 20 years
Equipment	5 - 45 years

I. Liabilities

Liabilities represent amounts of monies or other resources likely to be paid by DOE as a result of a transaction or event that has already occurred. However, no liability can be paid by DOE absent an authorized appropriation. Liabilities for which an appropriation has not been enacted are, therefore, classified as unfunded liabilities, and there is no certainty that the appropriations will be enacted. Also, liabilities of DOE 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 retirement systems for Federal employees. DOE employees hired prior to January 1, 1984 may participate in the Civil Service Retirement System (CSRS), to which DOE makes matching contributions equal to 7 percent of pay. 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 DOE 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, DOE also contributes the employer's matching share for Social Security. DOE 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. DOE does report, as an imputed financing source and a program expense, the difference between its contributions to Federal employee retirement programs and the estimated actuarial cost as computed by the Office of Personnel Management. (See Note 20)

Contractor Employees

Most DOE contractors have a defined benefit pension plan under which they promise to pay specified benefits, such as a percentage of the final average pay for each year of service. DOE costs 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. (See Note 14)

L. Comparative Data

Comparative data for the prior year for the Statement of Operations and Changes in Net Position have not been presented. This was due to DOE's FY 1997 implementation of Statement of Federal Financial Accounting Standards Number 4 (SFFAS No. 4), *Managerial Cost Accounting Concepts and Standards for the Federal Government*. As a result, it was not practical to restate prior year program expenses and other costs in order to present a comparative Statement of Operations and Changes in Net Position . In future years, full comparative data will be presented in order to provide an understanding of changes in DOE's financial operations.

Comparative information for the Statement of Financial Position are presented as the implementation of SFFAS No. 4 did not require restatement of FY 1996 amounts for this statement. Certain FY 1996 amounts have been reclassified to conform to the FY 1997 presentation.

M. Program Expenses

Program expenses are summarized in the Consolidated Statement of Operations and Changes in Financial Position by business line, which represents the four major elements of the Department's mission. A detailed breakdown of the expenses for each business line is presented in the Supplemental Financial and Management Information section of the annual report.

The program expenses reported in the Consolidated Statement of Operations and Changes in Financial Position and in the Supplementary Financial and Management Information represent the full cost of the Department's programs in accordance with the Department's implementation of SFFAS No. 4.

N. Use of Estimates

DOE 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.

2. Fund Balance with Treasury

(in millions)

	Obligated	-------Unobligated------- Unrestricted	Restricted	Investments in Treasury Securities	Total Fund Balances With Treasury
Fiscal Year 1997					
Agency Funds					
Revolving funds	$70	$404			$474
Appropriated funds	7,194	1,995	$622		9,811
Special funds	319	68	6,956	($7,129)	214
Deposit funds			10		10
Total agency funds	$7,583	$2,467	$7,588	($7,129)	$10,509
Custodial Funds (Note 8)					
Trust funds	9				9
Special funds			3		3
Deposit funds			18		18
Total custodial funds	$9	$0	$21		$30
Total FY 1997 funds in Treasury	$7,592	$2,467	$7,609	($7,129)	$10,539
Fiscal Year 1996					
Agency Funds					
Revolving funds	($16)	$262	$3		$249
Appropriated funds	7,992	1,859	561		10,412
Special funds	271	107	5,652	($5,790)	240
Deposit funds			10		10
Total agency funds	$8,247	$2,228	$6,226	($5,790)	$10,911
Custodial Funds (Note 8)					
Trust funds	12				12
Special funds			3		3
Deposit funds			22		22
Total custodial funds	$12		$25		$37
Total FY 1996 funds in Treasury	$8,259	$2,228	$6,251	($5,790)	$10,948

The unobligated restricted funds primarily represent revenues that have been collected and are being held until such time that Congress appropriates the funds to DOE or directs DOE to return the funds to Treasury's general fund. The appropriated restricted funds represent primarily revenues earned from the sale of oil prior to FY 1994 from the Naval Petroleum and Oil Shale Reserves which Congress has not made available to DOE. The special and deposit funds represent revenues from the Nuclear Waste Fund, Uranium Enrichment Decontamination and Decommissioning Fund, and the Petroleum Pricing Violation Escrow Fund.

3. Investments

(in millions)

	Cost	Market Value	Amortized (Premium) Discount	Investments Net
Fiscal Year 1997				
Agency Assets				
Intragovernmental Non-Marketable				
Nuclear Waste Fund	$6,966	$6,947	($139)	$6,827
Net unrealized holding gains				$120
Uranium Enrichment D&D Fund	890	886	(6)	884
Great Plains Gasification Plant Trust Fund	14	14		14
Subtotal	$7,870	$7,847	($145)	$7,845
Governmental Marketable Securities				
Du Pont pension receipts	45	72		45
Total agency investments	$7,915	$7,919	($145)	$7,890
Custodial Assets (Note 8)				
Intragovernmental Non-Marketable				
Petroleum Pricing Violation Escrow Fund	297	300	3	300
Low Level Radioactive Waste Fund	2	2		2
Subtotal	$299	$302	$3	$302
Governmental Marketable Securities				
Petroleum Pricing Violation Escrow Fund	200	200		200
Total custodial investments	$499	$502	$3	$502
Total FY 1997 investments	$8,414	$8,421	($142)	$8,392
Fiscal Year 1996				
Agency Assets				
Intragovernmental Non-Marketable				
Nuclear Waste Fund	$6,102	$5,897	($129)	5,973
Net unrealized holding losses				(76)
Uranium Enrichment D&D Fund	486	482	(2)	484
Great Plains Gasification Plant Trust Fund	21	21		21
Subtotal	$6,609	$6,400	($131)	$6,402
Governmental Marketable Securities				
Du Pont pension receipts	72	72		72
Total agency investments	$6,681	$6,472	($131)	$6,474
Custodial Assets (Note 8)				
Intragovernmental Non-Marketable				
Petroleum Pricing Violation Escrow Fund	394	397	3	397
Low Level Radioactive Waste Fund	4	4		4
Subtotal	$398	$401	$3	$401
Governmental Marketable Securities				
Petroleum Pricing Violation Escrow Fund	200	200		200
Total custodial investments	$598	$601	$3	$601
Total FY 1996 investments	$7,279	$7,073	($128)	$7,075

Pursuant to statutory authorizations, DOE invests monies in Treasury notes and commercial certificates of deposit which are secured by the Federal Deposit Insurance Corporation. DOE's investments primarily involve 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 into the respective funds. Funds in excess of those needed to pay current program costs are invested in Treasury securities. DOE also has non-Federal securities resulting from an over funded pension plan of a former contractor and the 1988 sale of the Great Plains Coal Gasification Project to a private concern.

DOE custodial investments are primarily Petroleum Pricing Violation Escrow Fund receipts collected as a result of consent agreements reached with individuals or firms that violated petroleum pricing regulations during the 1970s. These receipts are invested in Treasury securities and certificates of deposit at minority financial institutions pending determination by DOE as to how to distribute the fund balance.

Except for the Nuclear Waste Fund, DOE's investments are valued at the amortized acquisition cost. The Nuclear Waste Fund investments are reported at fair value in accordance with SFAS No. 115, which requires the valuation of investments at fair value when there is an intent to sell the securities prior to maturity. Based on past investment practices, the Nuclear Waste Fund's Treasury notes are routinely redeemed prior to maturity in order to maximize the return on the Fund's investments and minimize uninvested cash balances. As a result, the Nuclear Waste Fund's investment balance includes a net unrealized holding gain of $120 million as of September 30, 1997, and a net unrealized holding loss of $76 million as of September 30, 1996.

4. Accounts Receivable

(in millions)

	FY 1997			FY 1996		
	Receivable	Allowance	Net	Receivable	Allowance	Net
Agency Receivables						
Intragovernmental						
Accounts receivable	$442		$442	$569		$569
Interest receivable	114		114	114		114
Advances	7		7	5		5
Subtotal	$563		$563	$688		$688
Governmental						
Nuclear Waste Fund receivables	2,316		2,316	2,216		2,216
Uranium Enrichment D&D Fund receivables	1,662		1,662	1,790		1,790
Power Marketing Administrations' receivables	371		371	339	($2)	337
Advances and prepayments	76		76	66		66
Credit program receivables	66	($26)	40	63	(26)	37
Other	253	(123)	130	346	(124)	222
Subtotal	$4,744	($149)	$4,595	$4,820	($152)	$4,668
Total agency receivables	$5,307	($149)	$5,158	$5,508	($152)	$5,356
Custodial Receivables (Note 8)						
Petroleum Pricing Violation Escrow Fund	2,451	(2,319)	132	2,492	(2,318)	174
Total receivables	$7,758	($2,468)	$5,290	$8,000	($2,470)	$5,530

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. Interest receivable represents earned revenues on investments held in Treasury securities.

Governmental receivables represent amounts due primarily for Nuclear Waste Fund (NWF) and Uranium Enrichment Decontamination and Decommissioning (D&D) Fund fees. NWF receivables are supported by contracts and agreements with public utilities 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, overpayments, and other miscellaneous receivables.

Custodial receivables represent amounts owed as a result of consent agreements reached with individuals or firms that violated petroleum pricing 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 consent agreement. Allowance accounts have been established to reflect the realistic potential for recovery of amounts owed.

5. Stockpile Materials, Net

Stockpile materials consist of crude oil held in the Strategic Petroleum Reserve and nuclear materials. The Strategic Petroleum Reserve consists of crude oil stored in salt domes, terminals, and pipelines. The Reserve contained 563 million barrels of oil as of September 30, 1997, of which, 555 million barrels were available for drawdown. 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. During FY 1997, DOE sold 10.2 million barrels of crude oil inventory from the reserve. Congress authorized an FY 1998 sale of crude oil inventory to generate $207.5 million. An estimated 14 million barrels will be sold, although changes in the market could significantly affect the estimate.

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.

Stockpile materials are recorded at historical costs in accordance with Statement of Federal Financial Accounting Standard No. 3, *Accounting for Inventory and Related Property,* except for certain nuclear materials which have been identified as surplus or excess to DOE's needs. These nuclear materials are recorded at their net realizable value.

6. Property, Plant and Equipment, Net

(in millions)

	FY 1997			FY 1996		
	Acquisition Costs	Accumulated Depreciation	Net Book Value	Acquisition Costs	Accumulated Depreciation	Net Book Value
Land and land rights	$497	($4)	$493	$500	($4)	$496
Structures and facilities	29,138	(17,664)	11,474	28,859	(16,922)	11,937
ADP software	14	(13)	1	78	(63)	15
Equipment	13,725	(8,493)	5,232	16,035	(10,143)	5,892
Natural resources	11	(2)	9	11	(2)	9
Construction work in process	3,547		3,547	3,700		3,700
Total	$46,932	($26,176)	$20,756	$49,183	($27,134)	$22,049

In FY 1997, DOE raised its capitalization threshold from $5,000 to $25,000 for all field elements except the power marketing administrations. This change in accounting policy resulted in a charge to expense during FY 1997 of $694 million.

7. Regulatory Assets

(in millions)

	FY 1997	*FY 1996*
Non-Federal projects	$7,037	$7,106
Appropriation refinancing asset	5,228	
Conservation and fish & wildlife projects	796	823
Other	104	91
Total regulatory assets	$13,165	$8,020

DOE's power marketing administrations record certain assets in accordance with SFAS No. 71. 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.

Non-Federal Projects

The Bonneville Power Administration (BPA) has acquired all or part of the generating capability of five nuclear power plants, as well as several hydroelectric projects. The government's contracts with these utilities require BPA to pay all or part of the annual projects' budgets, including debt service, whether or not all the projects are completed. Because these projects' current and future costs can be recovered through BPA's electricity rates, the Statement of Financial Position includes a regulatory asset and related debt of $7,037 million and $7,106 million for these contracts for FY 1997 and FY 1996, respectively.

Appropriation refinancing asset

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. As a result, BPA assumed the liability to repay the unpaid balance of capital appropriations of the power generating assets of the Corps of Engineers and the Bureau of Reclamation associated with the FCRPS. In accordance with SFAS No. 71, an offsetting regulatory asset was established in FY 1997 which represents the ability of BPA to repay this appropriated capital from the proceeds of power sales generated from the Corps and Bureau of Reclamation assets.

Conservation and fish and wildlife projects

The conservation and fish and wildlife projects consist of facilities constructed by BPA for the protection, enhancement, and mitigation of fish and wildlife 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.

8. Custodial Assets

(in millions)

	Funds in Treasury (Note 2)	Investments (Note 3)	Accounts Receivable (Note 4)	Petroleum Reserve	Total
Fiscal Year 1997					
Petroleum Pricing Violation Escrow Fund		$500	$132		$632
Oil held in Strategic Petroleum Reserve for DOD				$106	106
Other custodial assets	$30	2			32
Total custodial assets	$30	$502	$132	$106	$770
Fiscal Year 1996					
Petroleum Pricing Violation Escrow Fund		$597	$174		$771
Oil held in Strategic Petroleum Reserve for DOD				$106	106
Other custodial assets	$37	4			41
Total custodial assets	$37	$601	$174	$106	$918

Petroleum Pricing Violation Escrow Fund

Pursuant to the Emergency Petroleum Allocation Act of 1973, DOE is responsible for recovering oil pricing overcharges and making restitution to injured parties. Monies received are invested in Treasury securities and minority financial institutions pending disbursement to injured parties or returned to the Treasury's general fund.

Oil Held in Strategic Petroleum Reserve for DOD

The FY 1993 Defense Appropriations Act authorized DOE to acquire, transport, store and prepare for ultimate drawdown of crude oil for the Department of Defense (DOD). The crude oil purchased with DOD funding is commingled with DOE stock and is held for DOD's future use.

Other Custodial Assets

Other custodial assets include funds in various Treasury deposit and special receipt accounts which are not available to fund DOE's operations

.9. Debt

(in millions)

	FY 1997	*FY 1996*
Intragovernmental Debt		
Borrowing from Treasury	$2,499	$2,456
Refinanced appropriations	6,584	
Subtotal	$9,083	$2,456
Governmental Debt		
Non-Federal projects	$7,037	$7,106
Other	129	91
Subtotal	$7,166	$7,197
Total debt	$16,249	$9,653

Borrowing from Treasury

To finance its capital programs, the Bonneville Power Administration 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. At September 30, 1997, $589 million of the outstanding debt was for conservation and renewable resource loans. The average interest rate of BPA's long-term debt exceeds the rate 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, 1997, for similar maturities, exceeds carrying value by approximately $303 million. 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 amount of appropriations refinanced was $6.6 billion, the majority of which represented the unpaid capital appropriations of the Corps of Engineers and the Bureau of Reclamation. (See Note 7)

Non-Federal projects

As discussed in Note 7, the non-Federal projects debt represents BPA's liability to pay all or part of the annual budgets, including debt service, of the generating capability of five nuclear power plants as well as several hydroelectric projects.

10. Appropriated Capital Owed to Treasury

Appropriated capital owed to Treasury represents the balance of appropriations provided to DOE'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 to 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 Bonneville Power Administration, receives an annual appropriation to fund operation and maintenance expenses. These appropriations totaled $221 million and $300 million in FY 1997 and FY 1996, respectively. 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. DOE treats these appropriations as a borrowing from Treasury, and as such, the Statement of Operations and Changes in Net Position does not reflect these funds as a financing source.

Except for the appropriation refinancing asset described in Note 7, DOE'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. DOE's power marketing administrations are responsible for collecting, and remitting to Treasury, revenues resulting from the sale of hydroelectric power generated by these facilities.

11. Governmental Accounts Payable

(in millions)

	FY 1997	*FY 1996*
Accrued payroll and benefits	$683	$748
Accounts payable & other accrued expenses	3,109	3,141
Petroleum Pricing Violation Escrow Fund balance payable to injured parties	583	719
Uranium inventories to be transferred to USEC (Note 21)	416	89
Contract holdbacks	61	56
Other	126	134
Total	$4,978	$4,887

12. Deferred Revenues and Other Credits

(in millions)

	FY 1997	*FY 1996*
Nuclear Waste Fund deferred revenues	$8,996	$8,205
Advances	176	160
Petroleum Pricing Violation Escrow Fund	47	52
Total deferred revenues and other credits	$9,219	$8,417

Nuclear Waste Fund 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 Nuclear Waste Fund activities. Annual adjustments are made to defer revenues that exceed the Nuclear Waste Fund expenses.

13. Environmental Liabilities

(in millions)

	FY 1997	FY 1996
EM facilities and legacy wastes	$141,321	$190,610
Active facilities	20,708	22,139
Pipeline facilities	8,758	11,420
High-level waste and spent nuclear fuel	6,745	1,421
Other	3,082	3,524
Total environmental liabilities	$180,614	$229,114
Amount funded by current appropriations	(1,148)	(1,165)
Total unfunded environmental liabilities	$179,466	$227,949

FY 1997 changes in environmental liabilities

FY 1997 total environmental liabilities, beginning balance	$229,114
Prior period adjustment (Note 24)	5,271
Adjusted beginning balance	$234,385
Changes to environmental liability estimates	
EM facilities and legacy wastes	($43,309)
Active facilities	(1,409)
Pipeline facilities	(2,662)
High-level waste and spent nuclear fuel	85
Other	(454)
Total changes in estimates	($47,749)
Operating expenditures related to legacy waste activities	(5,552)
Capital expenditures related to legacy waste activities	(470)
FY 1997 total environmental liabilities, ending balance	$180,614

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. In this regard, the treatment and storage of radioactive and chemical waste resulted in contamination of soil, surface water, and groundwater and an enormous backlog of waste and dangerous materials. The environmental legacy derived from the process of producing nuclear weapons includes thousands of contaminated areas and 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 waste must be stabilized, safeguarded, and dispositioned, including a quantity of plutonium sufficient to fabricate thousands of nuclear weapons.

In the FY 1996 financial statements, the Department reported an environmental liability totaling $229.1 billion. This liability was largely based on a mid-range estimate of life-cycle costs reported in the FY 1996 Baseline Environmental Management Report (BEMR). This report was published by our Office of Environmental Management (EM) pursuant to the requirements of the 1994 National Defense Authorization Act. The BEMR estimate represented life cycle costs beginning in FY 1996 and ending in 2070, when environmental activities were projected to be substantially completed.

During the latter part of FY 1996, DOE embarked on a new vision for addressing the legacy of the cold war and disposing of nuclear materials and waste. The vision is the cleanup of most of the EM nuclear sites (except for some waste streams at

a small number of sites) by 2006, while complying with compliance agreements and other legal obligations. The proposed strategy, which was communicated in a June 1997 Discussion Draft "Accelerating Cleanup: Focus on 2006" (hereafter referred to as the "2006 Plan") to Tribal Nations and stakeholders, provided the basis for the FY 1997 estimates developed by DOE sites[1].

Changes to FY 1996 Estimates

Revised estimates resulted in a net decrease of $47,749 million in environmental liabilities during FY 1997. The revised estimates for EM facilities and legacy wastes reflect reductions in surveillance and maintenance, program direction, and other costs resulting from earlier completion of remediation activities; cost savings due to privatization of certain projects, resequencing of activities, improved sharing of resources between sites, and other changes in the remediation approach; changes in end-state assumptions for certain facilities and sites (e.g., demolition/greenfield to deactivation/industrial re-use); and continuing efforts to improve productivity and reduce indirect costs. The revised estimate for pipeline facilities is largely due to a change in decontamination and decommissioning assumptions for certain facilities. The revised estimate for active facilities resulted from reductions in cleanup scope and changes to cost estimating models. Examples of changes to the cost estimating models, which represent the bulk of the decrease, include: inflation of stabilization/deactivation unit cost factors, assumptions regarding the duration and level of annual surveillance and maintenance, the use of the Automated Remediation Assessment Methodology for generating decommissioning cost, and changes in waste management and support cost multipliers from FY 1996 to FY 1997.

Legacy Wastes and Surplus Facilities 2006 Plan Estimate (FY 1997)

In FY 1997, the Department developed life cycle cost estimates consistent with the 2006 strategic vision based on two potential funding scenarios for the EM program: one that assumes a $6.0 billion annual funding level and another that assumes a $5.5 billion annual funding level. Each of the Operations/Field Offices was directed to develop a draft site 2006 Plan that analyzed each of those scenarios on the basis of allocations set in accordance with each Office's proportion of the fiscal year 1998 budget request. The two potential funding scenarios formed the range of the 2006 Plan environmental liability where the high funding provides the basis for the low end of the range and the low funding provides the basis for the high end. The estimates were reported in the June 1997 Discussion Draft in 1998 constant dollars. For financial statement reporting purposes, the Department deducted costs associated with waste generated from current and future operations, subtracted FY 1997 costs, and adjusted the estimates to FY 1997 constant dollars. The range, after adjustments, reflects a low end of $136.0 billion and a high end of $147.4 billion. The Department recognized $141.3 billion as the better estimate within the range.

The 2006 Plan cost and schedules were based on meeting existing compliance agreements, including milestones for as long as they were established, consistent with existing Federal, State and/or local statutes and/or regulations. Information included cost and schedule estimates for environmental restoration; nuclear material and facility stabilization; and waste treatment, storage, and disposal activities at each installation. It also includes costs for related activities such as landlord responsibilities, program management, and legally prescribed grants for participation and oversight by native American tribes and regulatory agencies.

Active Facilities

Environmental liabilities for active facilities represent anticipated remediation costs for those facilities that are conducting ongoing operations but will ultimately require stabilization, deactivation, and decommissioning. The FY 1996 environmental liability for active facilities was $ 22.1 billion, which was considered to be the best estimate in the range between $13.8 billion and $37.8 billion. In FY 1997, the Department modified its estimating methodology and developed a point estimate of $20.7 billion which it recognized as its environmental liability for active facilities. This estimate is not based on costs determined by remediation/feasibility studies performed at the active sites. Rather, cost estimating models were used to estimate costs of remediating sites with matching conditions. Such models were used to extrapolate stabilization, deactivation, and decommissioning costs for contaminated active facilities and structures not included in the 2006 Plan or the FY 1996 BEMR.

BEMR (Pipeline Facilities/Activities)

While the 1996 BEMR estimate included the cost for facilities scheduled to be transferred to the EM Program from other Departmental programs, the 2006 Plan estimate does not. In circumstances where additional cost estimating techniques were not applied to the pipeline facilities/activities during FY 1997, the BEMR (adjusted for inflation) continues to be used as it reflects the most comprehensive analysis of life cycle

[1]In Fiscal Year 1998, DOE will publish a Draft National 2006 Plan to accelerate the cleanup of most of EM's sites by 2006. The Draft National 2006 Plan will reflect estimates updated since the June Discussion Draft and subsequent to the end of fiscal year 1997.

costs. Where decisional changes in assumptions resulted in a material difference from the amounts in the BEMR, adjustments were made to reflect the assumptions. For example, the estimate for pipeline facilities was decreased due to a revised estimate for decontamination and decommissioning (D&D) of the gaseous diffusion plants near Portsmouth, Ohio and Paducah, Kentucky. Both of these facilities are currently under lease to the United States Enrichment Corporation and no date has been identified for the end of operations at either plant. However, a new estimate was prepared for the D&D of these facilities based on a contract which resulted in a reduction in the cost to remove the process equipment from three gaseous diffusion buildings.

High-Level Waste and Spent Nuclear Fuel

The Nuclear Waste Policy Act of 1982 established DOE's responsibility to provide for permanent disposal of the Nation's high-level radioactive waste and spent nuclear fuel. The Act requires that owners and generators of nuclear waste pay the full cost of the program and, to that end, establishes a fee which DOE must collect and annually assess to determine its adequacy.

The total-system life cycle cost for a surrogate single repository system without interim storage was estimated in FY 1995 at $33,100 million ($35,745 million in constant FY 1997 dollars). Yucca Mountain, Nevada, was assumed as the location for the repository since it is the only site that DOE is authorized by law to characterize, but this does not constitute a predecision that Yucca Mountain is an acceptable site. Cost estimates for additional scenarios including a two-repository system with interim storage were not developed since DOE did not have current cost information or designs for a second repository and interim storage.

To estimate the share of the total-system costs that should be allocated to the disposal of DOE's high-level waste and spent nuclear fuel, the methodology announced by DOE in the *Federal Register* in August 1987 was used. As of September 30, 1997, DOE's share of the total-system life cycle cost in FY 1997 dollars is estimated to be $6,947 million. In addition, interest accrued for DOE's share of costs incurred for the program in excess of DOE's contributions to the Nuclear Waste Fund totaled $496 million. DOE's contributions to the program from annual appropriations totaled $698 million. As a result, DOE's net unfunded liability for its share of costs for the disposal of high-level waste and spent nuclear fuel totaled $6,745 million as of September 30, 1997.

As of September 30, 1996, DOE accrued a liability totaling $1,421 million. This primarily represented DOE's share of unpaid costs incurred for the program plus accrued interest. During FY 1997, DOE recorded a prior period adjustment of $5,271 million to recognize its share of the total-system life cycle costs associated with the disposal of its high-level waste and spent nuclear fuel.

Since the total-system life cycle cost estimate was prepared in FY 1995, a number of changes in the program have occurred. The estimate has not been modified to reflect changes necessitated by an updated repository design or for changes in the volume and type of defense waste to be stored. During FY 1997, Congress directed DOE to issue a Viability Assessment, including a detailed cost estimate, of the repository by the end of FY 1998. DOE has elected to update the total-system life cycle cost estimate and complete it in conjunction with its FY 1998 Viability Assessment. DOE did, however, prepare a preliminary interim cost estimate during FY 1997 that indicated that disposal fees for defense high-level waste and spent nuclear fuel could increase by as much as $1.8 billion over the FY 1995 estimate, to $8.8 billion in FY 1997 dollars. DOE expects to complete the Viability Assessment and update the estimate during FY 1998 at which time it will adjust the accrual for spent nuclear fuel and high-level waste disposal.

Other Unfunded Environmental Liabilities

Dispositioning of excess plutonium

The Nuclear Weapons Council declared in December 1994, leading to the Secretary of Energy's announcement in February 1996 that 38.2 metric tons of weapons grade plutonium was excess to national security needs. DOE also designated a quantity of non-weapons grade plutonium as excess. DOE has considered a variety of disposition methodologies for this excess material. In December 1996, DOE selected a preferred alternative for the storage and disposition of the excess plutonium. The preferred alternative is to reduce, over time, the number of locations where the various forms of plutonium are stored, while the preferred alternative for disposition is to pursue a strategy that allows for immobilization of excess plutonium in glass or ceramic forms and burning of the excess material as mixed oxide fuel in existing reactors. A formal record of decision regarding the storage and disposition methodology was announced by the Secretary of Energy in January 1997. DOE has recognized a $2.2 billion unfunded liability in the FY 1997 financial statements to reflect the estimated cost in constant 1997 dollars of the preferred alternative. FY 1998 events including the development of updated cost estimates, identification of savings from reduced plutonium storage sites, and issuance of a record of decision selecting specific sites for plutonium disposition facilities may result in adjustments to the liability in subsequent fiscal years.

Dispositioning of excess highly enriched uranium waste

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 DOE's highly enriched

uranium (HEU) was 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. Material that could not be economically recovered was originally planned to be blended to LEU for disposal as low-level waste. DOE recorded a $592 million unfunded liability in FY 1996 for the disposition of 26.1 metric tons of surplus HEU estimated to be waste. After further evaluation of the material in FY 1997, it has been determined part of this material will now be sold for use as reactor fuel. The remaining part, the majority of the material, is already in the form of irradiated fuel, which requires no processing prior to disposal. Therefore, the $592 million unfunded liability for blending 26.1 metric tons of surplus HEU was reduced to zero in FY 1997.

Deactivation and decommissioning of inactive naval reactors facilities

Deactivation and decommissioning liabilities totaling $833 million for inactive naval facilities represent anticipated remediation costs for those facilities at the Pittsburgh and Schenectady Naval Reactors Offices that have ceased operations. The methodology used for estimating the environmental liabilities for these facilities was similar to the approach used in estimating the liabilities for active facilities in that experiences of similar types of facilities further along in the decommissioning process were used as a basis for determining the estimate.

Assumptions

Estimating the cost of DOE's environmental cleanup liability requires making assumptions about future activities and is inherently uncertain. The future course of DOE's environmental management program will depend on a number of fundamental technical and policy choices, many of which have not been made. Ultimately, these decisions will be made on the basis of fulfilling Congressional mandates, regulatory direction, and stakeholder input. Congressional appropriations at lower than anticipated levels would cause increases in life cycle costs.

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 following key assumptions were used in estimating the environmental liability:

- DOE 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 restoration costs.

- The Waste Isolation Pilot Plant will open in 1998.

- The first geological repository for high-level radioactive waste will open in 2010. At that time, it will accept spent nuclear fuel from commercial utilities. In 2016, the repository will begin accepting defense high-level waste and will begin accepting DOE-owned fuel shortly thereafter. An uncertainty relating to projected waste dispositioning costs is that current projections of legacy waste volume exceed storage capacity. This could result in significant cost growth in out years as additional storage capacity is acquired.

- Project baselines anticipate savings from enhanced productivity. However, it is possible that some projected savings may not be achieved.

- Only existing technologies, such as pumping and treating groundwater, are assumed to be available for estimating cleanup costs. Estimates were based on remedies considered technically and environmentally reasonable and achievable by local project managers and appropriate regulatory authorities.

- Environmental cleanup will be considered substantially complete when all sites have been remediated and when wastes generated from previous activities and from remediation and stabilization activities are safely disposed.

- Projects with no current feasible remediation approach are excluded from the estimate. The cost estimate would be higher if some remediation were assumed for these areas for which complete cleanup is not technically feasible with existing technologies. However, because no effective remedial technology could be identified, no basis for estimating cost was available. Significant projects excluded are:

  - nuclear explosion test areas (e.g., Nevada Test Site);
  - large surface water bodies (e.g., Clinch and Columbia rivers); and
  - most contaminated ground water (even with treatment, future use will remain restricted)

- Costs related to the disposition of depleted uranium hexafluoride (UF_6) are excluded from the estimate. DOE published a draft programmatic environmental impact statement (PEIS) in December 1997, which assesses several strategies for the long-term management of approximately 560,000 metric tons of depleted UF_6. The draft PEIS identifies a preferred alternative strategy that would use 100 percent of the Department's depleted UF_6 either as uranium oxide, uranium metal, or a combination of both. However, the draft PEIS acknowledges that potential uses that are capable of consuming a substantial fraction or all of the depleted uranium inventory are yet to be fully developed. Recognizing this uncertainty, DOE estimates in its September 1997, *Cost Analysis Report for the Long-Term Management of Depleted Uranium Hexafluoride*, that the cost of depleted UF_6 disposition will range from $1.6 billion to $3.9 billion.

In addition to the assumptions and exclusions identified above, another factor that could affect the certainty of the estimate include the adjustment to FY 1997 dollars which is required under Federal accounting standards. Any potential increases caused by future inflation could result in costs that are substantially higher than the recorded liability.

14. Pension and Other Actuarial Liabilities

(in millions)

	FY 1997	*FY 1996*
Contractor pension plans	$283	$204
Contractor postretirement benefits other than pensions	5,986	5,896
Federal employee workers' compensation benefits	59	54
Contractor disability and life insurance plans	20	18
Total actuarial liabilities	$6,348	$6,172
Less funded actuarial liabilities	(40)	(37)
Total unfunded actuarial liabilities	$6,308	$6,135

Most of DOE'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. DOE's cost under the contracts includes reimbursement of annual contractor contributions to these pension plans. DOE's contractors also sponsor postretirement benefits other than pensions (PRB) consisting of predominantly postretirement health care benefits. In the past, these costs were recognized on a pay-as-you-go or cash basis. Since DOE approves the contractors' pension and postretirement benefit plans and is ultimately responsible for funding the plans, the responsibility for any related liabilities rests with DOE.

DOE also reimburses the Department of Labor for Federal employee workers' compensation benefits. An unfunded liability is reported based on the Department of Labor's actuarial estimate of DOE's liability for future workers' compensation benefits. DOE also reimburses its major contractors for employee disability insurance plans and actuarial estimates are recorded as unfunded liabilities for these plans.

Contractor Pension Plans

DOE adopted SFAS No. 87, *Employers' Accounting for Pensions*, beginning in FY 1996 for contractor employees, for whom DOE has a continuing pension obligation. As of September 30, 1997, DOE has prepaid pension costs of $283 million and accrued pension costs of $283 million. Contractor plans include both qualified and unqualified plans with a variety of benefit formulas, consisting of final average pay, career average pay, dollar per month of service, and defined contribution plan with future contributions for retired employees. The plans cover union and/or nonunion employees.

For qualified plans, DOE'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 various DOE contractors, certain standardized actuarial assumptions were used. These standardized assumptions include the discount rates 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 7.75 percent for FY 1997 and 7.5 percent for FY 1996 were used, the average long-term rate of return on assets was 8.2 percent in FY 1997 and 8.5 percent in FY 1996, and the average rate of compensation increase was 4.9 percent in FY 1997 and 5.0 percent in FY 1996 in determining the net periodic pension cost.

The weighted average discount rates used to determine the vested benefit obligation, accrued benefit obligation, and projected benefit obligation as of September 30, 1997 and 1996 were 7.0 percent and 7.75 percent respectively.

Straight line amortization of unrecognized prior service cost over the average remaining years of service of the active plan participants and the minimum amortization of unrecognized gains and losses were used. The transition obligation was amortized over the greater of 15 years or the average remaining service.

Table 1 sets forth the vested benefit obligation, accrued benefit obligation, projected benefit obligation, plan assets, and a reconciliation of the funded status to the prepaid/(accrued) pension cost after minimum liability. Table 2 sets forth the components of net periodic pension cost for FY 1997.

Table 1 *(in millions)*

	FY 1997	FY 1996
Vested benefit obligation	$ (10,475)	$ (8,748)
Accrued benefit obligation	(11,354)	(9,310)
Projected benefit obligation:		
Projected benefit obligation	(13,462)	(11,142)
Plan assets	17,584	14,185
Funded status	$ 4,122	$ 3,043
Unrecognized transition asset	(1,590)	(1,696)
Unrecognized prior service cost	28	-
Unrecognized gain	(2,438)	(1,347)
Prepaid/(accrued) pension cost	$ 122	$ 0
Adjustment required to reflect minimum liability	(122)	(120)
Prepaid/(accrued) pension cost after minimum liability	$ 0	$ (120)
Total prepaid pension cost after minimum liability	283	84
Total accrued pension cost after minimum liability	$ (283)	$ (204)

In the interest of brevity, information regarding all defined benefit plans is summarized in a single table. Assets of one plan are not available to satisfy liabilities of another plan

Table 2 *(in millions)*

	FY 1997
Net Periodic Pension Cost:	
Service cost	367
Interest cost	861
Actual return on plan assets	(1,114)
Net amortization and deferral	(150)
Impact of curtailment or special termination benefits	34
Total net periodic pension cost	$ (2)

An expense of $45 million was recognized for special termination benefits at Flour Daniel Hanford Company, Hanford Site. Income of $16 million was recognized for a curtailment at Kaiser Hill Rocky Flats Plant. An expense of $5 million was recognized for a curtailment at Stanford University Stanford Linear Acceleration Center.

Contractor Postretirement Benefits Other Than Pensions (PRB)

DOE adopted SFAS No. 106, *Employers' Accounting for Postretirement Benefits Other Than Pensions*, beginning in FY 1994 for contractor employees for whom DOE 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, 1997, DOE has an accrued PRB liability of $5,986 million. Prior to FY 1994, PRB costs, consisting of predominantly retiree health care, were recognized as expenses when claims were paid. DOE's contractors sponsor a variety of postretirement benefits other than pensions. Benefits consist of medical, dental, life insurance, and Medicare Part B premium reimbursements. These plans include traditional indemnity plans, PPOs, HMOs with and without gatekeepers, or similar plans. Generally, the PRB plans are unfunded, and DOE's funding policy is to fund on a pay-as-you-go basis. There are 9 contractors, however, that are prefunding benefits in part as permitted by law.

Assumptions and methods

In order to provide consistency among the various DOE 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 and drug trend rates for a point of service plan, an HMO, or similar plan for under age 65, grade from 8.5 percent in 1996 down to 5.5 percent in 2002 and later and, for over age 64, grade from 7.0 percent in 1996 down to 5.5 percent in 2002 and later. For a PPO, a traditional indemnity plan, or similar plan, the trend rates for under age 65 grade from 11.0 percent in 1996 down to 5.5 percent in 2002 and later and, for over age 64, grade from 9.5 percent in 1996 down to 5.5 percent in 2002 and later. The dental trend rates at all ages grade down from 7.5 percent in 1996 to 5.5 percent in 2002 and later.

The weighted average discount rates of 7.75 percent for FY 1997 and 7.5 percent for FY 1996 were used, and the average long-term rate of return on assets was 7.36 percent in FY 1997 and 7.33 percent in FY 1996 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 accumulated postretirement benefit obligation as of September 30, 1997 and 1996 were 7.0 percent and 7.75 percent, respectively.

Straight line amortization of unrecognized prior service cost over the average remaining years of service to full eligibility for benefits of the active plan participants and the minimum amortization of unrecognized gains and losses were used. DOE chose immediate recognition of the transition obligation existing at the beginning of FY 1994.

Table 3 sets forth the components of the accumulated postretirement benefit obligation, plan assets, and a reconciliation of the funded status to the accrued postretirement benefit liability. Table 4 sets forth the components of net periodic postretirement benefit cost for FY 1997. Table 5 sets forth the effect of a one percentage point increase in the assumed health care cost trend rate for each future year.

Table 3 *(in millions)*

	FY 1997	FY 1996
Accumulated Postretirement Benefit Obligation:		
Fully eligible actives	$ (750)	$ (708)
Other actives	(1,850)	(1,918)
Retirees	(2,539)	(2,263)
Total APBO	$(5,139)	$ (4,889)
Plan assets	126	116
Funded status	$(5,013)	$ (4,773)
Unrecognized prior service cost	(98)	(93)
Unrecognized gain	(875)	(1,030)
Accrued postretirement benefit liability	$(5,986)	$ (5,896)

Table 4 *(in millions)*

	FY 1997
Net Periodic Postretirement Benefit Cost:	
Service cost	$ 136
Interest cost	326
Actual return on plan assets	(9)
Net amortization and deferral	(105)
Impact of curtailment	(68)
Total net periodic postretirement benefit cost	$ 280

Income of $68 million was recognized for curtailments at contractors including: Iowa State University Ames Laboratories ($2 million); Flour Daniel Hanford, Inc. Hanford Site ($48 million); Rust Geotech Grand Junction ($16 million); and Lockheed Martin Corporation Sandia Laboratories ($2 million).

Table 5 *(in millions)*

Trend Rate Sensitivity		
	Base Valuation	1% Trend Increase
Fiscal Year 1997		
Service cost plus interest cost for health care benefits	$ 423	$ 499
APBO as of Sept. 30, 1997 for health care benefits	$ 4,657	$ 5,354

15. Other Governmental Liabilities (unfunded) *(in millions)*

	FY 1997	FY 1996
Environment, safety and health compliance activities	$796	$1,152
United States Enrichment Corporation	242	352
Capital leases	103	141
Accrued annual leave of Federal employees	95	87
Other	81	68
Total other governmental liabilities	$1,317	$1,800

Environment, Safety and Health Compliance Activities

DOE's unfunded 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 FY 1998 and beyond for programs outside the purview of DOE's Environmental Management (EM) Program. ES&H activities within the purview of the EM program are included in the environmental liability estimate.

United States Enrichment Corporation

DOE has entered into an agreement with USEC that requires DOE to fund certain costs associated with the gaseous diffusion plants leased by USEC. DOE's unfunded liabilities for these costs include nuclear safety upgrades to the plants, security and processing costs for highly enriched material sold to USEC, and decommissioning costs for the plants supplying electrical energy to the gaseous diffusion plants.

Capital Leases

DOE's contractors lease facilities, machinery, equipment and other assets. The assets under capital leases are recorded under the lesser of the present value of minimal lease payments or the fair value of the assets. Unfunded capital lease liabilities generally reflected lease agreements in effect prior to FY 1993. Subsequent capital leases, except for telecommunications and certain computer leases, are required to be funded by existing appropriations.

16. Contingencies

DOE 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. DOE 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. The following are other significant contingencies:

- *Toxic Releases from DOE's Facilities* - DOE's contractors are defendants in a number of class action suits arising from alleged environmental contamination of air, water, and soil affecting communities surrounding various DOE facilities. Collectively, in the most significant cases involving facilities at Rocky Flats, Colorado; Hanford, Washington; Brookhaven, New York; and Paducah, Kentucky the claimants seek in excess of $2.1 billion in damages. DOE's contractors are vigorously contesting all of these cases, but an evaluation of the likely outcome of these claims cannot be estimated at this time.

- *Human Radiation Experiments* - DOE and its contractors are the defendants in a number of individual and class action suits, as well as administrative claims, arising from past human radiation experiments allegedly sponsored or carried out by the Federal government. In the aggregate, the remaining claims seek more than $400 million in damages. Due to the preliminary nature of many of these matters, an evaluation of the likely outcomes of these claims cannot be estimated at this time. While the cases will be vigorously contested, possibilities of settlement will also be pursued.

- *Compliance with the Nuclear Waste Policy Act* - In Indiana Michigan Power Co. v. DOE, the U.S. Court of Appeals for the District of Columbia Circuit found on July 23, 1996 that, in return for payment of fees under the Standard Contract, the Nuclear Waste Policy Act of 1982, as amended (NWPA) creates an unconditional obligation for DOE to commence disposing of utilities' spent nuclear fuel no later than January 31, 1998.

  On January 31, 1997, 36 contract holders and 33 states again filed petitions in the D.C. Circuit in Northern States Power Co. v. DOE for "enforcement" of the Indiana Michigan decision. They asserted that DOE's inability to meet the January 31, 1998 deadline constituted an anticipatory breach of provisions of the Standard Contract. On November 14, 1997, the court ruled that the utilities have a potentially adequate remedy for avoidable delay under the Standard Contract. The court, however, did not grant the request to hold future payments in escrow. On December 12, 1997, Yankee Atomic filed a petition for rehearing. On December 29, 1997, the DOE filed a petition for rehearing and suggestion for rehearing en banc. On January 30, 1998, the states filed a motion for enforcement of a writ of mandamus barring DOE from using the Nuclear Waste Fund to pay costs or damages connected with DOE's alleged breach and also to allow Nuclear Waste Fund payments to be placed in escrow. On February 19, 1998, the 36 utility contract holders filed a motion seeking the same relief, and 5 additional utility holders filed similar petitions.

  The court has not yet acted on any of these petitions and motions; accordingly, DOE is unable to predict the ultimate outcome of this litigation. If the court's decision stands, the Nuclear Waste Fund may be affected if the contract holders pursue and receive equitable adjustments of their fees. However, no claims for equitable adjustment have yet been filed and resolution of any claim will involve highly fact-specific and individualized decisions about the cost incurred by each contract holder as a result of the delay. Moreover, if equitable adjustments of fees substantially impact revenues to the Fund, DOE may be obligated under the NWPA's "full cost recovery" provision to propose offsetting fee adjustments.

  It is also possible that, whether or not the court' decision stands, utilities will sue for breach of contract. On February 18, 1998, Yankee Atomic filed such a suit in the Court of Federal Claims, seeking $70 million in damages. However, it is not possible at this time to estimate the nature or size of such claims, whether they will prevail, or whether any judgments would be payable out of the Judgment Fund, rather than the Nuclear Waste Fund. Therefore, no provision has been made for any loss in the financial statements.

- *Natural Resource Damage Claims* - DOE 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 DOE for natural resource injuries, primarily those remaining at DOE facilities after cleanup. Although any estimate of such liability is by necessity extremely speculative, the estimated range of DOE's NRD liability is $1.4 billion to $2.5 billion.

  Notwithstanding the potential for such claims, there neither are currently pending claims against DOE nor have there been any successful NRD claims against DOE. DOE's practice of addressing natural resource injuries during the remedy selection process should limit the exposure to potential NRD claims. DOE 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, DOE currently considers estimating its potential NRD liability speculative and any potential payment less than probable but reasonably possible. Therefore, DOE has not recognized such a liability in its financial statements to date.

- In FY 1995, the Tenaska Washington Partners (Tenaska) and Chase Manhattan Bank (Chase) filed suit against the Bonneville Power Administration (BPA) for breach of contract and lost revenues. In June 1996, BPA reached a settlement which resulted in a payment of $115 million by BPA to Chase. Currently, BPA and Tenaska are in binding arbitration to resolve Tenaska's suit. BPA believes that the factual and legal assertions by Tenaska in support of its $611 million claim are without merit. However, BPA believes that arbitration could result in an award from the Tenaska case in excess of $115 million. There are defenses available to BPA that could result in a lesser award. Any

monetary award received by Tenaska in arbitration will be offset by the $115 million paid by BPA to Chase in settlement of Chase's claim, plus interest accruing on this amount. In the event that Tenaska obtains an award in arbitration that is less than the amount BPA paid to Chase, Tenaska will owe BPA the difference. BPA's minimum liability for this matter has been accrued in DOE's financial statements.

17. Unexpended Appropriations

(in millions)

	Appropriated and Reimbursable Funds	Special Funds	Trust Funds	Total
Fiscal Year 1997				
Unobligated				
Available	$1,980	$25		$2,005
Unavailable	622	5		627
Total unobligated	$2,602	$30		$2,632
Undelivered orders	5,724	104	$10	5,838
Unfilled customer orders	(1,963)			(1,963)
Funded environmental liabilities (Note 13)	(1,120)	(28)		(1,148)
Total FY 1997 unexpended appropriations	$5,243	$106	$10	$5,359
Fiscal Year 1996				
Unobligated				
Available	$1,838	$24		$1,862
Unavailable	561	3		564
Total unobligated	$2,399	$27		$2,426
Undelivered orders	6,301	74	$12	6,387
Unfilled customer orders	(1,807)			(1,807)
Funded environmental liabilities (Note 13)	(1,139)	(26)		(1,165)
Total FY 1996 unexpended appropriations	$5,754	$75	$12	$5,841

18. Revenues and Related Costs from Goods and Services Provided

(in millions)

	FY 1997		
	Revenue from Goods and Services Provided	Cost of Goods and Services Provided	Net Revenues (Losses)
Governmental			
Power marketing administrations	$3,329	$2,150	$1,179
Sale of oil from the Naval Petroleum Reserves	488	135	353
Sale of oil from the Strategic Petroleum Reserves	220	241	(21)
Reimbursable and cooperative work	127	136	(9)
Technology transfer program	59	64	(5)
Sale of Russian origin uranium	41	38	3
Strategic alignment initiative asset sales	28	26	2
Other	39	37	2
Total governmental	$4,331	$2,827	$1,504
Intragovernmental			
Reimbursable work	1,249	1,318	(69)
Services performed for the U. S. Enrichment Corporation	515	521	(6)
Power marketing administrations	80	51	29
Other	30	22	8
Total intragovernmental	$1,874	$1,912	($38)
Total	$6,205	$4,739	$1,466

Power Marketing Administrations

DOE's 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.

Sale of Oil from the Naval Petroleum Reserves

Crude oil, natural gas, and liquid gas products produced from the Naval Petroleum Reserves are sold to public customers at bid prices. Proceeds from these sales and royalties from leased acreage are returned to Treasury. DOE's share of FY 1997 production at the Naval Petroleum Reserves totaled 34 million barrels of oil equivalent.

The Naval Petroleum Reserves' lands were set aside in the early 1900's by the U.S. Government. Therefore, no value has been recorded for the crude oil and gas reserves underlying these lands and no costs are reflected for the depletion of the reserves.

Sale of Oil from the Strategic Petroleum Reserve

During FY 1997, DOE sold 10.2 million barrels of oil from the Strategic Petroleum Reserve. The $220 million proceeds from this sale were returned to Treasury.

Reimbursable and Cooperative Work

DOE 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 DOE's direct mission, but part of the customer's mission, cooperative work is part of DOE's direct mission. Reimbursable work is financed by funds of Federal agencies ordering the work or by cash advances from non-Federal customers, and DOE receives no appropriated funds for such work or services. Cooperative work, however, is financed by funds appropriated to DOE that may be used in a cooperative effort with one or more Federal or non-Federal participants. Authorities for DOE to perform reimbursable work include the Economy Act of 1932, the Atomic Energy Act of 1954, Intergovernmental Cooperation Act of 1968, Department of Energy Organization Act of 1990, and Intergovernmental Personnel Act of 1970. 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.

DOE'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 DOE 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 a conditional waiver granted by OMB, which provide DOE authority to charge customers an amount less than the full cost of the product or service. In these instances, DOE will generally waive Departmental overhead charges for other Federal agencies and both Departmental overhead and depreciation for public entities, resulting in a net loss on these activities.

Technology Transfer Program

DOE 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 DOE'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.

Sale of Russian Origin Uranium

The USEC Privatization Act provided that the United States Enrichment Corporation, pursuant to the Russian HEU Agreement, transfer to DOE the natural uranium equivalent associated with at least 18 metric tons of Russian origin highly enriched uranium purchased from the Russian Executive Agent. The Russian HEU Agreement was executed to help meet U.S. nuclear nonproliferation objectives as well as to provide greater economic stability to Russia. A total of 5,512 metric tons of natural uranium was transferred to DOE in December 1996, in accordance with a memorandum of agreement between the USEC and DOE.

In accordance with the provisions of the Act, DOE must sell this uranium over a seven year period. During FY 1997, 1,446 metric tons of this material was sold to Global Nuclear Services and Supply Limited, the Russian Executive Agent's representative.

Services Performed for the U.S. Enrichment Corporation (USEC)

USEC leases DOE's gaseous diffusion plants. While DOE does not receive payment from USEC for the lease, USEC does pay for all services provided by DOE or its contractors. Most of the reimbursements are for the cost of providing electricity to operate the gaseous diffusion plants.

19. Interest

	(in millions) *FY 1997*
Intragovernmental	
Nuclear Waste Fund	$420
Uranium Enrichment D&D Fund	49
Petroleum Pricing Violation Escrow Fund	36
Other	36
Subtotal	$541
Governmental	
Nuclear Waste Fund	111
Total interest revenues	$652

Intragovernmental interest is earned on DOE's investments in Treasury notes as described in Note 3. Governmental interest for the Nuclear Waste Fund is earned on amounts owed by owners and generators of civilian spent nuclear fuel and high-level radioactive wastes.

20. Other Revenues and Financing Sources

(in millions)

	FY 1997
Nuclear Waste Fund	$590
Federal Energy Regulatory Commission	208
Petroleum Pricing Violation Escrow Fund	238
OPM retirement benefits	94
Uranium Enrichment Decontamination and Decommissioning Fund	37
Other	20
Total	$1,187

Nuclear Waste Fund

The Nuclear Waste Policy Act of 1982 requires DOE 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 Titles I and II of the Act. Fees assessed in FY 1997 totaled $585 million. An additional $5 million was earned from the net gains from activities related to the investment of Treasury securities.

Federal Energy Regulatory Commission

The Federal Energy Regulatory Commission (FERC) is an independent regulatory organization within DOE which is 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. FERC assesses most of its administrative program costs as an annual charge to each regulated entity. These revenues are returned to Treasury when collected.

Petroleum Pricing Violation Escrow Fund

DOE recognized $238 million in revenues in FY 1997 from oil overcharge reimbursements that were deferred in prior years pending a determination of how to distribute funds from the Petroleum Pricing Violation Escrow Fund. In FY 1997, DOE determined that these funds were not needed to settle claims from injured parties and returned the funds, along with $41 million in accrued interest to Treasury.

OPM Retirement Benefits

An imputed financing source and program expense is recognized for the estimated annual costs in excess of DOE contributions for Federal employee retirement benefits. These costs will ultimately be funded by the Office of Personnel Management and are therefore reported by DOE as an imputed financing source.

Uranium Enrichment Decontamination and Decommissioning Fund

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.

21. Receipts Transferred to Treasury and Other Agencies

(in millions)

	FY 1997
Power marketing administrations	($437)
Naval Petroleum Reserves	(513)
Strategic Petroleum Reserve	(220)
Federal Energy Regulatory Commission	(205)
Petroleum Pricing Violation Escrow Fund	(279)
Strategic alignment initiative asset sales	(22)
Other	(57)
Total	($1,733)

Power Marketing Administrations

Each of the power marketing administrations, except for the Alaska Power Administration, is responsible for collecting and remitting to 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.

Naval Petroleum Reserves

Proceeds from the sale of crude oil, natural gas, and liquid gas products produced from the Naval Petroleum Reserves totaling $486 million in FY 1997 were returned to Treasury. An additional $27 million representing the joint interest costs at the Naval Petroleum Reserves in California reimbursed to DOE by Chevron USA, Inc. was also returned to Treasury.

22. Other Expenses

(in millions)

	FY 1997
Excess nuclear materials and weapons components	$1,259
Change in capitalization threshold	694
Interest	514
Provision for net loss on USEC inventory transfers	184
Federal Energy Regulatory Commission	172
Energy Information Administration	75
Office of Inspector General	31
Other	78
Total	$3,007

Excess nuclear materials and weapons components

DOE reduced the value of the nuclear materials stockpile in FY 1995 and 1996 based on materials that were declared excess to national security needs and for which there was no non-defense programmatic requirement for the materials within the Department. During FY 1997, a determination was made that additional nuclear materials and weapon components were excess to national security and programmatic needs, which resulted in a loss of $1,259 million.

Change in capitalization threshold

In FY 1997, DOE raised its capitalization threshold from $5,000 to $25,000 for all field elements except the power marketing administrations. This change in accounting policy resulted in a charge to expense during FY 1997 of $694 million.

Interest

Interest consists primarily of $230 million accrued on BPA borrowing from Treasury, $146 million from accrued interest on BPA bonds, and $140 million accrued on the unpaid balance of appropriated capital owed to Treasury by the remaining power marketing administrations.

Provision for net loss on USEC inventory transfers

DOE recognized an estimated loss of $184 million during FY 1997 related to nuclear materials inventory transfers mandated by Public Law 104-134, the United States Enrichment Corporation Privatization Act of 1996. Pursuant to the law, the United States Enrichment Corporation (USEC) transferred uranium hexafluoride with a carrying value of $143 million to DOE for sale to Russia and others. The law also requires DOE to transfer up to 50 metric tons of highly enriched uranium and up to 7,000 tons of natural uranium to USEC. The total book value of uranium to be transferred to USEC is approximately $416 million. This amount is recorded as a liability on DOE's financial statements and represents an increase of $327 million from the FY 1996 estimated liability balance. The net of the $327 million increase in the liability and the $143 million carrying value of uranium transferred from USEC to DOE resulted in the net current year loss of $184 million.

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 DOE decision- and policy-makers, 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.

Office of 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 DOE operations.

23. Unfunded Liability Adjustments

(in millions)

	FY 1997
Environmental liability adjustments (see Note 13)	($47,749)
Environment, safety and health liability adjustments	(356)
Total unfunded environmental and ES&H liability adjustments	($48,105)

24. Prior Period Adjustments

(in millions)

	FY 1997
High-level waste and spent nuclear fuel	($5,271)
Correction of prior accumulated depreciation expense	(174)
Fast Flux Test Facility	136
Write-down of legacy waste facilities and equipment	(749)
Other	(12)
Total	($6,070)

High-level waste and spent nuclear fuel

As discussed in Note 13, DOE accrued an environmental liability totaling $1,421 million in FY 1996 for its share of unreimbursed nuclear waste fund program costs incurred, plus accrued interest. During FY 1997, DOE recorded a prior period adjustment of $5,271 million to recognize its share of the total-system life cycle costs associated with the disposal of its high-level waste and spent nuclear fuel.

Correction of prior period accumulated depreciation expense

Errors in recording depreciation and related capitalization entries in prior years were corrected in FY 1997.

Fast Flux Test Facility (FFTF)

The FFTF was written off in FY 1995 after DOE determined that the FFTF had no further research mission. In January 1997, DOE directed that the FFTF be held in standby until a final decision could be made as to whether or not it was needed for tritium and/or medical isotope production. The decision to place the FFTF in standby resulted in an increase to capitalized property, plant, and equipment and invested capital.

Write-down of legacy waste facilities and equipment

DOE changed its capitalization practices related to environmental management processing facilities and equipment during FY 1995. DOE implemented the guidance of the Financial Accounting Standards Board (FASB) Emerging Issues Task Force Issue 90-8, *Capitalization of Costs to Treat Environmental Contamination*. This guidance requires the expensing of facilities that treat, store, or dispose of existing wastes generated by past operations (legacy facilities and equipment). Analysis conducted in FY 1997 identified additional facilities and equipment resulting in write-downs of capitalized property.

25. Other Matters

Disposition of Depleted Uranium Generated by the U.S. Enrichment Corporation

Pursuant to Section 3109(a)(3) of the U.S. Enrichment Corporation (USEC) Privatization Act of 1996, DOE will assume responsibility for disposal of depleted uranium generated by USEC between July 1, 1993, and the privatization date. This responsibility is dependent on formal establishment of a private corporation to receive the assets and obligations of USEC and continue its business operations, as well as an execution of a Memorandum of Agreement between the Office of Management and Budget (OMB) and USEC to implement the requirements of Section 3109 of the Act.

As of September 30, 1997, the private corporation had not been established nor had negotiations between OMB, USEC and DOE been finalized. In December 1997, DOE published a Draft Programmatic Environmental Impact Statement for Alternative Strategies for the Long-Term Management and Use of Depleted Uranium Hexaflouride. While this assessment did not address the USEC generated depleted uranium requiring disposal because of uncertainties regarding its future management, it did identify a preferred alternative strategy for use of 100 percent of the Department's depleted UF_6, either as uranium oxide, uranium metal, or a combination of both.

Once the Memorandum of Agreement between OMB and USEC is finalized and uncertainties regarding future management of the USEC generated depleted uranium are resolved, the Department may include this material in future assessments. Such assessments could identify potential alternative uses for the USEC generated depleted uranium. Accordingly, no provision for the cost of disposal is included in these financial statements.

Sale of the Naval Petroleum Reserve No. 1 (NPR-1)

NPR-1 is one of the 11 largest oil and natural gas fields in the lower 48 states. Originally set aside in the early 1900's to ensure a future source of crude oil for the U.S. Navy, the field no longer serves a national security purpose and has been in commercial production since Congress authorized its development in 1976. NPR-1 reached peak production of 181,000 barrels of oil a day in 1981. Oil production averaged 57,500 barrels of oil per day during FY 1997.

As required by the FY 1996 National Defense Authorization Act, DOE offered NPR-1 for sale during FY 1997. In October 1997, DOE announced that Occidental Petroleum Corporation had submitted the highest responsible offer at $3.65 billion for all of DOE's interest in NPR-1. DOE completed the sale in February 1998. In accordance with a settlement agreement involving land claims related to the sale, 9% of the net sale proceeds will be paid to the state of California.

Formerly Utilized Sites Remedial Action Program

DOE transferred the Formerly Utilized Sites Remedial Action Program (FUSRAP) to the U.S. Army Corps of Engineers effective October 1997. The estimated remediation costs included in DOE's environmental liability as of September 30, 1997, totaled $1.4 billion.

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Consolidating Schedules

The Department of Energy is funded by multiple appropriations and receipt accounts which are grouped as follows for purposes of reporting consolidating schedules of financial position and operations and changes in net position:

Energy and Water Development Appropriations

Federal Energy Regulatory Administration:

0212 Salaries and Expenses Federal Energy Regulatory Commission
5105 Payments to States Under Federal Power Act
5230 Federal Energy Regulatory Commission

Power Marketing Administrations:

0304 Operation and Maintenance, Alaska Power Administration
4045 Bonneville Power Administration Fund
0302 Operation and Maintenance, Southeastern Power Administration
5653 Continuing Fund, Southeastern Power Administration
0303 Operation and Maintenance, Southwestern Power Administration
5649 Continuing Fund, Southwestern Power Administration
6772 Contract Holdbacks, Southwestern Power Administration
0305 Construction, Rehabilitation, Operation and Maintenance, Western Area Power Administration
4452 Colorado River Basin Power Marketing Fund
5068 Construction, Rehabilitation, Operation and Maintenance, Western Area Power Administration
5069 Emergency Fund, Western Area Power Administration
5178 Falcon and Amistad Operation and Maintenance Fund

Other DOE Programs:

0206 Geothermal Loan Guarantee and Interest Assistance Program
0222 General Science and Research Activities
0224 Energy Supply, Research Activities
0226 Uranium Supply and Enrichment Activities
0228 Departmental Administration
0236 Expenses, Office of the Inspector General
0240 Weapons Activities
0242 Defense Environmental Restoration and Waste Management
0243 Materials Production and Other Defense Programs
0244 Defense Nuclear Waste Disposal
4180 Expenses, Isotope Production and Distribution Program Fund
4563 Working Capital Fund, Dpartmetnal Administration
5226 Uranium Supply and Enrichment Activities
5227 Nuclear Waste Disposal Fund
5231 Uranium Enrichment Decontamination and Decommissioning Fund
6425 Payments by Alleged Violators of Department of Energy's Regulations
6427 Low-Level Radioactive Waste
8575 Advances for Cooperative Work

Interior and Related Agencies Appropriations

0213 Fossil Energy Research & Development
0214 Fossil Energy Construction
0215 Energy Conservation
0216 Energy Information Administration
0217 Economic Regulation
0218 Strategic Petroleum Reserve
0219 Naval Petroleum and Oil Shale Reserves
0233 Strategic Petroleum Reserve Petroleum Account
0234 Emergency Preparedness
0235 Clean Coal Technology
5154 Clean Coal Technology
5180 Alternative Fuels Production
5276 Strategic Petroleum Reserve Operating Fund
5289 Strategic Petroleum Reserve Decommissioning Fund

Consolidating Schedules of Financial Position

as of September 30, 1997 and 1996

FY 1997

(in millions)	Energy and Water Development: Federal Energy Regulatory Commission	Energy and Water Development: Power Marketing Administrations
ASSETS		
Agency Assets		
Intragovernmental		
Fund Balance with Treasury (Note 2)	$33	$663
Investments (Note 3)		
Accounts Receivable (Note 4)		18
Governmental		
Investments (Note 3)		
Accounts Receivable, Net (Note 4)	5	376
Stockpile Materials, Net (Note 5)		
Strategic Petroleum Reserve		
Nuclear Materials		
Property, Plant and Equipment, Net (Note 6)	18	5,361
Regulatory Assets (Note 7)		13,165
Other Agency Assets		329
Total Agency Assets	$56	$19,912
Custodial Assets (Note 8)	3	7
Total Assets	$59	$19,919
LIABILITIES		
Liabilities Covered by Budgetary Resources		
Intragovernmental Liabilities		
Accounts Payable	$1	$336
Debt (Note 9)		9,083
Appropriated Capital Owed to Treasury (Note 10)		2,309
Governmental Liabilities		
Accounts Payable (Note 11)	21	258
Debt (Note 9)		7,166
Deferred Revenue and Other Credits (Note 12)	7	41
Funded Environmental Liabilities (Note 13)		
Total Liabilities Covered by Budgetary Resources	$29	$19,193
Governmental Liabilities Not Covered by Budgetary Resources		
Environmental Liabilities (Note 13)		
Pension and Other Actuarial Liabilities (Note 14)		
Other Governmental Liabilities (Note 15)	9	8
Total Liabilities Not Covered by Budgetary Resources	$9	$8
Total Liabilities	$38	$19,201
NET POSITION		
Unexpended Appropriations (Note 17)	12	
Invested Capital	18	14
Cumulative Results of Operations		704
Future Funding Requirements	(9)	
Total Net Position	$21	$718
Total Liabilities and Net Position	$59	$19,919

Appropriations

Other DOE Programs	***Interior and Related Agencies Appropriations***	Eliminations	Consolidated
$7,112	$2,701		$10,509
7,845			7,845
1,598	$7	($1,060)	563
45			45
4,148	66		4,595
	14,981		14,981
22,531			22,531
13,932	1,445		20,756
			13,165
677	31		1,037
$57,888	$19,231	($1,060)	$96,027
654	106		770
$58,542	$19,337	($1,060)	$96,797
$1,485	$152	($1,060)	$914
			9,083
			2,309
4,374	326		4,979
			7,166
9,171			9,219
1,148			1,148
$16,178	$478	($1,060)	$34,818
179,256	210		179,466
6,291	17		6,308
1,198	102		1,317
$186,745	$329	$0	$187,091
$202,923	$807	($1,060)	$221,909
2,942	2,405		5,359
36,468	16,457		52,957
2,670	(3)		3,371
(186,461)	(329)		(186,799)
($144,381)	$18,530	$0	($125,112)
$58,542	$19,337	($1,060)	$96,797

Consolidating Schedules of Financial Position

as of September 30, 1997 and 1996

FY 1996

(in millions)	Energy and Water Development: Federal Energy Regulatory Commission	Energy and Water Development: Power Marketing Administrations
ASSETS		
Agency Assets		
Intragovernmental		
Fund Balance with Treasury	$42	$500
Investments		
Accounts Receivable		15
Governmental		
Investments		
Accounts Receivable, Net	2	342
Stockpile Materials, Net		
Strategic Petroleum Reserve		
Nuclear Materials		
Property, Plant and Equipment, Net	22	5,305
Regulatory Assets		8,020
Other Agency Assets		300
Total Agency Assets	$66	$14,482
Custodial Assets	3	4
Total Assets	$69	$14,486
LIABILITIES		
Liabilities Covered by Budgetary Resources		
Intragovernmental Liabilities		
Accounts Payable	$3	$296
Debt		2,456
Appropriated Capital Owed to Treasury		3,797
Governmental Liabilities		
Accounts Payable	17	247
Debt		7,197
Deferred Revenue and Other Credits	3	42
Funded Environmental Liabilities		
Total Liabilities Covered by Budgetary Resources	$23	$14,035
Governmental Liabilities Not Covered by Budgetary Resources		
Environmental Liabilities		
Pension and Other Actuarial Liabilities		31
Other Governmental Liabilities	8	1
Total Liabilities Not Covered by Budgetary Resources	$8	$32
Total Liabilities	$31	$14,067
NET POSITION		
Unexpended Appropriations	24	
Invested Capital	22	22
Cumulative Results of Operations		429
Future Funding Requirements	(8)	(32)
Total Net Position	$38	$419
Total Liabilities and Net Position	$69	$14,486

Appropriations	***Interior and Related Agencies Appropriations***		
Other DOE Programs		**Eliminations**	**Consolidated**
$7,380	$2,989		$10,911
6,402			6,402
1,785	4	($1,116)	688
72			72
4,183	141		4,668
	15,224		15,224
24,264			24,264
15,061	1,661		22,049
			8,020
486	31		817
$59,633	$20,050	($1,116)	$93,115
805	106		918
$60,438	$20,156	($1,116)	$94,033
$1,363	$230	($1,116)	$776
			2,456
			3,797
4,214	409		4,887
			7,197
8,372			8,417
1,165			1,165
$15,114	$639	($1,116)	$28,695
227,638	311		227,949
6,089	15		6,135
1,659	132		1,800
$235,386	$458		$235,884
$250,500	$1,097	($1,116)	$264,579
3,216	2,601		5,841
39,753	16,917		56,714
2,264	(3)		2,690
(235,295)	(456)		(235,791)
($190,062)	$19,059	$0	($170,546)
$60,438	$20,156	($1,116)	$94,033

Consolidating Schedules of Statement of Operations and Changes in Net Position

for the Fiscal Year Ended 1997

(in millions)	Energy and Water Development: Federal Energy Regulatory Commission	Energy and Water Development: Power Marketing Administrations
REVENUES AND FINANCING SOURCES		
Appropriated Capital Used	$162	$7
Revenues from Goods and Services Provided (Note 18)		
Public		3,329
Intragovernmental		80
Interest (Note 19)		
Other Revenues and Financing Sources (Note 20)	216	41
Less Receipts Transferred to Treasury & Other Agencies (Note 21)	(205)	(437)
Nuclear Waste Fund Deferred Revenue Adjustment (Note 12)		
Total Revenues and Financing Sources	$173	$3,020
EXPENSES		
Program Expenses		
Energy Resources		
National Security		
Environmental Quality		
Science and Technology		
Cost of Goods and Services Provided (Note 18)		
Public		2,150
Intragovernmental		51
Other Expenses (Note 22)	173	517
Unfunded Liability Adjustments (Note 23)		
Total Expenses	$173	$2,718
Revenues and Financing Sources in Excess of Total Expenses	$0	$302
CHANGES IN NET POSITION		
Net Position, Beginning Balance, as Stated	$38	$419
Prior Period Adjustments (Note 24)		(3)
Net Position, Beginning Balance, as Adjusted	$38	$416
Non-Operating Changes	(17)	
Revenues and Financing Sources in Excess of Total Expenses	0	302
Net Position	$21	$718

Appropriations	***Interior and Related Agencies Appropriations***		
Other DOE Programs		**Eliminations**	**Consolidated**
$18,479	$1,778	($377)	$20,049
272	730		4,331
1,883		($89)	1,874
687	13	($48)	652
990	27	($87)	1,187
(333)	(758)		(1,733)
(1,080)		$122	(958)
$20,898	$1,790	($479)	$25,402
431	1,246		$1,677
5,909	6		5,915
1,575	2	($377)	1,200
2,536	2	($13)	2,525
279	398		2,827
1,944	6	($89)	1,912
2,235	82		3,007
(47,781)	(324)		(48,105)
($32,872)	$1,418	($479)	($29,042)
$53,770	$372	$0	$54,444
($190,062)	$19,059		($170,546)
(5,833)	(234)		(6,070)
($195,895)	$18,825	$0	($176,616)
($2,256)	(667)		(2,940)
53,770	372	0	54,444
($144,381)	$18,530	$0	($125,112)

Supplemental Financial and Management Information

Program expenses are summarized by DOE business lines which represent the four major elements of the Department's mission. The business lines are comprised of 52 responsibility segments, representing major elements of DOE's mission. The full cost of the responsibility segments includes: (1) current year accrued costs associated with funds directly appropriated to each responsibility segment, (2) indirect costs for program management, program direction, field management, Departmental administration, and security investigations which have been allocated to the applicable responsibility segments, (3) current year expenses associated with the expiration or use of capital assets such as depreciation, consumption of inventories, writeoffs, and adjustments, and (4) current year adjustments to Departmental unfunded liabilities such as management and operating contractor pension and other post retirement benefits, capital leases, and imputed Office of Personnel Management retirement, health, and life insurance costs for Federal employees.

Program performance measures and results for the FY 1997 Performance Agreement between the President and the Secretary of Energy are also included for each business line. These performance measures represent the Department's commitments in key priority areas to achieve a more effective and efficient government.

Program Expenses by Business Lines

FY 1997 ENERGY RESOURCES PROGRAM EXPENSES
(in millions)

	Direct Funded Expenses	Program Direction and Overhead	Allocated Nonfund Expenses	Total Program Expenses
Energy Efficiency and Renewable Energy Programs				
Utility Technology	$287	$22	$8	$317
Building Technology	132	7	3	142
Federal Energy Management Program	22	2	1	25
Industrial Technology	128	14	6	148
Transportation Technology	210	14	18	242
Total Energy Efficiency and Renewable Energy Programs	$779	$59	$36	$874
Fossil Energy Programs				
Coal Research and Development	$132	$25	$8	$165
Petroleum Reseach and Development	74	11	2	87
Gas Reseach and Development	122	23	2	147
Clean Coal Technology	108	6	1	115
Strategic Petroleum Reserve	151	2	63	216
Other Fossil Energy Activities	25	5	1	31
Total Fossil Energy Programs	$612	$72	$77	$761
Nuclear Energy Programs				
Light Water Reactors	$36	$3	$1	$40
Other Nuclear Energy Activities	1		1	2
Total Nuclear Energy Programs	$37	$3	$2	$42
Total Energy Resources Program Expenses	**$1,428**	**$134**	**$115**	**$1,677**

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.

Energy Efficiency and Renewable Energy

Utility Technology - 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 - 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 their 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.

Fossil Energy

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.

Strategic Petroleum Reserve - operation and maintenance of the U.S.'s emergency stored oil supply at five sites in Texas and Louisiana.

Other Fossil Energy Activities - crosscutting program activities, including environment, safety, and health, cooperative research, materials research, and related essential fuels programs.

Nuclear Energy

Light Water Reactors - develop technologies to help maintain nuclear power as a viable option for our Nation's future electric production needs.

FY 1997 NATIONAL SECURITY PROGRAM EXPENSES
(in millions)

	Direct Funded Expenses	Program Direction and Overhead	Allocated Nonfund Expenses	Total Program Expenses
Defense Programs				
Stockpile Stewardship	$1,324	$163	$680	$2,167
Stockpile Management	1,510	209	391	2,110
Total Defense Programs	$2,834	$372	$1,071	$4,277
Nuclear Energy Programs				
Uranium Programs - Transparency	$16		$1	$17
Uranium Programs - Downblend HEU at Portsmouth	19	1	1	21
International Nuclear Safety	71	10	4	85
Nuclear Security	2			2
Naval Reactors	632	18	77	727
Total Nuclear Energy Programs	$740	$29	$83	$852
Nonproliferation and National Security Programs				
Verification and Control Technology	$397	$61	$29	$487
Nuclear Safeguards and Security	47	37	3	87
Emergency Management/Preparedness	18	7	2	27
Total Nuclear Energy Programs	$462	$105	$34	$601
Worker and Community Transition	$82	$6	3	$91
Fissile Materials Disposition	$83	$7	$4	$94
Total National Security Program Expenses	**$4,201**	**$519**	**$1,195**	**$5,915**

NATIONAL 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.

Defense Programs

Stockpile Stewardship - research, development, and engineering support necessary to maintain a safe and reliable U.S. nuclear weapons stockpile, which requires sustaining core competencies, nuclear weapons laboratories, production plants, and the Nevada Test Site.

Stockpile Management - physical maintenance of the U.S. nuclear weapons stockpile, including: continual surveillance and retirement and disposal of weapons; pursuing a dual-track new tritium source; maintaining a worldwide nuclear/radiological accident response capability; and providing safeguards/security oversight for special nuclear materials.

Nonproliferation and National Security

Verification and Control Technology - conduct Comprehensive Test Ban research and development, including arms control treaty verification, intelligence collecting and processing; supporting Presidential arms control and nonproliferation initiatives; and provide intelligence support in assessing nuclear threats.

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.

Emergency Management/Preparedness - control and direction to ensure comprehensive and integrated planning, preparedness, and response capability for emergencies involving DOE operations or facilities.

Nuclear Energy

International Nuclear Safety - enhance the safety of Soviet-designed nuclear power plants and help host countries upgrade their nuclear safety cultures and supporting infrastructures.

Nuclear Security - reduce the proliferation threats posed by plutonium and highly enriched uranium (HEU) materials available in Russia and other states of the Former Soviet Union.

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 120 operating reactors in nine different operational classes.

Uranium Programs - Downblend HEU at Portsmouth - downblend HEU hexafluoride to low enriched uranium (LEU) hexafluoride for use in filling the United States Enrichment Corporation (USEC) commercial orders for enrichment services and safeguarding of all HEU material at the Portsmouth site.

Uranium Programs - Transparency - cooperation and coordination 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.

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

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

FY 1997 ENVIRONMENTAL QUALITY PROGRAM EXPENSES
(in millions)

	Direct Funded Expenses	Program Direction and Overhead	Allocated Nonfund Expenses	Total Program Expenses
Environmental Restoration and Waste Management Programs				
Environmental Restoration	$1,668	$149	$121	$1,938
Waste Management	1,681	160	182	2,023
Nuclear Materials and Facilities Stabilization	1,208	70	173	1,451
Environmental Sciences	49	7	4	60
Uranium Enrichment Decontamination and Decommissioning	208	20	11	239
Other Environmental Management Activities	17	1		18
Total Environmental Restoration and Waste Management	$4,831	$407	$491	$5,729
Environmental, Safety and Health Programs				
Facility Safety	$68	$31	$5	$104
Health Studies	47	20	2	69
Total Environment, Safety and Health Programs	$115	$51	$7	$173
Civilian Radioactive Waste Management	$336		$5	$341
Nuclear Energy Programs				
Nuclear Technology Research and Development	$19	$2	$5	$26
Termination Costs	102	10	13	125
Uranium Programs	46	2	12	60
	$167	$14	$30	$211
Legacy Waste Cleanup Adjustment				($5,254)
Total Environmental Quality Program Expenses	**$5,449**	**$472**	**$533**	**$1,200**

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

Environmental Management

Environmental Restoration - in accordance with Federal and State laws and other legal agreements, protects human health and the environment from risks posed by inactive, surplus DOE facilities and contaminated areas; conducts remediation activities, including both cleaning-up or containment of contamination including soil, ground water, and surface water; and performs decommissioning of contaminated facilities including reactors and chemical processing buildings.

Waste Management - provides for the safe treatment, storage, and disposal of waste from operations. The different categories of waste managed by this program include high-level, transuranic, mixed transuranic, low-level, mixed low-level, uranium mill tailings, hazardous, sanitary, and special case waste.

Nuclear Materials and Facilities Stabilization - provides for: stabilizing, consolidating, and storing special nuclear materials, including plutonium and highly enriched uranium prior to final disposition; deactivating surplus facilities to a safe and low maintenance condition while awaiting final decommissioning; and managing spent nuclear fuel, including treatment and storage. Integral to these functions is continuous surveillance and maintenance, which is required for safety and security.

Environmental Sciences Program - provides strategic basic research to strengthen the Office of Environmental Management's basic science and engineering activities through a competitive process offered to the DOE national laboratories, academic, and industrial organizations. The program will lead to long-term reduced cleanup costs and risks to workers and the public.

Environmental Privatization Initiative - provides for privatization of the Tank Waste Remediation System at the Department's Hanford site and allows the Department to reimburse contractors in the event the Government incurs liabilities for termination of privatization contracts.

Uranium Enrichment Decontamination and Decommissioning - consists of remedial action and other related environmental clean-up activities at sites leased and operated by the United States Enrichment Corporation, including DOE facilities at these sites, and, additionally, provides for partial reimbursement of remediation costs attributable to other uranium and thorium purchased by the Federal government.

Other Environmental Management Activities - provides for the acceleration and completion of selected projects, which will result in a significant long-term cost savings through mortgage and risk reduction as well as packaging certification and transportation safety activities.

Environment, Safety, and Health

Facility Safety - provides Department wide technical support and independent oversight in areas of nuclear safety, occupational health and safety, environmental compliance, and safeguards and security including the National Environmental Policy Act, safety assistance, and environmental compliance implementation assistance.

Health Studies - provides technical assistance for health studies including the Radiation Effects Research Foundation.

Nuclear Energy

Nuclear Technology Research and Development - development of electrometallurgical technology for the treatment of DOE spent nuclear fuel.

Termination Costs - cost-effectively shut down terminated Federal programs and conduct the activities necessary to place unneeded Federal nuclear research facilities into an industrially and radiologically safe shutdown condition.

Uranium Programs - All Other - 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.

Civilian Radioactive Waste Management - development and management of a permanent Federal depository for spent nuclear fuel from civilian reactors and high-level radioactive waste from atomic energy defense activities in a manner that assures public and worker safety and protects the environment.

Legacy Waste Cleanup Adjustment - operating expenditures related to legacy waste cleanup activities which represent a reduction of DOE's environmental liabilities. These costs are excluded from current year program expenses since the expense was accrued in prior years when DOE recorded the environmental liabilities.

FY 1997 SCIENCE AND TECHNOLOGY PROGRAM EXPENSES
(in millions)

	Direct Funded Expenses	Program Direction and Overhead	Allocated Nonfund Expenses	Total Program Expenses
Energy Research Programs				
Biological and Environmental Research	$322	$23	$22	$367
Fusion Energy Sciences	222	9	17	248
Basic Energy Sciences	565	38	65	668
High Energy Physics	485	28	83	596
Nuclear Physics	210	13	34	257
Computational and Technology Research	140	5	12	157
Superconducting Super Collider	(15)	(1)	2	(14)
Small Business Innovative Research/Technology Transfer	80	7	6	93
University and Science Education	12	1		13
Technical Information Management Program	11		2	13
Other Energy Research Activities	4		0	4
Total Energy Research Programs	$2,036	$123	$243	$2,402
Nuclear Energy Programs				
University Nuclear Science and Reactor Support	$3	$1		$4
Advanced Radioisotope Power System	33	3	2	38
Isotope Production and Distribution	21		3	24
Total Nuclear Energy Programs	$57	$4	$5	$66
Technology Development	$298	$42	$15	$355
Legacy Waste Cleanup Adjustment				($298)
Total Science and Technology Program Expenses	**$2,391**	**$169**	**$263**	**$2,525**

ES - 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.

Energy Research

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 DOE'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 DOE 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.

Computational and Technology 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.

Superconducting Super Collider - expenditures are for the orderly termination of this activity.

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

University and Science Education - provides assistance in science education (precollege through postdoctoral), including reactor fuel assistance, scientific instrumentation, and technology transfer.

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

Other Energy Research Activities - energy research analyses of DOE programs and initiatives, operation and maintenance of multiprogram laboratories, and space research and development closeout costs.

Nuclear Energy

Advanced Radioisotope Power System - development, demonstration, testing, and delivery of radioisotope power systems.

University Nuclear Science and Reactor Support - maintain the capability in the U.S. to conduct research, address pressing environmental challenges, and preserve the nuclear energy option.

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.

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.

Legacy Waste Cleanup Adjustment - operating expenditures related to legacy waste cleanup activities which represent a reduction of DOE's environmental liabilities. These costs are excluded from current year program expenses since the expense was accrued in prior years when DOE recorded the environmental liabilities.

Performance Measures by Business Lines

Energy Resources

ER-01 TRANSFERRING PROVEN ENERGY EFFICIENCY MEASURES

Assessment: Successful

Description: Apply energy efficiency measures and renewable technologies to buildings and operations to reduce government energy consumption and the resulting pollution by 30 percent by 2005. Save low-income residents over $10 million and the government $1 billion in annual energy costs by reducing energy consumption by one quad and pollution by 15 million metric ton carbon dioxide equivalent (MMTCE) per year by the turn of the century. (EE)

❒ Success will be measured by:

- *Establishing regional umbrella energy engineering contracts any Federal agency can use to simplify procurement, accelerate private sector investment, and increase energy savings and renewable energy use at Federal facilities.*

FY 1997 Results: Statement of work complete, decision to award one nationwide contract made, evaluation criteria under review.

- *Awarding a contract which establishes a financing and delivery mechanism for renewable energy and energy efficiency projects to all Federal facilities in eight western states and pacific territories.*

FY 1997 Results: On May 21, 1997, Secretary Peña announced the award of five energy savings performance contracts to energy service companies. Orders up to $750 million may be placed under these contracts for energy efficient improvements and renewable technologies in Federal facilities in eight western states and pacific territories. The energy service companies pay for and install the energy saving equipment in Federal buildings, at no up-front cost to the government. In turn, the companies receive a share of the savings that are realized when the energy costs are reduced. Any agency can use these contracts and streamline the process to execute a project. When fully implemented, this program will attract more than $5 billion in private sector funding to help Federal facilities reduce their energy consumption and related costs, save taxpayers' money, and reduce pollution.

- *Weatherizing 60,000+ low-income homes, bringing the total number of homes weatherized since 1977 to over 4.4 million.*

FY 1997 Results: At least 61,120 homes were weatherized in FY 1997.

ER-02 DESIGNING AND DELIVERING THE VEHICLES OF THE FUTURE

Assessment: Successful

Description: Lead the government's research and development effort for building an 80 mile-per-gallon family car, a major goal of the government-industry Partnership for a New Generation Vehicle (PNGV). Complete a production prototype by the year 2004. Deliver technologies that will improve fuel economy of diesel engines while reducing emissions. Develop, demonstrate, and use domestic fuels that are low-cost and clean. (EE)

❒ Success will be measured by:

- *Using advanced transportation technologies developed with industry partners to build and test a 50 mpg mid-size concept car incorporating hybrid propulsion technology.*

FY 1997 Results: General Motors, Ford and Chrysler have all built at least two generations of test vehicle mules and are planning a final mule which is intended to prove out the hybrid propulsion powertrain concepts. Both parallel and series designs have shown to achieve high efficiency gains. Different packaging and baseline weights will cause fuel efficiency results to vary (36 to 50 mpg) for each Original Equipment Manufacturer (OEM). However, systems analysis shows that all powertrains, when integrated into a ground up vehicle system design result in achieving overall PNGV goals. Batteries fall significantly short of energy, power and weight goals, although the outlook for Lithium is promising and is being pursued. Emissions predictions to achieve EPA Tier 2 (EPA's light duty vehicle emission limits that take effect in 2003 for CO, NOx, particulate matter, non-methane hydrocarbons, and non-methane organic gases) or lower look promising, but little experimental data is available.

- *Establishing a DOE/U.S. diesel industry team to develop clean technologies for pickup trucks and sport utility vehicles.*

FY 1997 Results: Highly competitive engine development contracts have been initiated with the 3 major U.S. heavy duty diesel engine manufacturers. This is supported by co-operative R&D in fundamental combustion/emissions analysis at the Sandia National Laboratory.

- *Establishing a partnership with industry participants in the Administration's Biomass Energy Initiative for a commercial-scale demonstration facility producing ethanol for motor fuel from agricultural crop waste.*

FY 1997 Results: BC International (BCI) signed a collaborative agreement with DOE in November 1997. BCI is proceeding with final engineering and is in the process of obtaining financing for modifying the former molasses-to-ethanol plant (purchased by BCI in 1996) into a biomass ethanol production plant. Also, DOE entered into two additional partnerships with Masada Resources Inc. and Arkenol Inc. to commercially demonstrate their respective ethanol production technologies.

- *Expanding the Clean Cities program from 50 to 55 cities*.

FY 1997 Results: 57 communities across the country have been designated participants in the Department's Clean Cities program. These communities have established goals and action plan for increasing the use of alternative fuels and vehicles to achieve cleaner air, energy diversity, and create jobs.

ER-03 DEVELOPING RENEWABLE DOMESTIC ENERGY

Assessment: Successful

Description: Advance renewable energy development through cost-shared industry, laboratory, and DOE Research, Development and Deployment partnerships, and improve the global competitiveness of U.S. renewable energy industry. Build the U.S. renewable industry to $1 billion in sales of domestically produced technologies resulting from our R&D efforts by the year 2000, and preventing pollution by increasing renewables based capacity to more than 20 gigawatts (GW) by the year 2010. (EE)

❒ Success will be measured by:

- *Increasing U.S. renewable industry sales to more than $600 million ($500 million in exports).*

FY 1997 Results: U.S. renewable industry annual sales surpassed $700 million (more than $500 million in exports).

- *Developing a government, industry, and customer RoadMap to accelerate the use of renewable energy in new and existing buildings.*

FY 1997 Results: On June 26, 1997, the President announced the Million Solar Roofs Initiative, to work with businesses and communities to use the sun's energy to reduce our reliance on fossil fuels by installing solar panels on 1 million more roofs around our nation by 2010. It is anticipated that the Million Solar Roofs Initiative will increase momentum in the U.S. for more widespread use of solar power. Domestically, increased commercial demand will lower the cost of solar technologies, making them more accessible. Additionally, the American solar power industry will be in a stronger position to compete against foreign companies for market share in the expanding international renewable energy market. On June 27, 1997, Secretary Peña, outlined the Department's activities to carry out this initiative. Secretary Peña's remarks were summarized in a press release issued the same day. The Department is developing a detailed Program Management Plan, and is developing an initial partner list of communities, cities, home builders, utilities and non-profit organizations. An Internet home page has been established for the initiative: http://www.eren.doe.gov/millionroofs/

- *Attracting $80 to $100 million of private sector investment to cost share our R&D in renewable technologies.*

FY 1997 Results: In FY 1997, $80 million of private sector investment was obtained through cost sharing of R&D projects. In some cases, this represents industry willingness to share as much as 50 percent or more of the cost of an R&D project and indicates concurrence with the Department's R&D thrusts in renewable energy technologies and the expectation that this research will lead to viable commercial products.

ER-04 BOOSTING THE NATION'S PRODUCTION OF NATURAL GAS AND OIL

Assessment: Successful

Description: Improve the capability of the nation's petroleum industry to produce additional supplies of secure, domestic natural gas and oil, increasing U.S. oil production one million barrels per day, and increasing gas production by 3.7 trillion cubic feet (Tcf) per year by 2010. (FE)

❒ Success will be measured by:

- *Demonstrating and transferring to industry three seismic imaging advanced computational technologies developed by the National Labs; these technologies can increase recovery from 60 percent of Gulf of Mexico resources.*

FY 1997 Results: All three technologies have met their objectives: the field test of the digital converter and fiber optic telemetry system fabricated by Amoco and OYO Geospace Exploration for use in a single well seismic imaging demonstrated excellent equipment performance and signal acquisition. Additional system enhancements include conversion of the Conoco source to work on the Gas Research Institute fiber optic wireline. Recently

acquired vertical seismic profile (VSP) field data has been used to evaluate a suite of algorithms to cancel rig noise from pumps, generators, etc. that obscure the formation data. The computational portion of the code for subsalt seismic imaging is completed and validated and the message passing part of the code has been optimized.

- *Demonstrating four new technologies in fluvial-dominated deltaic reservoirs to expand the applicability and improve the performance of waterflooding, to add ultimately 60 million barrels of reserves.*

FY 1997 Results: Four technologies have been successfully demonstrated in the field, resulting in increased oil reserves and production: Utilization of indigenous microbes in the Black Warrior Basin, Alabama, has documented production increases in treated areas of the reservoir and declining production in untreated control areas, and incremental oil continues to be produced; CO_2 injection in a watered out Gulf of Mexico reservoir in Port Neches Field, TX has recovered an additional 14 percent of the original oil in place; two technologies demonstrated in Savonburg Field, KS waterflooding and permeability modification by polymer injection have resulted in chemical costs being lowered 34 percent per day, from an average of $38 per day to $25 per day, and estimated ultimate production increased by 360,000 barrels of oil.

- *Assessing the feasibility of improved safety and environmental management planning (SEMP) for small independent operators, for offshore oil and gas facilities, towards overall program objective to help reduce cumulative industry compliance costs by $16 billion by 2010 in collaboration with Department of Interior.*

FY 1997 Results: A feasibility study by Taylor Energy Company has shown that developing a SEMP plan is cost effective, reducing both the number of incidents and the cost of insurance. The company has developed a model plan that can be used by small to medium sized operators as a blueprint for developing their own safety and environmental management programs.

- *Demonstrating and transferring five new drilling, completion, and stimulation technologies that contribute, by 2010, to the reduction of drilling costs by 13 percent, completion costs by 20-30 percent and operating costs by almost 20 percent.*

FY 1997 Results: 1) Completed fracture measurement technology validation, evaluation, and field testing at M-sites. Results data and evaluation were presented at technology workshops to various members of the oil and gas industry representing 43 U.S. companies. 2) Completed field testing and evaluation of 6-3/4" pump for use in 7-7/8" hole. Use of this new high pressure down hole pump will reduce drilling costs by increasing the rate of penetration by one and one half times for wells drilled in deep formations with hard rock that would normally require long drilling times. The results of testing were presented at the 1997 annual meeting of the Society of Petroleum Engineers. 3) Completed field testing, will now focus on additional demonstration activities. 4) Completed 5 low exposure field tests to examine the performance of specific components of the system, and to examine the drilling environment. 5) Completed 15 demonstrations to date, and will continue demonstrations in various reservoir types and transfer results to industry.

- *Completing two regulatory reform initiatives with the State of California that will provide scientific data for regulatory streamlining.*

FY 1997 Results: 1) A field technique that employs an inexpensive measuring device (about $20) to accurately measure emissions from heavy oil storage tanks has been fully tested; 2) the California Air Resources Board, who collaborated in this effort, is utilizing this data to promulgate regulations to comply with the 1990 Amendments to the Clean Air Act; and 3) a report detailing the results of DOE's study on both the chemical and potential hazards analysis on using tank bottoms, an ingredient in road mix, has been completed.

ER-05 PROVIDING A NEW OPTION TO SUPPLEMENT THE NATION'S LIQUID FUELS

Assessment: Successful

Description: Provide the Nation by 2005 with an alternative source of liquid fuels, estimated to cost $25 per barrel or less, that can be produced from coal, petroleum, dedicated energy crops and solid wastes. (FE)

❒ Success will be measured by:

- *Completing a series of laboratory and bench-scale tests of improved process concepts to: (1) produce premium liquid fuels by co-processing coal with used oil, waste plastics, tires, and other solid wastes of interest to stakeholders and customers, and (2) indicate the competitiveness of these concepts with other waste disposal options.*

FY 1997 Results: Successfully produced liquid fuels in bench scale tests by coprocessing coal with refinery heavy residual oil and waste materials. Economics are favorable.

ER-06 REDUCING U.S. VULNERABILITY TO ENERGY SUPPLY DISRUPTIONS

Assessment: Successful

Description: Ensure by the year 2000 the readiness of the Strategic Petroleum Reserve (SPR) to drawdown its inventory of crude oil at a sustainable rate of 4.2 million barrels (MMB)/day within 15 days of direction from the President. (FE)

❒ Success will be measured by:

- *Degasifying an additional 61 MMB of inventory to increase drawdown capability from 3.4 to 3.7 MMB/day and inventory availability of 524 MMB.*

FY 1997 Results: Degasified an additional 81 million barrels of oil inventory with higher-than-normal gas content, using surface degassing equipment, thereby raising the total amount of degassed oil to 158 million barrels. Increased the drawdown capability from 3.4 million barrels to 3.7 million barrels per day and raised inventory availability for a potential drawdown to 555 million barrels.

- *Initiating an additional 25 percent of the infrastructure life extension program, thereby bringing program implementation to approximately 71 percent.*

FY 1997 Results: Initiated an additional 25 percent of the infrastructure life extension program, thereby bringing program implementation to approximately 76 percent of the $320 million dollar program. During FY 1997, the total estimated cost of the life extension program was adjusted from $351 million to $320 million due to the consolidation of multiple projects, value engineering efforts, and a ramping-down of contingency consistent with the advanced stage of execution.

- *Completing transfer or sale of all readily removable oil from the Weeks Island storage site to a more geologically stable site ensuring the availability of this oil.*

FY 1997 Results: In preparation for the future decommissioning of the Weeks Island, Louisiana, storage site due to geologic instabilities, the Department completed, during FY 1997, the transfer of all readily removable oil from the Weeks Island storage site. In addition to the oil relocated to other SPR sites, eighteen million barrels of this site's inventory were sold in FY 1996 to finance the site's decommissioning and general budget deficit reduction. With the completion of this reported removal of oil from the Weeks Island site, the planned objective of this success measure, ensuring the continued availability of this oil for drawdown, has been achieved.

ER-07 DEVELOPING THE CLEAN, HIGH EFFICIENCY POWER PLANT OF THE 21ST CENTURY

Assessment: Successful

Description: Provide the nation's electric power industry from 2000 to 2010 with a new generation of natural gas, Biomass and coal power technologies that progressively reduce carbon dioxide (CO2) emissions by 30 to 50 percent, lower sulfur dioxide (SO2) and nitrogen oxides (NOx) emissions to as little as 1/10th of the levels mandated by current Federal standards, and produce electricity at costs 10 to 20 percent below today's conventional plants. (FE)

❒ Success will be measured by:

- *Continuing accomplishments in the Clean Coal Technology Demonstration Program, including: - Completing operations at two coal processing facilities (Rosebud, Custom Coals) for clean fuel products that can be used to reduce a utility or industrial power plant's sulfur emissions by 80-90 percent. - Commencing operations at a third commercial-scale coal gasification combined cycle facility (Sierra Pacific).*

FY 1997 Results: The Clean Coal Technology Demonstration Program continues to achieve overall success in attaining the FY 1997 commitment. The demonstration of Rosebud SynCoal Partnership's advanced coal conversion process for upgrading low-rank subbituminous and lignite coals continued reliable operation. Over a million tons of high-quality, low sulfur SynCoal® product have been produced at the demonstration facility. The Department of Energy approved a 13 month no-cost time extension continuing the project to December 1998 that will allow the goals of the operating phase to be achieved. Custom Coals International demonstration facility operations were halted in February 1997 due to problems associated with refuse impoundment. In the fourth quarter of FY 1997, Custom Coals International and Tanoma Coal Sales, Inc. reached agreement on terms for Tanoma to purchase the demonstration facility and continue the project. Tanoma submitted to DOE a draft proposal for review concerning the completion of the project. DOE approved a no-cost time extension continuing the project to December 1997. Sierra Pacific became operational in the fourth quarter of FY 1997.

- *Verifying design goals of fuel cell systems by completing the scheduled test runs of the first two complete natural gas molten carbonate fuel cell power plants that will lead to a 60 percent-efficient market-ready fuel cell system by the year 2000, and initiating testing of the first integrated solid oxide fuel cell plant for electric power generation.*

FY 1997 Results: The Fuel Cell Program estimates that both molten carbonate and solid oxide technologies will be market-ready in 2002 (rather than 2000). This extended estimate has occurred because Federal funding over the last few years has been less than needed for developer requirements. Molton Carbonate Fuel Cells scheduled test runs completed successfully. The Solid Oxide Fuel Cells program completed a 100 kW integrated system assembly.

- *Verifying components in Phase III testing for Advanced Turbine Systems, prior to Phase IV pre-commercial demonstration at utility scale to verify efficiency of at least 60 percent with less than 9 parts per million (ppm) NOx.*

FY 1997 Results: Gas turbine steam cooled components in compressor were verified. Gas turbine steam cooled parts were validated.

- *Completing Combustion 2000 accomplishments to develop a Low Emission Boiler System (LEBS) with 42 percent efficiency; SO2 and NOx emissions less than 1/6 the New Source Performance Standard (NSPS); and Indirect Fired Cycle (IFC) with 47 percent efficiency and pollutant emissions less than 1/10 NSPS. - Completing LEBS Phase III engineering design of site-specific proof-of-concept facility, and initiating Phase IV detailed design.*

FY 1997 Results: Completed LEBS Phase III engineering design of site-specific proof-of-concept facility, and selected DB Riley as the sole contractor (out of an original three contractors) to continue into Phase IV detailed design.

ER-08 CERTIFYING THE NEXT GENERATION OF NUCLEAR POWER PLANTS

Assessment: Successful

Description: Make certified standardized Advanced Light Water Reactors (ALWR) available to ensure that nuclear power is an option to contribute to the new electrical capacity projected to be required by 2010. (NE)

❒ Success will be measured by:

- *Submitting the final revised AP-600 Standard Safety Analysis Report to the Nuclear Regulatory Commission (NRC) by September 1997, leading to receipt of the NRC Safety Evaluation Report by December 1997 and NRC design certification in 1998.*

FY 1997 Results: The Standard Safety Analysis Report was submitted to NRC in September. Receipt of the NRC Safety Evaluation Report is anticipated by May 1998 leading to NRC final design approval by September 1998.

- *Completing 90 percent of the DOE AP-600 First-of-a-Kind Engineering program activities by September 1997.*

FY 1997 Results: The program completed about 90 percent of the work, including the substantial completion of systems designs, structural design and arrangements, instrumentation and controls design, and component specifications. The final construction plan and schedule and capital cost estimate will be completed within 3-4 months.

- *Establishing a senior advisory group by March 1997 to develop recommendations to the Department on long-term nuclear research and development strategy.*

FY 1997 Results: The committee reviewed the proposed research and development elements and has submitted reports with comments and recommendations based on their review.

ER-09 IMPLEMENTING INTERNATIONAL CLIMATE CHANGE INITIATIVES

Assessment: Successful

Description: Monitor and mitigate greenhouse gas emissions and achieve U.S. goals under the U.N. Framework Convention on Climate Change. (PO)

❒ Success will be measured by:

- *Assuring that any greenhouse gas reduction commitments under consideration for adoption under the Climate Convention in FY 1997 are based on sound analysis, a realistic appraisal of United States energy needs, and up-to-date information on global energy and emissions trends.*

FY 1997 Results: DOE participated in the development of U.S. positions for the international climate change negotiations responding to the Berlin mandate of 1995. These were concluded in December 1997. DOE was part of the U.S. delegation at the international climate change negotiations. The program protocol that resulted from these negotiations contained marked based provisions championed by DOE that were based on sound analysis, realistic appraisal of U.S. energy needs, and up-to-date information on global energy and emissions trends.

- *Participating in both the interagency assessment of the U.S. Initiative on Joint Implementation (USIJI) and in completing evaluations of the third and fourth round of proposals submitted to the USIJI by developing country partners, through our role on the evaluation panel.*

FY 1997 Results: 28 USIJI projects in 12 countries have been accepted; 11 projects are fully financed, 12 projects are partially financed, finance is pending on the remaining five; 16 projects have begun some activity; the remaining 12 projects are in preliminary development; $157,586,000 has been committed to the 28 projects; total estimated project costs are $517,000,000, for all 28 projects. If all projects are fully implemented, they would mitigate 185,000,000 metric tons (mt) of CO_2.

- *Cooperating with IEA energy ministers from developing countries and countries with economies in transition (CWEIT) so that the U.S. position on Climate Change is understood.*

FY 1997 Results: The focus of discussion during the year was the concept of emissions trading. The U.S. hosted a conference in September 1997 on emissions trading which was attended by 8 Eastern European countries and Russia. Subsequent to the conference Russia has indicated its interest in entering into emissions trading agreements. At the Kyoto Conference, Russia was instrumental in advancing emissions trading.

- *Assisting developing countries in developing a CWEIT in forming their climate change positions by continuing the ongoing program, Support for National Action Plans (SNAP), in 17 countries and begin SNAP program in an additional four to six countries.*

FY 1997 Results: 18 SNAP countries are funded and work is under way; these countries include: Bangladesh, Bolivia, Bulgaria, China, Micronesia, Hungary, Indonesia, Kazakstan, Mexico, Philippines, Tanzania, Thailand, Ukraine, Uruguay, and Venezuela. The Czech Republic Country Study is complete and is at the Country Studies Office. There are 35 unfunded SNAP proposals. The absence of resources reduced the number of SNAP country grants and seriously threatens our SNAP technical assistance and training. The strength of the U.S. Countries Studies Program (CSP) (which distinguishes the U.S. program from UNEP and UNDP) has been technical assistance.

ER-10 IMPLEMENTING THE U.S. CLIMATE CHANGE ACTION PLAN

Assessment: Successful

Description: Support the President's Climate Change Action Plan to reduce carbon emissions by over 15 million metric tons and produce more than $5 billion in consumer energy benefits by the year 2000. (EE)

❒ Success will be measured by:

- *Causing a reduction of 3 million metric tons of carbon emissions in FY 1997 through actions including: - Launching a campaign in 6 major cities with national retail chains representing over $2 billion in appliance sales to designate, label, and promote high-efficiency refrigerators, air conditioners, and dishwashers. - Adding 40 new Rebuild America partnerships and completing 15 action plans. - Adding 80 new Climate Wise industrial partners. - Awarding $6 million for 16 new NICE^3 grants to industry and government cost-shared projects. - Initiating 5 Motor Challenge Excellence Partnerships with large corporations in major energy consuming manufacturing industries. - Maintaining our 600+ existing Climate Change partnership agreements supporting integration of energy efficiency and renewable energy technologies into our partner's Carbon abatement programs.*

FY 1997 Results: Launched the Energy Star appliances program in 1,100 stores nationwide with Circuit City, Montgomery Ward, and many local and regional chains. Ten major utilities with a total of 16.5 million customers have singed partnership agreements to promote the Energy Star Program. In FY 1997, the Rebuild America program added 60 new partnerships and completed 19 new action plans. Over 200 Climate Wise partners were signed in the 20-39 Standard Industry Classification (SIC) codes in FY 1997. Awarded $4.6 million for 13 new NICE^3 grants to industry and government cost-shared projects (the original target to award $6 million for 16 new grants was based on the requested budget and not the budget Congress appropriated). Three Motor Challenge Excellence Partners were signed in FY 1997: 3M, Dupont and Johnson & Johnson. Although, the number of partners goal was not reached, the potential savings from these 3 partners exceeds expectations from the 5 partners originally anticipated. All of the Climate Challenge partnership agreements that have come up for mid-term review in FY 1997, are maintaining their original commitment.

ER-11 MAXIMIZING THE VALUE OF FEDERAL OIL FIELDS

Assessment: Successful

Description: Manage, operate, maintain, and produce the Naval Petroleum and Oil Shale Reserves (NPOSR) to achieve the greatest value and benefits to the Government with consideration of the interests of the joint owners. Carry out divestment actions pursuant to Public Law 104-106, National Defense Authorization Act for FY 1996. (FE)

❒ Success will be measured by:

- *Completing for Elk Hills - Independent analysis of remaining hydrocarbon reserves. - Five independent evaluations of total value. - Determination of equity interest between owners. - Solicitation of offers from prospective buyers.*

FY 1997 Results: Five independent valuations were initiated in March 1997 and briefings were presented to bidders in June 1997. Solicitation for sale was issued in May 1997, and bids were due by October 1, 1997. (The highest bid of $3.65 billion was accepted from Occidental Petroleum in October 1997.)

- *Submitting recommendations to Congress for disposition of Naval Petroleum and Oil Shale Reserves assets other than Elk Hills.*

FY 1997 Results: Recommendations on the management and disposition of the Naval Petroleum and Oil Shale Reserves were submitted by DOE to the Congress in March 1997.

- *Operating the Reserves in FY 1997, prior to the sale of Elk Hills, so as to achieve: - Production of 43 million barrels of oil and equivalent gas. - Net revenues to the Treasury of approximately $250 million.*

FY 1997 Results: Elk Hills production for FY 1997 was 43.1 million barrels of oil and equivalent gas. Net revenues to the Treasury was $361.0 million. The increase over the success measure was due to higher than anticipated prices.

National Security

NS-01 REDUCING THE WEAPONS STOCKPILE
Assessment: Successful
Description: Safely dismantle warheads that have been removed from the U.S. nuclear weapons stockpile in order to reduce nuclear danger and enhance international accord. (DP)

❒ Success will be measured by:

- *Dismantling 556 weapons in FY 1997 without adversely impacting the environment, public safety and health.*

FY 1997 Results: As of September 30, 1997, 498 weapons had been dismantled against a revised goal of 556. The W-69 dismantlement program was successfully started on July 21, 1997, but was suspended on September 24, 1997, after completing 42 weapons due to a safety concern over the detonator removal process. The remaining shortfall is from enduring weapon programs that were scheduled for disassembly in support of stockpile management activities.

NS-02 REPLACING UNDERGROUND TESTING WITH SCIENCE
Assessment: Successful
Description: Ensure confidence in the enduring stockpile without underground nuclear testing through a science-based stewardship and management program. (DP)

❒ Success will be measured by:

- *Updating the annual Stockpile Stewardship and Management Program Plan.*

FY 1997 Results: The final version of the first annual update to the Stockpile Stewardship and Management Plan is complete and was formally released on October 30, 1997.

- *Installing a one teraflop platform by the end of FY 1997 to begin next-generation weapon simulations.*

FY 1997 Results: The first teraflop platform was installed in June 1997.

- *Meeting the National Ignition Facility construction milestones:*
  - *Site selection by December 1996.*
  - *Initiation of site preparation and long lead procurements by March 1997.*
  - *Remain on schedule to complete project in the 3rd quarter of 2003 with total project costs of $1.2 billion.*

FY 1997 Results: The Lawrence Livermore National Laboratory was selected as the site for the National Ignition Facility (NIF) in December 1996. Site preparation and long-lead procurements were both initiated in March 1997. The NIF is expected to be completed in the third quarter of 2003 with a total project costs of $1.2 billion.

- *Conducting key stewardship experiments on the Los Alamos Neutron Science Center (LANSCE) to:*
  - *Demonstrate the feasibility of high-energy proton radiography in submillisecond imaging,*
  - *Measure crystallographic texture of stockpile plutonium samples at various stages of aging.*
  - *Improve the nuclear cross section database of plutonium in support of enhanced archival analysis.*

FY 1997 Results: In August 1997, dynamic proton radiography experiments with a newly-developed multiple-snapshot capability provided an extensive set of data on the performance of stockpile high explosives. These data are providing direct validation for modeling used in the B-61-11 certification process. Experimenters used the High Intensity Power Diffractometer at LANSCE to measure texture (i.e. the distribution of crystal grain orientations) in 239Pu samples taken from a stockpile unit that had been dismantled as part of the stockpile surveillance program. Texture was shown to reveal aspects of processing history that are not available through other means of surveillance. Gamma rays from the residual 238Pu nuclei have been identified and analyzed over the range of incident neutron energies relevant to nuclear weapons test data. These data will be used to improve device performance modeling in the next-generation weapons design computer codes being developed in the DOE's Accelerated Strategic Computing Initiative.

- *Meeting Dual Axis Radiographic Hydrodynamic Test (DARHT) facility construction milestones: - Selecting technology and determining scope of second axis by June 1997. - Completing 3/4 of the hydrotest firing site by September 1997.*

FY 1997 Results: The technology selection for the second axis was made on September 22, 1997. Because the cost of the selected technology for the second axis will significantly exceed the planning estimate for the project, the Los Alamos National Laboratory (LANL) reviewed and revised the baseline change proposal (BCP) and cost estimate. Approximately 75 percent of the hydrotest firing site work was completed by September 30, 1997.

- *Conducting two subcritical experiments at the Nevada Test Site.*

FY 1997 Results: The first subcritical experiment, Rebound, was successfully conducted on July 2, 1997 and the second subcritical experiment, Holog, on September 18, 1997.

NS-03 DEVELOPING A REPLACEMENT SOURCE OF TRITIUM
Assessment: Successful
Description: Develop a replacement source of tritium for the enduring stockpile by 2005. (DP)

❒ *Success will be measured by:*

- *Issuing a draft request for proposal for supplying tritium through the purchase or lease of commercial reactors or irradiation services by March 1997.*

FY 1997 Results: The draft request for proposal was released on January 28, 1997.

- *Making Departmental decision on the accelerator super conducting design options by March 1997.*

FY 1997 Results: On March 14, 1997, after receipt and evaluation of an independent JASONs study, the Department gave the go-ahead for the design team to incorporate superconducting in its final Conceptual Design Report.

- *Approving the accelerator plant project baseline by September 1997 to be ready to start engineering design in October 1997.*

FY 1997 Results: The final Conceptual Design Report was issued in April 1997, independent verification and validation of the cost estimate was completed in June 1997, and Critical Decision #2, Approval of Baseline, was received on September 19, 1997.

- *Approving the commercial reactor's tritium extraction facility project baseline by September 1997 to be ready to start engineering design in October 1997.*

FY 1997 Results: The final Conceptual Design Report was issued in June 1997, independent verification and validation of the cost estimate was completed in July 1997, and Critical Decision #2, Approval of Baseline, occurred October 1997.

NS-04 DOWNSIZING THE NUCLEAR WEAPONS COMPLEX
Assessment: Successful
Description: Provide an appropriate sized, affordable, and environmentally sound production complex. (DP)

❒ Success will be measured by:

- *Releasing the Stockpile Stewardship and Management Final Programmatic Environmental Impact Statement (PEIS) by December 1996.*

FY 1997 Results: The Final PEIS for Stockpile Stewardship and Management was released in November 1996.

- *Completing the Record of Decision on the PEIS by December 1996.*

FY 1997 Results: The Record of Decision on the PEIS was made in December 1996.

- *Completing Conceptual Design Reports (CDRs), by the end of FY 1997, for each nuclear weapons production facility that will be downsized.*

FY 1997 Results: CDRs for the Savannah River Tritium Facility, the Kansas City Plant, the Y-12 Site and the Pantex Plant were completed during FY 1997.

NS-05 MAINTAINING THE ENDURING STOCKPILE
Assessment: Successful
Description: Ensure the safety and reliability of our nuclear weapons. (DP)

❒ *Success will be measured by:*

- *Certifying annually that the stockpile is safe and reliable.*

FY 1997 Results: The 1997 Annual Certification Technical Reports were successfully completed by the laboratories and approved by DOE, meeting all milestones. The Annual Stockpile Certification package was approved by the Nuclear Weapons Council in late October and signed by the Secretaries of Defense and Energy and forwarded to the President in November.

- *Meeting all DoD annual weapons alteration, modification, and surveillance schedules.*

FY 1997 Results: Six weapon alterations and two weapon modifications were underway in Fiscal Year 1997. We are ahead of schedule for the B61 Mod 11 conversion; and on schedule for Alt 317 (W76 neutron generator), Alt 335 (B61 Trajectory Sensing Signal Generator), Alt 336 (B61

CF3087 cable), Alt 339 (B61 Multiple Code Coded Switch Encryption Translator), and Alt 342 (W87 Life Extension Program), ALT 750 (B83 radar), and the B83 Mod 1 conversion. There are three major activities under the core surveillance program: flight tests, nuclear component laboratory tests, and nonnuclear systems laboratory tests. Based on our surveillance plans developed at the beginning of this fiscal year, as of September 30, 1997, we were on schedule for flight tests under DOE control, and slightly behind on nuclear components laboratory tests and nonnuclear systems laboratory tests due to Pantex operational issues associated with radiography and mass properties testing. DOE has developed a plan to recover from these operational impacts and, we do not anticipate a major problem with being able to provide the DoD a weapons reliability assessment.

- *Maintaining the Nevada Test Site at a 2-3 year readiness to resume testing.*

FY 1997 Results: DOE is maintaining the capabilities needed to safely conduct an underground nuclear test within two to three years after an order to do so by the President. The capabilities that are being maintained and certified include: (1) those aspects of the physical infrastructure of the Nevada Test Site (roads, utilities, communications, etc.) needed for nuclear testing; (2) the operational facilities (such as diagnostic, rack and assembly facilities) and; (3) the technical personnel at both Nevada and the National Laboratories needed to field a safe and technically useful underground nuclear test.

- *Completing initial risk assessments for each enduring stockpile weapon type, by the end of FY 1997.*

FY 1997 Results: The initial risk assessments, for each type of enduring stockpile weapon, were completed in March 26, 1997. As of September 30, 1997, the initial risk assessments were being consolidated into one risk management matrix, from which a prioritized list of issues will be developed for research and development, enhanced surveillance, and advanced manufacturing activities.

- *Completing the W87 Life Extension Program design assessment phase by June 1997.*

FY 1997 Results: Design assessment activities (testing, evaluation, peer review, and design release) for the first design of the W87 Life Extension Program were completed in February 1997. The assessment identified the need to modify the design. The revised design will undergo additional assessment/validation. The follow-on assessment activities are scheduled and it is anticipated that the follow-on design assessment will be complete by the third quarter FY 1998.

- *Developing enhanced surveillance techniques.*

FY 1997 Results: The milestones and deliverables as documented in the FY 1997 program plan for enhanced surveillance are on schedule. The program continues to produce new surveillance tools (age-focused diagnostics and age-aware models) in support of stockpile life extension and weapons refurbishments.

- *Resuming Y-12 special nuclear material operations necessary to support DoD requirements.*

FY 1997 Results: All operations necessary to support DoD requirements this fiscal year are complete. Y-12 stockpile maintenance capabilities of shipping/receiving, assembly/disassembly, and depleted uranium operations are operational and, in April 1997, DOE authorized Y-12 to resume the disassembly and evaluation of canned subassemblies. Casting operations, rolling, forming, and machining capabilities, and enriched uranium recovery capabilities are scheduled to be on line in the 2nd quarter of FY 1998.

NS-06 MANAGING SURPLUS WEAPONS-USABLE FISSILE MATERIALS

Assessment: Successful

Description: Resolve technical, institutional, cost and international issues necessary to proceed with the verifiable storage and disposition of U.S. weapons-usable fissile materials and support U.S. efforts to attain reciprocal actions for disposition of surplus Russian plutonium. (MD)

❒ Success will be measured by:

- *Announcing a path forward for the storage and disposition of United States weapons-usable fissile materials in January 1997.*

FY 1997 Results: The Record of Decision (ROD) for the Storage and Disposition of weapons-Usable Fissile Materials was issued on January 14, 1997. This ROD calls for the United States to pursue a hybrid strategy (immobilization & MOX/Reactors) to irreversibly dispose of the Nation's surplus plutonium and to reduce the number of sites where surplus nuclear materials are stored.

- *Initiating mixed oxide (MOX) fuel experiments by March 1997.*

FY 1997 Results: MOX fuel-clad experiments were initiated in March 1997; phases I and II of the MOX fuel-clad experiments were completed by September 1997. These experiments tested the interaction of gallium and gallium oxide with prototypic fuel rod cladding materials.

- *Beginning to ship surplus weapons pits from Rocky Flats to Pantex by April 1997.*

FY 1997 Results: The first shipment of surplus weapons pits from the Rocky Flats Environmental Technology Site (RFETS) was received at the Pantex Plant on March 22, 1997. The goal of phasing out the storage of all weapons-usable plutonium at RFETS is based on the cleanup agreement among DOE, EPA and the State of Colorado and the proximity of the site to the Denver metropolitan area. Shipments will continue through FY 1998.

- *Initiating at least five small-scale tests and demonstrations of surplus weapons plutonium disposition technologies jointly with Russia by May 1997.*

FY 1997 Results: Five small-scale tests and demonstrations of surplus weapons plutonium disposition technologies were initiated jointly with Russia by May 1997. These tests and demonstrations support developing technologies for burning mixed oxide fuel in reactors and immobilizing plutonium in high-level waste. A subsequent series of small-scale tests and demonstrations was initiated in September 1997.

- *Initiating by June 1997, site-specific analyses necessary to enable selection in FY 1998, of site(s) for surplus plutonium disposition.*

FY 1997 Results: Site specific analyses commenced in May 1997 following the release of a draft Notice of Intent (NOI) to prepare Environmental Impact Statement (EIS) to select the site(s) where surplus weapons plutonium disposition activities will take place. Public scoping meetings were conducted in June at the four sites (Hanford, Idaho National Engineering and Environmental Laboratory, Pantex and Savannah River) that are under consideration.

- *Making available to the United States Enrichment Corporation (USEC) for down blending and subsequent sale, the first installment of the 50 metric tons of surplus highly enriched uranium by September 1997.*

FY 1997 Results: That portion of the Memorandum of Agreement (MOA) dealing with the transfer of the highly enriched uranium (HEU) to USEC has been satisfactorily negotiated. However, execution of the MOA is being delayed to enable further negotiations regarding non-HEU aspects of the agreement. Despite the schedule delay, all key objectives associated with the transfer of 50 metric tons of surplus HEU to USEC over a five year period beginning in FY 1998 are expected to be met.

- *Select the immobilization formulation (glass or ceramic) for the "can-in-canister" approach by September 1997.*

FY 1997 Results: In September 1997, the Department directed that future efforts be focused on the use of the ceramic form in the preferred can-in-canister approach for immobilizing surplus weapons plutonium. This decision followed a comprehensive technical review of both ceramic and glass formulations, as well as a recommendation from Lawrence Livermore National Laboratory, which served as the lead laboratory for the immobilization effort.

- *Completing a Nonproliferation and Arms Control assessment of plutonium disposition options by January 1997.* (NN)

FY 1997 Results: The Nonproliferation and Arms Control Assessment of Weapons-Usable Fissile Material Storage and Excess Plutonium Disposition Alternatives report was completed in January 1997. This assessment, together with environmental, technical, schedule, and cost analyses formed the basis for the January 14, 1997, Record of Decision on the disposition of U.S. surplus weapons plutonium.

NS-07 ASSISTING RUSSIA, THE NEWLY INDEPENDENT STATES (NIS) AND BALTICS IN IMPROVING THE SECURITY OF NUCLEAR MATERIALS

Assessment: Successful

Description: Work with Russia, the NIS and the Baltics to protect weapons-usable material from theft or diversion by improving the material protection, control and accounting (MPC&A) systems at facilities, as well as cooperating on improving national systems of MPC&A. (NN)

❒ Success will be measured by:

- *Making progress of MPC&A upgrades at each of the 44 facilities in Russia, the NIS, and the Baltics which use or store weapons-usable nuclear material.*

FY 1997 Results: Site security upgrades are now underway at 31 sites in Russia and 13 additional sites in the NIS and Baltics which use or store weapons-usable HEU and/or plutonium. Seven (7) additional projects dealing with national level security enhancements such as federal nuclear material accounting system and security inspection program, along with national training centers and educational programs are on schedule. This milestone which is aimed at rapidly securing weapons-usable materials where it is located is on schedule to be achieved by the end of 2002.

- *Completing MPC&A upgrades at more than four locations in Russia and all but three locations in the NIS.*

FY 1997 Results: Commissioning ceremonies took place at Kiev Institute of Nuclear Research (Ukraine), Institute of Atomic Energy - Kurchatov (Kazakhstan) & Ulba (Kazakhstan). 5 Russian sites during the end of CY 1997; and 1 Ukrainian site and 1 Kazakh site will be completed by May 1998.

- *Expanding cooperation with the Russian Federal Nuclear Radiation and Safety Authority (GAN), including start-up of a pilot federal MC&A information system.*

FY 1997 Results: Significant joint progress has been made with GAN on regulatory and training projects. The start-up of a pilot Federal MPC&A information system began in September 1997.

- *Adding facilities not currently participating in the MPC&A program where we suspect weapons-usable nuclear materials may be in use or stored.*

FY 1997 Results: Secretary Peña and Minister Mikhailov signed a Joint Statement in July 1997 to add an additional facility at Lytkarino. The Krylov Ship Building Research Institute in St. Petersburg, Russia was added to the Cooperative Program in April 1997.

- *Completing the initial phase of vulnerability assessment and preliminary designs of the MPC&A upgrades for the Northern Fleet storage site near Serveromorsk by May 1997.*

FY 1997 Results: This work was completed in June 1997.

- *Completing major physical protection upgrades for first fresh fuels storage site in the Northern Fleet by September 1997.*

FY 1997 Results: This work at Russia Navy Site 49 was completed in October 1997.

- *Accelerating MPC&A enhancements for transportation of nuclear material between Minatom facilities in Russia.*

FY 1997 Results: Joint cooperation continued with ELERON (Special Scientific and Production State Establishment, the Russian transportation regulatory body) to continue rapid upgrades on rail cars, the primary mode of transportation for nuclear material.

NS-08 LIMITING WEAPONS-USABLE FISSILE MATERIALS WORLDWIDE

Assessment: Successful

Description: Promote alternatives to the civilian use of plutonium (Pu). Minimize the civilian use of HEU. Reduce stockpiles of HEU and Pu, and work to encourage similar reductions worldwide. Initiate regional fissile material control activities. Assist in the conversion of Russian Pu production reactors to not manufacture weapons-grade Pu. Begin negotiation of an international convention to end the production of fissile material for weapons purposes. (NN)

Comments: The Department has made significant progress to limit weapons-usable fissile materials this year. Most notably, we are nearing completion of the extraordinary effort to the freeze the North Korean nuclear program through the canning of the 8,000 fuel rods.

❒ Success will be measured by:

- *Accepting five shipments of U.S. enriched materials.*

FY 1997 Results: Three shipments have been received in FY 1997: one in December 1996, one in April 1997, and one in August 1997. The remaining shipments were delayed into early FY 1998 due to the unavailability of transportation casks.

- *Fabricating miniature test plates of low enriched uranium (LEU) fuel for research reactors by September 1997.*

FY 1997 Results: Fuel plate fabrication is complete.

- *Concluding the contract for the second year of work on cooperative Reduced Enrichment Research Test Reactors (RERTR) efforts with Russian labs by September 1997.*

FY 1997 Results: Useful meetings were held in April to assess the first year of work and discuss the scope of the second year contract. The Russian labs agreed to host the U.S. delegation in Moscow for later meetings to conclude the contract. However, the Russian invitation for the July meeting was granted without adequate lead time and the U.S. team was unable to obtain Russian visas in time, forcing the meetings to be postponed. The Russian delegation was unable to meet during August. This task is on track for completion in early 1998.

- *Conducting irradiation tests of LEU targets for molybdenum-99 production in Indonesia by June 1997.*

FY 1997 Results: Irradiation tests are complete.

- *Completing the canning of the 8,000 spent fuel rods (3,500 as of October 1996) in the Democratic People's Republic of Korea (DPRK) and preparing canned fuel for the application of safeguards by the International Atomic Energy Agency(IAEA).*

FY 1997 Results: 7,750 spent fuel rods (97 percent) canned as of October 30, 1997 (3,550 since October 1, 1996). Under the U.S.- North Korea Agreed Framework, all spent fuel from the 5MW research reactor at Nyongbyon is to be placed in long term storage under IAEA safeguards until transferred out of North Korea. DOE has successfully secured all spent fuel rods under IAEA safeguard seal, and is now cleaning spent fuel debris from the bottom of the basin while preparing for long term storage of the fuel. Completion of this project will enhance the security of the spent fuel, support IAEA safeguards activities, preserve the fuel from corrosion, and simplify its eventual transport from North Korea.

- *Signing contracts and implementing agreements with relevant Russian agencies by September 1997 for the second phase of project to convert the cores of Russian plutonium production reactors to a non-weapons plutonium production mode. (The second phase involves Russian performance of core design and safety analysis tasks that will lead to Russian regulatory approval).* (NE)

FY 1997 Results: All contracts have been signed, including the prime Pacific Northwest National Laboratory-Kurchatov contract and associated subcontracts. The implementing agreement was negotiated (with the final discussion completed in early-August) and was signed at the September meeting of the Gore-Chernomyrdin Commission.

NS-09 ESTABLISHING TRANSPARENT AND IRREVERSIBLE NUCLEAR REDUCTIONS WORLDWIDE

Assessment: Successful

Description: Conduct discussions with the Russian Federation on monitoring inventories of excess fissile material removed from dismantled nuclear weapons. Revise and expand the existing HEU transparency annexes associated with the U.S. purchase of the 500 metric tons of HEU from dismantled former Soviet nuclear warheads. Implement and conduct inspections at Russian facilities subject to the expanded HEU transparency measures. Assess the impact of a future warhead dismantlement verification regime on the U.S. nuclear weapons complex as part of a potential START III arms control treaty. (NN)

❒ Success will be measured by:

- *Conducting technology demonstrations at the Oak Ridge National Laboratory to support the U.S. - Russian HEU Purchase Agreement transparency negotiations by October 1996.*

FY 1997 Results: A highly successful technology demonstration was conducted at the Oak Ridge National Laboratory in October 1996 to familiarize Russian technical experts with U.S. enrichment and flow measurement technology that would be installed at Russian facilities associated with the U.S.-Russian Highly Enriched Uranium Purchase Agreement.

- *Conducting a Russian familiarization visit to the Oak Ridge Y-12 Plant, including demonstration of unclassified radiation measurements on actual HEU warhead components, in sealed storage containers removed from dismantled U.S. nuclear warheads by November 1996, and conducting a reciprocal U.S. visit to a Russian facility to take unclassified measurements on Russian warhead components by December 1996.*

FY 1997 Results: A highly successful Russian familiarization visit took place at the Oak Ridge Y-12 Plant in November 1996, and a reciprocal U.S. familiarization visit to Seversk (Tomsk-7) took place in December 1996. During these visits, both U.S. and Russian technical experts successfully demonstrated, for the first time, unclassified radiation measurements on actual U.S. and Russian HEU weapons components, in sealed storage containers, removed from dismantled nuclear weapons.

- *Conducting joint U.S. and Russian measurements on unclassified plutonium sources in sealed storage containers to evaluate the merits of proposed techniques to monitor U.S. and Russian plutonium inventories removed from dismantled nuclear warheads by November 1996.*

FY 1997 Results: A highly successful Russian visit took place at the Lawrence Livermore National Laboratory in November 1996. During this visit, U.S. and Russian technical experts successfully performed joint radiation measurements on unclassified plutonium sources in sealed containers that allowed the merits of various radiation measurement techniques to monitor U.S. and Russian inventories of plutonium removed from dismantled nuclear weapons to be evaluated.

- *Negotiating and signing by December 1996, the revised HEU Purchase Agreement transparency annexes that incorporate significantly expanded transparency measures at Russian facilities.*

FY 1997 Results: At the Fifth Session of the Transparency Review Committee (TRC) in Moscow in December 1996, DOE successfully negotiated and signed seven revised technical implementing annexes associated with the U.S.-Russian Highly Enriched Uranium Purchase Agreement. These signed annexes resulted in successful

inspections being conducted at Russian facilities processing highly enriched uranium subject to the HEU Purchase Agreement.

- *Publishing by July 1997 a technical study evaluating various transparency and verification options that could be implemented at DOE facilities as part of a START III treaty.*

FY 1997 Results: The groundbreaking DOE technical report entitled "Transparency and Verification Options: An Initial Analysis of Approaches for Monitoring Warhead Dismantlement" was issued on May 19, 1997. In response to overwhelming demand from the U.S. interagency policy community, DOE printed and distributed over 200 copies of the technical report. In addition, the Arms Control Disarmament Agency Director personally congratulated Secretary Peña for the far-sighted DOE technical report.

- *Implementing the revised HEU transparency annexes, including maintaining a permanent monitoring office at Novouralsk, Russia and conducting inspections at the Siberian Chemical Enterprise at Seversk, the Ural Electrochemical Integrated Enterprise in Novouralsk and the Electrochemical Plant in Krasnoyarsk.* (NE)

FY 1997 Results: Permanent presence monitors performed daily monitoring activities at the Ural Electrochemical Integrated Plant (UEIP) in Novouralsk, Russia, as planned. In addition, UEIP facility staff received recognition from President Yeltsin in August, for cooperation in the HEU Transparency and blending effort. Planned monitoring visits to Seversk (five trips) and Krasnoyarsk (four trips) were completed as scheduled and all goals were met or exceeded. Observation of material received at UEIP and Krasnoyarsk that was tagged and sealed by earlier U.S. monitors at Seversk provided valuable links in establishing a level of confidence that transparency goals are being achieved. U.S. monitors also conducted familiarization visits to two new facilities proposed for inclusion in new transparency annexes that will be negotiated at the next TRC meeting in November 1997.

- *Obtaining the low-enriched equivalent of 18 metric tons of HEU.* (NE)

FY 1997 Results: In CY 1997, the United States Enrichment Corporation (USEC) was responsible for purchasing the low enriched uranium (LEU) derived from 18 metric tons of Russian HEU and the Department was responsible for obtaining from USEC the natural uranium component of the low enriched uranium. Based on the calendar year delivery schedule, the Russians should have delivered 360 metric tons of LEU derived from 13.4 metric tons of HEU as of September 30, 1997. However, only 198 metric tons of LEU derived from 7.5 metric tons of HEU were delivered. The Russians are several months behind in deliveries. However, shipments from the various Russian production plants have recently restarted and deliveries are in transit to USEC. Due to limitations in the number of product cylinders and overpacks, it is projected that some deliveries scheduled for 1997 will be delayed until January 1998. However, the Department has completed its fiscal year responsibilities associated with the transfer and sale of the natural uranium component from previous years' LEU shipments by signing agreements with USEC and Russia's representative and depositing $40.1 million in the U.S. Treasury.

- *Preparing U.S. facilities to receive Russian HEU transparency monitors.* (NE)

FY 1997 Results: In April 1997, the Russian representatives of the Ministry for Atomic Energy (Minatom) visited the two U.S. fuel fabricators that ultimately receive the LEU material subject to the transparency measures. The HEU Transparency Program provided logistical and technical support to this visit. In May 1997, the representatives were joined by three permanent presence monitors in Portsmouth, Ohio, to open the Russian permanent presence office at the gaseous diffusion facility. The permanent presence office is a stand alone trailer with two large office areas, restroom, computer and telephone provided by the U.S. Transparency program. The Russian monitors remained for nearly three weeks, performing all monitoring activities cited in the transparency annex. Unlike the full time U.S. permanent presence, the Russian monitors have elected not to be present at Portsmouth on a full time basis, which is their option and allowable in the Annex.

NS-10 STRENGTHENING THE NUCLEAR NONPROLIFERATION REGIME

Assessment: Successful

Description: Promote adherence to the Nuclear Non-Proliferation Treaty (NPT). Increase the effectiveness and efficiency of the International Atomic Energy Agency (IAEA). Conclude successful negotiation of a Comprehensive Nuclear Test Ban Treaty (CTBT). Facilitate IAEA inspections of excess fissile materials. Promote regional nonproliferation measures. (NN)

❒ Success will be measured by:

- *Establishing guidelines and U.S. requirements for global monitoring and on-site inspection capabilities at the CTBT international organization in Vienna as Chair or Co-Chair of U.S. Task Forces on-site inspection and data authentication.*

FY 1997 Results: The DOE provided two of our Laboratory based experts as U.S. points of contact to the

Vienna based CTBT Preparatory Commission in the areas of on-site inspection and the International Data Center. In addition, one of our Laboratory based individuals was selected for a permanent position in the On-Site Inspection Directorate of the Provisional Technical Secretariat, the international organization at the Vienna International Center that is responsible for preparing for eventual entry into force of the Treaty and establishment of the permanent CTBT Organization.

- *Providing equipment, technologies and expertise to the IAEA and UNSCOM to perform monitoring and intrusive inspections in North Korea and Iraq sufficient to verify compliance with their NPT obligations.*

FY 1997 Results: The DOE, in support of the IAEA, conducted a classified technical research study at the IAEA's request during the second half of FY 1997. This study combined the efforts of numerous scientists at four of the DOE National Laboratories. The results of this study were well received by the IAEA. The nature and application of this study is classified and cannot be disclosed in this document. IRAQ: The DOE, in support of the IAEA Action Team and the UNSCOM, provided eleven technical experts during FY 1997, to assist the Action Team in conducting intrusive inspections in Iraq. 33 DOE man-weeks were expended in support of these inspections. During the course of these inspections, water sampling equipment, ground penetrating radar, and electromagnetic sensors were deployed. DOE continued to provide a full-time nuclear expert to UNSCOM to serve as a nuclear advisor to the Executive Chairman of UNSCOM and as nuclear liaison between UNSCOM and the Action Team. Additionally, DOE provided one dedicated person at DOE Headquarters to initiate and coordinate all DOE support to both agencies. This person also represented DOE's interests at the Special Commission Support Office at the US State Department twice weekly to insure proper response to IAEA and UNSCOM requests for technical support.

- *Implementing eleven agreements for safeguards cooperation between DOE and foreign governments organizations (Argentina, Australia, Brazil, Chile, EURATOM, France, Japan(2), South Korea, IAEA, and Brazilian-Argentine Agency for Nuclear Material Control and Accounting).*

FY 1997 Results: Active agreements with each of the listed foreign governments or organizations are in force. Currently there are 37 technical tasks being conducted under these agreements. Nine tasks were completed and closed in the past six months. In Japan, several nuclear safeguards techniques developed under the joint cooperation agreements have recently become accepted routine procedures for IAEA safeguards. An agreement was signed in May 1997 to extend the joint cooperation between DOE and the Japan Atomic Energy Research Institute for ten years.

- *Placing 13 metric tons of U.S. highly enriched uranium hexafluoride, 7 metric tons of uranium oxide, and 6 metric tons of uranium metal (all part of the 200 metric tons of U.S. weapons-grade material declared excess by the President) under IAEA safeguards, with placement to be completed by the end of FY 1999.*

FY 1997 Results: The U.S. and the IAEA have agreed to carry out a joint verification experiment at the Portsmouth Gaseous Diffusion Plant, where the downblending of 13 metric tons of U.S. excess highly enriched uranium began in 1995. The Portsmouth facility was made eligible for IAEA safeguards in April 1996. During a September 22-25, 1997, technical exchange at Portsmouth, the U.S. and the IAEA reached agreement as to the necessary measures for verifying the downblending of U.S. HEU while minimizing impacts on facility operations. The verification activity is aimed at enabling the IAEA to make a credible statement concerning verification of the downblending operations and to gain experience in implementing a new verification plan.

- *Blending a total of 7 of the above 13 metric tons of U.S. highly enriched uranium hexafluoride down to commercial enrichment levels by September 1997.* (NE)

FY 1997 Results: As of September 30, 1997, approximately 8 metric tons have been blended to low enriched uranium.

- *Negotiating a new Agreement for Cooperation with Switzerland pursuant to Section 131 of the Atomic Energy Act that will enable the U.S. and Switzerland to engage in peaceful nuclear cooperation.*

FY 1997 Results: The Agreement negotiations were concluded earlier this year and the Agreement was signed.

- *Concluding an Administrative Arrangement pursuant to the US-EURATOM Agreement for Cooperation to identify implementing procedures for the Agreement by January 1997.*

FY 1997 Results: The Administrative Arrangement was completed in January.

- *Completing annual physical inventory verifications of U.S. fissile material under IAEA safeguards at Rocky Flats in October 1996 and at Hanford and Oak Ridge*

in September 1997 to ensure that there has been no diversion of materials under IAEA safeguards.

FY 1997 Results: The IAEA completed its annual physical inventory of U.S. fissile material under safeguards at Rocky Flats in October 1996 and at Hanford and Oak Ridge in September 1997. To support IAEA inspection activities, NN has sponsored technical work to authenticate Hanford and Rocky Flats domestic safeguards systems for IAEA use; the completion of these tasks will enable the IAEA to use selected facility-owned systems to facilitate inspections and reduce impacts on the facility.

- *Providing advanced safeguards equipment and expertise under IAEA "93+2" program to the IAEA. In conjunction with the IAEA and the member states, installing remote monitoring equipment in Argentina and Finland by October 1997 by the U.S. (DOE).*

FY 1997 Results: DOE, Argentina, and IAEA have developed joint specifications for the remote monitoring equipment and testing to be conducted in Argentina. Finland and DOE have completed design for integrating a Finnish built remote monitoring environmental sampling system with the DOE developed system to integrate all measurements.

NS-11 CONTROLLING NUCLEAR EXPORTS

Assessment: Successful

Description: Assist the international community in effectively controlling exports and establishing responsible supplier policies. Implement U.S. statutory licensing requirements for nuclear or nuclear-related export controls. Encourage adherence to the Nuclear Suppliers Guidelines. Strengthen multilateral supplier initiatives. Foster transparency through automated information sharing and analysis. Advance nonproliferation objectives through technology security initiatives. Enhance export controls in the Former Soviet Union states. (NN)

❒ Success will be measured by:

- *Adopting and fully implementing the Nuclear Suppliers Group Information Sharing System by April 1997 Nuclear Suppliers Group Plenary Meetings in Ottawa, Canada.*

FY 1997 Results: The DOE developed system was officially adopted and is currently undergoing consideration by the Group for its first major upgrade.

- *Promoting the adherence of NPT-Parties to the Nuclear Suppliers Group Guidelines, including Latvia.*

FY 1997 Results: Latvia became a member of the group in October 1997. Focus of the Group will be on other NPT Parties such as Kazakhstan. Some members are expecting that China may soon adhere to the Group's principles, but this is still some time away in a conservative estimation.

- *Obtaining agreement by the NPT Exporters Committee by May 1997, to initiate a technical review of conversion technologies for uranium hexafluoride, seeking formal adoption of a revised list of clarified controls by May 1998.*

FY 1997 Results: DOE has been required by the Chairman of the Group to continue its technical review. DOE has held bilateral technical consultations with representatives from eight technology holders and will hold a formal technology holders meeting in the new year with an aim to bringing a formal proposal to the Group in May 1998.

- *Training approximately 450 customs inspectors in strategic material identification and illicit trafficking prevention, in order to improve export control systems in the Newly Independent States (NIS), Eastern Europe, and with the U.N. Special Mission for Iraq.*

FY 1997 Results: DOE has participated in several joint trips with the U.S. Customs Service under Project Amber where several hundred customs inspectors and export control officials have received technical training on nuclear nonproliferation issues. DOE continues to provide technical assistance to these joint trips as requested and will participate, as requested, in other similar initiatives under DOD/Customs auspices.

- *Through the six established laboratory to laboratory initiatives, conducting 2 industry outreach seminars in Russia and Ukraine to strengthen controls of nuclear and nuclear-related dual use commodities.*

FY 1997 Results: DOE has increased the number of export control lab-to-lab programs from six to nine. DOE has also conducted with MINATOM, industry outreach seminars in Russia. More seminars are planned for this year.

- *Conducting 2 workshops in Kazakstan and Ukraine focusing on multilateral export control.*

FY 1997 Results: DOE held a very successful workshop with Ukrainian officials on multilateral export controls. A workshop with Kazakhstan officials was held during November 1997 in Washington.

NS-12 ENHANCING THE SAFETY OF SOVIET-DESIGNED REACTORS

Assessment: Successful

Description: Improve the safety of Soviet-designed nuclear power plants in Russia, Ukraine, and Central and Eastern Europe to correct safety problems endemic to Soviet-designed reactors. (NE)

❒ Success will be measured by:

- *Transferring technology for development of emergency operating instructions to Russia, the Ukraine, and Central and Eastern Europe by May 1997, which will ensure that instructions are appropriate for the specific plant and likely to be used effectively by operators.*

FY 1997 Results: Technology for development of emergency operating instructions was transferred to Russia, Ukraine and Central and Eastern Europe by December 1996 ahead of schedule. Continued support has been provided, as requested, to facilitate their use of this technology.

- *Delivering Safety Panel Display Systems to the Kursk nuclear power plant in Russia by February 1997, which will allow operators to collect and view plant status data rapidly.*

FY 1997 Results: The February goal was achieved in July. Although manufacturing of the Kursk Safety Parameter Display System (SPDS) and shipping preparations were completed in February, as planned, the Kursk plant delayed their spring outage until June 1997. Since the SPDS could not be installed until the spring outage, actual delivery was postponed; the unit was delivered and installed as soon as the plant conditions could support. The unit passed final site acceptance test in July 1997 and is operational.

- *Completing shipment of full-scope simulators to the Khmelnytskyy nuclear plant in Ukraine by September 1997, which will provide hands-on training for operators and increase their ability to recognize and deal with potentially unsafe situations.*

FY 1997 Results: This milestone was met several months ahead of schedule. The simulator is on-site, and has been assembled. It has undergone final acceptance testing and was turned over in December 1997.

- *Completing installation of the plant analyzer for the Kozloduy nuclear power plant in Bulgaria by March 1997, which will give operators the capability to simulate and develop preventive measures and responses to a full range of potential accidents.*

FY 1997 Results: The plant analyzer is up and running at the Kozloduy nuclear power plant.

- *Completing preparation of six additional operator and maintenance training courses by August 1997, which will increase the skills of plant technicians in dealing with operational and maintenance tasks.*

FY 1997 Results: A total of 14 additional courses have been implemented during FY 1997 (through September) as follows: Balakovo: Water Chemistry (11/96); Instrumentation and Controls Operations (1/97); Radiation Protection Technician (2/97); Safety Inspector (4/97); Khmelnytskyy: Control Room Reactor Operator Phase 2 (12/96); Refueling Operator (11/96); Chemical Operator (2/97); Control Room Reactor Operator Phase 3 (6/97); Smolensk: Mechanical Maintenance (9/97); Shift Supervisor (9/97); Kozloduy: Shift Supervisor (10/96); Reactor Repair Technician (10/96); Mechanical Maintenance (9/97); Chornobyl: Radiation Protection Technician (7/97).

- *Completing delivery of fire safety upgrades for the Smolensk nuclear plant in Russia and the Zaporizhzhya nuclear power plant in Ukraine by September 1997, which will lessen the probability of fires occurring at the plants.*

FY 1997 Results: Deliveries for the fire safety upgrades for the Ukrainian Nuclear Power Plants at Zaporizhzhya met the success measure. All U.S. provided equipment was delivered to the Zaporizhzhya plant several months in advance of the September 1997 target date. Over 80 percent of the equipment has been delivered for the Russian Nuclear Power Plant at Smolensk, including penetration sealant materials, fire doors (400 have been fabricated and delivered to the plant), spray nozzles, fire detectors, and personnel fire protection equipment. Material testing has been completed with successful certification of the floor coating material. Some items in the remaining 20 percent are not yet complete because Russian Certification Requirements and Standards evolved during the past year and a half, requiring extensive additional work. As a result, a new schedule for delivery of the fire detection and alarm system, the radio-communication systems and the floor coating material was established and the remainder of the work will be completed in FY 1998. The Department's performance is on track based on the revised plan.

- *Completing 50 percent of maintenance technology transfers by September 1997, which will increase the ability of plant operators to maintain their plants in good condition.*

FY 1997 Results: Fifty percent of the maintenance technologies have been transferred.

NS-13 ASSISTING IN THE SHUTDOWN OF THE CHORNOBYL NUCLEAR POWER PLANT

Assessment: Successful

Description: Assist in the multi-national effort to shutdown the Chornobyl nuclear power plant in Ukraine by the year 2000 in order to reduce environmental and safety threats. (NE)

❒ Success will be measured by:

- *Installing a Safety Parameter Display System for Unit 3 of the Chornobyl plant by September 1997, which will allow operators to collect plant status data rapidly and respond quickly to potential problem situations.*

FY 1997 Results: The Chornobyl Nuclear Power Plant Safety Parameter Display System Unit 3 installation has been delayed because of customs problems and lack of delivery of the installation package by the Russian design organization. As a result, a new schedule for installation during first outage in the spring of 1998 was established. The Department's performance is on track based on the revised plan.

- *Presenting recommendations to the G-7 Nuclear Safety Working Group by December 1996 on short- and long-term measures to stabilize the deteriorating sarcophagus around Chornobyl Unit 4.*

FY 1997 Results: The recommendations contained in the internationally prepared report "Chornobyl Unit 4: Short and Long Term Measures" were presented to the G-7 Nuclear Safety Working Group in October 1996. Consensus was reached on these short term measures by the G-7 participants. The report was issued in its final form in November 1996. In December 1996, the G-7 Nuclear Safety Working Group concurred on a plan to prepare a follow-on study referred to as the Shelter Implementation Plan to resolve some of the G-7 and Ukrainian concerns relative to the long term measures including the approach to fuel and fuel containing material issues. The Shelter Implementation Plan was issued in May 1997 and concurred with by the G-7 and government of Ukraine in May 1997.

- *Providing industrial safety and radiation protection equipment, including airborne radiation monitors and personal dosimeters, by August 1997 for personnel who work in and around the deteriorating Chornobyl sarcophagus.*

FY 1997 Results: All Dose Reduction and Industrial Safety Equipment scheduled to be provided to Shelter workers as of August 1997 has been purchased and has either been delivered to the Shelter, or is in Ukrainian customs processing. Actual deliveries to the Shelter have been slowed by changes in the Ukrainian government which invalidated the previously established customs agreements for this equipment. New agreements were established and shipments of the backlogged items are proceeding on an expedited basis. All basic industrial safety equipment such as gloves, first aid kits, respirators with communications capabilities, hard hats, earplugs and basic rescue devices are at the Shelter. Sufficient dosimeters and survey instruments have been delivered to the Shelter in person to support critical operations as the customs issues are worked.

- *Establishing a nuclear energy database at the International Chornobyl Center in Slavutych by June 1997, which will help in analyzing reactor safety, and in fuel and core management.*

FY 1997 Results: A nuclear energy database was established at the Chornobyl Center on July 15, 1997.

NS-14 MANAGING CONTRACTOR WORK FORCE RESTRUCTURING

Assessment: Successful

Description: Mitigate the impacts on workers and communities from contractor work force restructuring and assist community planning and asset disposition while humanely and cost-effectively managing the transition to a reduced work force that will better meet ongoing mission requirements. (WT)

❒ Success will be measured by:

- *Holding to 2 percent or less the number of jobs vacated through incentivized separations that have to be filled by employees outside the DOE complex.*

FY 1997 Results: The sites experiencing work force restructuring track the number of vacated positions that have to be back-filled. Sites also track the number of displaced workers who are rehired. In FY 1997, there were no positions reported as back-filled. However, there were a small number of displaced workers rehired for other positions.

- *Keeping involuntary separations to a range of 25-50 percent of all separations while assuring maintenance of essential work force skills mix and productivity.*

FY 1997 Results: 45 percent of prime contractor separations for FY 1997 were involuntary separations based on detailed reports from DOE field offices.

- *Ensuring reemployment of at least 60 percent of separated workers seeking new jobs.*

FY 1997 Results: The Office annually conducts surveys of previously separated workers. In order to assess results for

the period of six months following separation, the most recent survey involved workers separated during FY 1996. That survey indicated that 66 percent of respondents seeking full-time employment are currently employed full-time. The Office is developing additional tracking mechanisms to further confirm these results.

- *Achieving annual recurring cost savings from separated workers that is at least three times the one time cost of separation.*

FY 1997 Results: Work force restructuring costs during FY 1997 totaled $118,564,038 based on detailed accounting reports from DOE field offices. The average annual compensation cost of employing a full-time prime contractor employee is estimated at $67,500. This figure multiplied by the 7,029 total positions reduced by the Department's prime contractors during FY 1997, results in an estimated annual savings of $470,000,000, or approximately 4 times the one-time cost of these separations.

- *Establishing guidance for the fair treatment of contractor employees affected by organizational changes by April 1997.*

FY 1997 Results: Informal changes in guidance have been incorporated based on the recommendations of a process improvement team and Congressional direction provided in the FY 1998 Energy & Water Appropriations Act. Formal guidance revision is expected by Spring 1998.

Environmental Quality

EQ-01 ACCELERATING RISK REDUCTION AND LIFECYCLE COST REDUCTION OF NUCLEAR WEAPONS SITES CLEANUP

Assessment: Successful

Description: Initiate the implementation of the Environmental Management (EM) Ten-Year Vision to complete the cleanup of most of the Department's contaminated sites over the next 10 years and to put in place a responsible waste management, nuclear materials, and surplus facilities stewardship program for the long-term future. (EM)

❒ Success will be measured by:

- *Releasing the discussion draft of the Environmental Management Program plan for cleanup for public review and comment by June 1997.*

FY 1997 Results: In June 1997, National and Site discussion drafts "Accelerating Cleanup: Focus on 2006" were sent to all House and Senate members, members of the press, field offices, Site Specific Advisory Board chairs, and stakeholders. Assistant Secretary Alm briefed House and Senate members and hosted a press conference to announce the release of the Discussion Draft. Comments received on the National Discussion Draft were used to formulate the recently issued guidance to be used by the sites in developing their Site Draft 2006 Plans.

- *Implementing the EM Integrated Planning, Accountability, and Budgeting System by September 1997.*

FY 1997 Results: The Integrated Planning, Accountability, and Budgeting System (IPABS) restructures and streamlines formerly independent pieces of EM program's current management structure into one cohesive system. Major portions of IPABS have already been implemented. This includes the projectization of all EM work and the establishment of performance-based metrics and management commitments. Project Baseline Summaries (PBSs), key components of IPABS, were used to formulate EM's FY 1999 budget which was submitted to the Office of Management and Budget in September 1997. Updated PBSs (based on the recently released 2006 Plan Guidance) will be submitted in the November/December time frame. These PBSs will enable EM to report FY 1997 actuals; establish FY 1998 management commitments; finalize FY 1999 formulation activities; initiate FY 2000 formulation activities; and prepare the Draft 2006 Plan.

- *Completing the cleanup of the Pinellas Plant, closing it, and turning it over to the Pinellas County by September. 1997. This is the first surplus weapons production site to be closed by the Department.*

FY 1997 Results: The cleanup of the Plant is completed. On September 12, 1997, Deputy Secretary Moler attended a celebration of the closure of the Plant held near the Largo Site, Florida. At that time, she provided a symbolic key to the Plant to the new owner, the Pinellas Science Technology and Research (STAR) Center, and honored the efforts of Federal and contractor employees during the 40 years of Plant operations. Pinellas is the first major DOE defense site to be closed, and will serve as the model for future closures. The Plant was closed 2-3 years earlier than initially projected.

- *Accelerating the complete deactivation of the PUREX plant at the Hanford Site from the original schedule of FY 1998 to FY 1997 with an estimated cost reduction of $43.4 million.*

FY 1997 Results: Deactivation of the Plutonium Uranium Extraction (PUREX) Plant was completed in May 1997, marking a historic achievement for both the Hanford site and the Department. A PUREX Deactivation Recognition Ceremony was held June 20, 1997, at the PUREX facility to acknowledge employee contributions and innovative approaches applied to the project. Honored guests at the ceremony included Assistant Secretary Al Alm, several state legislators, representatives from the U.S. Environmental Protection Agency, and various stakeholders. Transition of the Plant, which produced two-thirds of the U.S. plutonium inventory from 1956 to 1989, was completed months ahead of schedule, taking PUREX out of the weapons loop and reducing surveillance and maintenance costs. Estimated mortgage reduction is $43.4 million. ($202.1M original baseline estimate - $158.7M mortgage reduction alternative estimate = $43.4M mortgage reduction as reported by the Assistant Manager for Facility Transition to Budget on February 7, 1997.) During the deactivation process, new tools that improved, and will continue to improve nuclear deactivation activities across the DOE complex were developed.

- *Continuing the development of the privatization strategy to provide alternative methods for accelerating cleanup and reduce cost through competition, private sector financing and the application of proven private sector technology and experience by: - Issuing request for proposals for contact handled transuranic waste transportation at Carlsbad, New Mexico, by September 1997. - Issuing*

request for proposals for the Broad Spectrum Low Activity Mixed Waste Treatment at Oak Ridge Reservation by September 1997, and - Issuing request for proposals for the Waste Pit Remedial Action at Fernald, Ohio, by January 1997.

FY 1997 Results: On May 22, 1997, the Albuquerque Operations Office issued a draft Request for Proposal (RFP) for the Contact-Handled Transuranic Waste Transportation Services. The purpose of the draft RFP is to allow vendors and interested parties to submit suggestions and comments regarding the solicitation. The final RFP is expected to be issued by October 31, 1997 with a contract awarded in March 1998. -- The Broad Spectrum Low Level Mixed Waste Treatment at Oak Ridge has been withdrawn as a privatization candidate because it is unlikely to meet the EM criteria for privatization projects. The RFP for the Waste Pit Remedial Action at Fernald was issued January 31, 1997. Bids were received and the contract was awarded on October 20, 1997, to IT Corporation.

EQ-02 MAKING PROGRESS ON THE TREATMENT, STORAGE, AND DISPOSAL OF RADIOACTIVE WASTES

Assessment: Successful

Description: Safely store radioactive and hazardous wastes and reduce environmental risk by treating and disposing of transuranic, mixed low level, and low level wastes. (EM)

❒ Success will be measured by:

- *Issuing the Final Waste Management Programmatic Environmental Impact Statement by June 1997.*

FY 1997 Results: The Final Waste Management Programmatic Environmental Impact Statement (WMPEIS) was published in May 1997. It evaluates the potential cost and environmental effects of alternatives nationwide for consolidating management of approximately two million cubic meters of waste. The final WMPEIS took six years to complete, and included extensive opportunities for public review and comment. It considers dozens of alternative configurations in terms of their costs, potential health and safety impacts on waste management, transportation and workers, and environmental and socioeconomic effects on some 50 million Americans who reside near DOE sites. This comprehensive study provides the foundation for a strategy that will ensure safe and efficient management of legacy wastes, as well as those from future operations.

- *Issuing the Final Waste Isolation Pilot Plant (WIPP) Supplemental Environmental Impact Statement by September 1997.*

FY 1997 Results: The Final Waste Isolation Pilot Plant (WIPP) Supplemental Environmental Impact Statement-Disposal Phase (SEIS-II)was signed by Deputy Secretary Moler on September 19, 1997. The SEIS-II was prepared by the Department to assess potential environmental impacts of six alternatives for disposal of the Department's transuranic waste. The proposed action to dispose of Defense transuranic waste at WIPP is the Department's preferred alternative. This supports the schedule for opening WIPP in May 1998.

- *Issuing Records of Decision on treatment, storage, and disposal of transuranic waste by September 1997.*

FY 1997 Results: Two transuranic waste (TRU) Records of Decision (RODs) will be issued: one based on the analysis in the Final Waste Isolation Pilot Plant (WIPP) Supplemental Environmental Impact Statement (SEIS-II), and the other based on the Final Waste Management Programmatic Environmental Impact Statement (WM-PEIS). The SEIS-II ROD will determine whether to use WIPP for disposal of TRU waste, and if so, what treatment level will be necessary. The WM-PEIS TRU ROD will determine the consolidation strategy for treatment and storage of TRU waste. The SEIS-II was approved in September 1997. The SEIS-II ROD is expected to be issued in January 1998.

- *Producing at least 270 canisters of vitrified high level waste for future repository disposal.*

FY 1997 Results: The DOE Office of Waste Management's High Level Waste (HLW) Program exceeded its commitment to produce 270 canisters of vitrified HLW. The Defense Waste Processing Facility at the Savannah River Site produced 169 HLW canisters and the West Valley Demonstration Project produced 122 HLW canisters for a total of 291 canisters poured in FY 1997.

- *Treating approximately 6,000 cubic meters of mixed low level waste and disposing of approximately 38,000 cubic meters of low level waste.*

FY 1997 Results: Analysis shows that planned actions to treat 6,000 cubic meters of mixed low level waste (MLLW) included 1,705 cubic meters of Pondcrete MLLW at the Rocky Flats site which was sent to Envirocare for commercial treatment and as subsequently disposed. To avoid the appearance of double counting and in compliance with performance measure guidance, this mixed waste volume was only reported in the disposal category. Including this and 4,656 cubic meters reported by the remaining DOE sites, a total of 6,361 cubic meters of MLLW were treated in FY 1997, which exceeded the goal to treat 6,000 cubic meters of MLLW by 6 percent. -- The

disposal of low level waste (LLW) was Successful. FY 1997 actuals for LLW reported by the sites totaled 43,089 cubic meters. The site breakdown was as follows: Albuquerque - 3,801; Chicago - 812; Idaho - 1,293; Nevada - 24,024; Oak Ridge - 253; Oakland - 829; Ohio - 137; Richland - 6,295; Savannah River - 5,645. The commitment to dispose 38,000 cubic meters of LLW was exceeded by 13 percent.

- *Awarding a contract for an advanced mixed waste treatment facility at the Idaho National Engineering Laboratory by December 1996.*

FY 1997 Results: The contract for the Advanced Mixed Waste Treatment Project (AMWTP) was awarded on December 20, 1996, to British Nuclear Fuel Limited (BNFL) Incorporated. The purpose of the project is to maximize the treatment of 65,000 cubic meters of transuranic and alpha low-level mixed waste currently in storage at the Idaho National Engineering and Environmental Laboratory, Radioactive Waste Management Complex, Transuranic Storage Area, while achieving a minimum volume reduction of 65 percent. As of the end of the third quarter, the contractor has submitted to DOE Idaho all required FY 1997 contract deliverables, including the Community Relations Plan (public participation plan), the contractor's AMWTP Project Management Plan, and a report to support the Siting Plan and Study.

EQ-03 REDUCING THE RISKS; CLEANING UP NUCLEAR WEAPONS SITES

Assessment: Successful

Description: Protect human health and the environment from risks posed by inactive and surplus DOE facilities and contaminated areas. (EM)

❒ Success will be measured by:

- *Completing cleanup at 13 EM geographic sites. This will bring the cumulative number of completed geographic sites to 65 out of a total universe of 132 geographic sites to be remediated.*

FY 1997 Results: Ten EM sites completed. In addition, all remediation activities were completed at one additional site. This measure was approximately 80 percent achieved. Sites not completed were attributed to expanded work scopes (discovery of additional contamination, lost work days due to higher than normal rainfall, and necessary rework due to damage over winter shut down) and new contract award (subcontractor terminated due to poor performance).

- *Completing remedial actions at approximately 400 release sites. This will bring the cumulative number of completed release sites to approximately 3,600 out of a total universe of 8,826 release sites.*

FY 1997 Results: Remedial actions were completed at approximately 485 release sites during FY 1997.

- *Completing approximately 70 facility decommissionings. This will bring the cumulative number of completed facility decommissionings to approximately 310 out of a total universe of 1,090 facilities.*

FY 1997 Results: Approximately 140 facilities were decommissioned during FY 1997.

- *Stabilizing approximately 100 Kg of plutonium across EM sites.*

FY 1997 Results: More than 100 Kg of plutonium across EM sites were stabilized. This represents satisfactory progress toward meeting the Department's commitments to the Defense Nuclear Facility Safety Board to stabilize all of DOE's plutonium by May 2002.

EQ-04 FINDING SOLUTIONS TO SPENT NUCLEAR FUEL STORAGE AND FUNDING ISSUES

Assessment: Successful

Description: Refocus the Civilian Radioactive Waste Management Program to provide meaningful deliverables that are consistent with reduced funding and revised policies. (RW)

❒ Success will be measured by:

- *Completing the excavation of the Exploratory Studies Facility main 5-mile loop and selected scientific instrumentation alcoves to support studies for a viability assessment of the Yucca Mountain site in September 1998, and subsequent site suitability determination and licensing.*

FY 1997 Results: Excavation of the Exploratory Studies Facility main 5-mile loop was completed on April 25, 1997. The thermal test alcove was completed in January 1997. The North Ghost Dance Fault alcove was completed May 9 and testing was initiated May 23, 1997.

- *Submitting the Topical Safety Analysis Report to the Nuclear Regulatory Commission for a non-site specific Phase I interim storage facility design to assist in maintaining a readiness capability should interim storage be authorized by legislation.*

FY 1997 Results: The Topical Safety Analysis Report was submitted to the Nuclear Regulatory Commission (NRC) on May 1, 1997. The NRC performed its acceptance

review, and found the submittal to be complete enough to begin its detailed technical review.

- *Issuing a Revised Notice of Proposed Policy and Procedures under Section 180 of the Nuclear Waste Policy Act, which provides for technical and financial assistance to States and Indian Tribes for training public safety officials through whose jurisdictions spent nuclear fuel and high-level waste would be transported, in preparation for an orderly transportation activity.*

FY 1997 Results: A Revised Notice of Proposed Policy and Procedures under Section 180 of the Nuclear Waste Policy Act was issued on July 17, 1997.

- *Issuing a draft request for proposals to provide waste acceptance and transportation services and equipment for commercial spent nuclear fuel, to carry on collaboration with the nuclear utilities and other stakeholders to resolve issues, and develop the management and logistical capability in the private sector.*

FY 1997 Results: An initial draft request for proposals was issued in December 1996. Based on comments received, a revised draft was issued in November 1997.

EQ-05 SHUTTING DOWN AND CLEANING UP SURPLUS NON-WEAPONS NUCLEAR REACTOR SITES

Assessment: Successful

Description: Safely deactivate surplus nuclear facilities, including the Experimental Breeder Reactor-II (EBR-II) in Idaho, and prepare wastes for interim storage and ultimate disposition. (NE)

❒ Success will be measured by:

- *Removing the remaining EBR-II fuel (53 assemblies, as of September 1996) from the reactor by December 1996.*

FY 1997 Results: All 53 assemblies removed on schedule.

- *Completing construction of the Sodium Processing Facility at Argonne National Laboratory-West by November 1996.*

FY 1997 Results: Completion of facility enables processing of sodium into the stable sodium carbonate form suitable for disposition.

- *Completing the conversion of 30,000 gallons of Fermi reactor sodium, which is currently in storage at Argonne National Laboratory-West, to sodium carbonate by September 1997. (The remaining 47,000 gallons of Fermi sodium is scheduled for conversion to sodium carbonate by the end of December 1997).*

FY 1997 Results: Significant progress has been made in starting up the Sodium Processing Facility (SPF) during the fiscal year. Much of the process line has been successfully tested using unirradiated sodium, and approximately 80 barrels of Fermi sodium have been successfully melted and loaded into the process line. However, some technical problems that occurred during the startup phase of the SPF have delayed the schedule for the processing of Fermi sodium. Some problems have been corrected and those parts of the sodium conversion process has been successfully tested. Startup testing and correction of additional problems are continuing. Upon completion of testing, corrective actions, and evaluation of alternatives to avoid or minimize future schedule impacts, a revised processing schedule will be developed.

EQ-06 ENSURING ENVIRONMENTAL JUSTICE

Assessment: Successful

Description: Accelerate waste management, environmental cleanup, remediation, and pollution prevention activities in order to address high and adverse impacts of our facilities on the human health and environment of surrounding communities. (ED)

❒ Success will be measured by:

- *Completing the construction of the groundwater remediation system for the F&H Area of the Savannah River Site by July 1997.(EM)*

FY 1997 Results: The remediation system is operational.

- *Completing 75 percent of the interim cap construction begun in FY 1996 for the Burial Ground Complex at the Savannah River Site. This project, when complete, will reduce the infiltration of rain and surface water into 76 acres of buried waste site by 70 percent. (EM)*

FY 1997 Results: Completed. This action reduces risk at one of the highest priority release sites.

- *Completing cleanup activities near the East Fork Poplar Creek community in Oak Ridge. (EM)*

FY 1997 Results: Phase I remediation was completed in 1996. Phase II remediation activities were completed in October 1997. Contaminated soils were removed from the floodplain area along the creek bank and disposed of in the Department of Energy's Y-12 Facility, Industrial Landfill V.

- *Accelerating remediation of environmental contamination and disposal of wastes at the Portsmouth Site, Oak Ridge Operations. (EM)*

FY 1997 Results: Construction of the cap on Peter Kiewit Landfill began in June 1997; 166,700 lbs of PCB waste oil were shipped to the TSCA incinerator (111 percent of the FY 1997 projected total); 107,300 lbs of non-regulated RCRA wastewater were treated and disposed of onsite (82.5 percent of the FY 1997 project goal); over 75,000 lbs of lead-acid batteries were surveyed and released as recyclable material; 135 boxes of sludge (23 shipments) are ready for shipment; 741 drums were repackaged into 73 B-25 boxes.

- *Continuing technical training and expanding access of information on subsistence related health risks to affected populations and professionals in medical, scientific and public health, by providing interactive Internet-based tools and newsletters.*

FY 1997 Results: The second of a tri-annual "Subsistence and Environmental Health Newsletter" was published and 1,800 copies disseminated to stakeholders. Also, the last 31 of 6 regional workshops with the National Academy of Sciences/Institute of Medicine were held to discuss environmental and health related impacts of Federal facilities on various communities and to seek mitigation options.

EQ-07 PREVENTING FUTURE POLLUTION
Assessment: Successful
Description: Reduce the generation of all waste streams in order to minimize the impact of the Department's operations on the environment, reduce operational cost, and improve the efficiency of its operations. (EM)

❒ Success will be measured by:

- *Completing pollution prevention plans showing waste reduction goals for 30 reporting sites by September 1997.*

FY 1997 Results: DOE has completed its review of all Site Pollution Prevention Plans submitted in FY 1997. The Plans contain site-specific waste reduction goals to meet the Department-wide waste reduction goals issued by the Secretary in May 1996. The site-specific goals for the 30 major DOE sites indicate that the Department will achieve the Secretarial waste reduction goals by December 31, 1999.

- *Completing at least 100 pollution prevention projects that reduce/avoid the generation of radioactive and mixed wastes by 4000 cubic meters by September 1997. (Data for reporting available at end of calendar year 1997).*

FY 1997 Results: Based on quarterly reports from the field, DOE has completed 213 projects as of September 30, 1997, totaling 9,340 cubic meters of radioactive and mixed waste reduced.

- *Ensuring that 60 percent of DOE purchases of EPA-designated products contain recycled or recovered materials, except where excluded by Section 402(b) of Executive Order 12873. (Data for reporting available at end of calendar year 1997).*

FY 1997 Results: Initial analysis of the data submitted looks as if the compliance level will be in the 53-57 percent range. DOE established its goal at 60 percent. The shortfall was caused in part by a significant increase in the program's scope from 5 to 24 reportable EPA-designated items. DOE's affirmative procurement program is committed to the acquisition of environmentally preferable products and will work with reporting sites to improve DOE's performance in this area.

EQ-08 NEGOTIATING INTERNATIONAL SUSTAINABLE DEVELOPMENT AGREEMENTS
Assessment: Successful
Description: Further developing institutions required for solving global environmental problems. (PO)

❒ Success will be measured by:

- *Having U.S. proposals adopted in the United Nations organizations on climate change, sustainable development, shipment and disposal of hazardous wastes, and long range transport of air pollution.*

FY 1997 Results: (A). CLIMATE CHANGE. In January 1997, the U.S. submitted its proposal for a legally binding agreement for the post-2000 period under the U.N. Framework Convention on Climate Change. The negotiation for this agreement was completed in December 1997, by the Third Conference to the Parties (COP-3) at its meeting in Kyoto, Japan. Major parts of the U.S. position were adopted. The United States has been successful at promoting its views, which many countries now share. DOE work figures prominently in the development of the U.S. position. (B). SUSTAINABLE DEVELOPMENT. PO staff participated on the U.S. Delegation (USDEL) for the Fifth session of the UN Commission on Sustainable Development (April 1997) and the U.N. General Assembly Special Session on Environment and Development ("Earth Summit 2") (June 1997). PO staff wrote position papers and interventions for negotiations on Energy, Transport and Climate Change, and revised the position papers and briefing notes as negotiations proceeded. PO staff acted as

advisor for senior U.S. Government (USG) officials during negotiations, and conducted negotiations independently when needed. (C). SHIPMENT AND DISPOSAL OF HAZARDOUS WASTE. Although not yet a party to the United Nations Environmental Program (UNEP) Basel Convention on the control of transboundry movements of hazardous wastes and their disposal, the U.S. (DOE interagency member) continues to influence the development of a Protocol on liability and compensation for damage resulting from waste movement and disposal. (D). LONG RANGE TRANSPORT OF AIR POLLUTION. As a result of the United Nations Economic Commission for Europe (UNECE) Convention on Long-Range Transboundry Air Pollution, the USG (DOE member) is influencing Protocol development for the control of persistent organic pollutants and heavy metals.

- *Having "joint action plans" in place with at least two countries to promote environmental security interests of the United States.*

FY 1997 Results: (A). THE BALTIC REGION. DOE is part of an interagency team in the final stages of negotiating a regional Joint Action Plan with the governments of Estonia, Latvia and Lithuania. A U.S. delegation, including DOE, visited the host capitals in September 1997. The Plan outlines activities to characterize and remediate former Soviet military installations, and to train current military personnel in environmentally supportable military management. DOE, Department of Defense (DOD) and Environmental Protection Agency (EPA), as well as host governments, will share responsibility for projects under the Plan. Specifically, DOE will utilize its unique technical expertise in the characterization and remediation of highly contaminated former military sites under the Plan. (B). ARCTIC MILITARY ENVIRONMENTAL COOPERATION (AMEC). A trilateral (U.S., Norway, Russia) initiative lead in the U.S. by the DOD and supported by DOE and EPA. The international agreement addresses major environmental security concerns emanating from inadequate Russian management of naval nuclear materials. DOE will utilize its unique capabilities in handling and disposing of spent fuel. World level attention is being given to this concern including at bilateral U.S.-Russian and G-7 Summits; under the Gore-Chernomyrdin Commission meetings; and with deliberations as a part of the London Dumping Convention. (C). SOUTHEAST EUROPEAN COOPERATIVE INITIATIVE (SECI). In May 1997, an agreement was reached by DOE and cooperating countries under the SECI. Program initiatives will assist economies in transition to develop new and, in particular, to strengthen existing energy efficiency demonstration zones that provide practical, observable examples of how to reduce policy, management and financial barriers to energy efficiency and to increase the participation of foreign and local business partners. This agreement is the basis for Environmental Security Initiative (ESI) projects expansion in the region.

Science & Technology

ST-01 MAINTAINING HIGH STANDARD OF SERVICE DELIVERY AT DOE SCIENCE FACILITIES

Assessment: Successful

Description: Provide and operate major user facilities needed for DOE research and foster research partnerships with industry and the scientific community. These facilities include synchrotron radiation sources, neutron sources, and electron beam microanalytical instruments which are essential forefront research tools that scientists use to advance knowledge and develop new products, materials, and manufacturing processes. (ER)

❒ Success will be measured by:

- *Operating DOE's basic energy sciences user facilities as follows in FY 1997:*
  - *Stanford Synchrotron Radiation Laboratory - 5000 hours*
  - *National Synchrotron Light Source - 4500 hours*
  - *Advanced Light Source - 4500 hours*
  - *Advanced Photon Source - 3000 hours*
  - *Intense Pulse Neutron Source - 3800 hours*
  - *Los Alamos Neutron Scattering Center - 3600 hours*
  - *High Flux Isotope Reactor - 4500 hours.*

FY 1997 Results:

Operating DOE's basic energy sciences user facilities:

- Stanford Synchrotron Radiation Laboratory - 5000 hours
- National Synchrotron Light Source - 5600 hours
- Advanced Light Source - 4800 hours
- Advanced Photon Source - 3300 hours
- Intense Pulse Neutron Source - 3800 hours
- Los Alamos Neutron Scattering Center - 3600 hours
- High Flux Isotope Reactor - 5300 hours

ST-02 CONTINUING SCIENCE-BASED PROGRAMS TO FIND NEW METHODS FOR ENVIRONMENTAL CLEANUP

Assessment: Successful

Description: Focus the Nation's science infrastructure on critical DOE environmental management problems. Forge new and diverse partnerships between the Department's Scientific and Program community to apply scientific knowledge that will revolutionize technologies and clean-up approaches to significantly reduce future costs, schedules and risk. (ER)

❒ Success will be measured by:

- *Institutionalizing the Environmental Management Science Program in FY 1997, through the partnership between scientists in the Office of Energy Research (ER) who understand how to select and manage research, and engineers in the Office of Environmental Management (EM) directly involved in cleanup who understand cleanup problems and research needs by:*
  - *Issuing a request for research proposals, including minority participation, for new approaches to the cleanup problems by December 1996.*
  - *Completing a review of all high scientific merit applications received, in response to the above request, through a full, external merit peer review by July 1997, and making research awards for projects proposing most promising approaches by October 1997.*
  - *Making research awards to qualified applicants by October 1997.*
  - *Holding 4 workshops or scientific meetings to identify site-specific research needs.*

FY 1997 Results: A call for research grant applications for the Environmental Management Science Program (EMSP) was issued on December 6, 1996. A similar notice was issued to the DOE laboratories at the same time. In response to these notices, more than 1,200 preapplications were received by the deadline of January 15, 1997. These were evaluated for responsiveness to the solicitations by program managers in both EM and ER, and about 425 were recommended for encouragement of formal applications. - A total of 542 applications and proposals were received by the deadline of April 16, 1997. These submissions were evaluated for scientific merit by peer review panels organized by ER program managers in early June and for relevance and program priority by panels of EM federal staff in late June, ahead of the stated goal of July 1997. Beyond the EMSP program, ER has also developed (in consultation with EM program staff) and issued a notice for the Natural and Accelerated Bioremediation Research program. Nearly 200 applications were received for this program, which supports fundamental research in bioremediation that may solve problems faced by the EM cleanup programs but is also directed more broadly at enabling application of bioremediation in the full range of environmental problems faced by the nation. - Several meetings have taken place during FY 1997 to identify research needs to be addressed by the EMSP. Meetings have been held at Oak Ridge and Idaho Falls to address needs of those sites. A tank wastes workshop has been held in Richland, focusing on the needs of the Hanford and Savannah River sites. A plutonium workshop has taken place in Santa Fe, addressing scientific and technology progress and needs of the sites that must deal with this material. Other meetings relevant to EMSP have taken place in addition to these four, for example a workshop organized by the groups funded in the 1996 EMSP for research into

sonification engineering, meeting the stated goal of holding four workshops on site-specific research needs.

ST-03 TRANSFERRING ENVIRONMENTAL TECHNOLOGIES
Assessment: Successful
Description: Demonstrate new environmental technologies and systems and transfer them to private industry and Federal facilities. (EM)

❒ Success will be measured by:

- *Demonstrating 20 new environmental technologies and systems.*

FY 1997 Results: The Office of Science and Technology has demonstrated 56 new environmental technologies and systems.

- *Making 40 environmental technologies available for transfer to and use by private industry and Federal facilities.*

FY 1997 Results: The Office of Science and Technology has made 51 environmental technologies available for transfer and use by private industry and Federal facilities.

ST-04 EXPLORING THE FRONTIER OF HIGH ENERGY PHYSICS
Assessment: Successful
Description: Continue to pursue international collaboration on large science projects. Conclude a formal U.S. Agreement with the European Laboratory for Particle Physics (CERN) leading to U.S. Participation in the Large Hadren Collider (LHC) and major detector projects. (ER)

❒ Success will be measured by:

- *Concluding negotiations and signing the DOE-NSF/CERN Umbrella Agreement on Participation in the European Laboratory for Particle Physics (CERN) Large Hadron Collider (LHC) program which will provide for participation by U.S. scientists in the LHC and the A Toroidal LHC Apparatus (ATLAS) and Compact Muon Solenoid (CMS) detectors.*

FY 1997 Results: Negotiations were concluded with CERN on the Formal Agreement for US participation in the LHC accelerator and the ATLAS and CMS detectors, and requested funding has been provided by the Congress in the FY 1998 budget. The agreement was signed by Secretary Peña and Neal Lane, Director of the National Science Foundation (NSF), at a ceremony hosted by the Presidential Science Advisor, on December 8, 1997.

- *Completing a cost, schedule, and management review of U.S. plans for DOE and NSF participation in the two large LHC detectors.*

FY 1997 Results: Management reviews of the two detectors were conducted in May and June 1997. Management will continue to conduct such reviews in the future as the detector projects progress.

- *Ensuring, through close management review, that U.S. universities and laboratories honor their commitments to provide R&D and prototypes of deliverables under the existing Interim Memorandum of Understanding (MOU) for the two LHC detectors and under the Interim Implementing Arrangement (IA) for the LHC Accelerator.*

FY 1997 Results: The university and laboratory groups working on the LHC continued their efforts under the interim MOUs and IA. This is an ongoing success factor and is judged to be partially successful since the management details and staffing are not fully in place.

ST-05 INVESTIGATING THE CAUSES OF GLOBAL CLIMATE CHANGE
Assessment: Successful
Description: Continue to acquire data and develop the understanding necessary to predict if and how energy production and use can affect global and regional environment. (ER)

❒ Success will be measured by:

- *Completing a series of experimental atmospheric measurements at an Atmospheric Radiation Measurement site to resolve whether the difference between observed and modeled absorption of solar radiation by the atmosphere under cloudy sky conditions is due to measurement errors or to a failure of the radiative transfer code in General Circulation Models to accurately model absorption under cloudy sky conditions.*

FY 1997 Results: Both the promised campaign and additional measurements have been carried out. The Fall 1997 campaign was successful and provided much important data that is currently being analyzed. Although substantial disagreement among members of the scientific community still exists, the range of issues that are in question has been decreased by these investigations.

ST-06 CONTINUING PEACEFUL USES OF THE ATOM
Assessment: Successful
Description: Continue cooperative efforts with Russia begun in 1973 for fundamental properties of matter, magnetic

confinement fusion, nuclear reactor safety, environmental restoration and nuclear waste management under the Peaceful Uses of Atomic Energy Agreement (PUAE). (PO)

❒ Success will be measured by:

- *Renewing the existing umbrella PUAE, which will expire June 1997, for 12-18 months and beginning negotiations of a new and expanded PUAE Agreement.*

FY 1997 Results: The U.S. submitted a diplomatic note to the Russians soon after the expiration of the umbrella agreement proposing an 18 month extension of the umbrella. The Russians have now responded and the agreement is extended until December 1, 1998.

- *Extending the Memorandum of Cooperation with Russia on fundamental Properties of Matter for its full 5-year term.*

FY 1997 Results: All four Memoranda of Cooperation have been extended for their full 5-year terms.

ST-07 ENSURING THE AVAILABILITY OF ISOTOPES FOR INDUSTRY, RESEARCH, AND HEALTH CARE

Assessment: Successful

Description: Produce and distribute radioisotopes and enriched stable isotopes for research and development, medical, industrial, agricultural, and other useful applications. (NE)

❒ Success will be measured by:

- *Reconfiguring the Annular Core Research Reactor for increased molybdenum-99 production capability by September 1997.*

FY 1997 Results: Hardware reconfiguration of the reactor was completed five days ahead of schedule.

- *Issuing four requests for proposals (RFP) by September 1997 for privatization of isotope program activities.*

FY 1997 Results: One RFP was issued in final on October 2, 1997. A second RFP was issued on December 8, 1997 A draft RFP, which combined two activities was issued on November 7, 1997.

- *Reducing the cost of isotope production in order to maintain a gross profit for all isotope sales of 20-25 percent by the end of FY 1997 despite a decreased world market for isotopes.*

FY 1997 Results: The gross profit of 20-25 percent was not achieved because of changes in commercial markets, foreign competition, customer requirements, loss of revenue from the High Flux Isotope Reactor, and accounting reclassification. Final adjusted number s provided by the KPMG Independent Accounting Firm after completing the audit included: $10.9 million in revenues and $13.3 million in production expenses resulting in a $2.4 million loss.

ST-08 PROVIDING RADIOISOTOPE POWER SYSTEMS FOR U.S. SPACE EXPLORATION

Assessment: Successful.

Description: Design, fabricate and assemble radioisotope thermoelectric generators (RTGs) and radioisotope heater units (RHUs) for delivery to the National Aeronautics and Space Administration (NASA) for use on the Cassini mission, scheduled for launch in October 1997, and the Mars Pathfinder mission, scheduled for launch in December 1996. (NE)

❒ Success will be measured by:

- *Completing safety test program for Cassini mission, issuing Cassini Final Safety Analysis Report, and supporting NASA in obtaining nuclear launch safety approval for the October 1997 launch.*

FY 1997 Results: The safety test program for the Cassini mission was completed and the Final Safety Analysis Report was approved on July 31, 1997. The Department supported NASA in obtaining nuclear launch safety approval for Cassini for the October 1997 launch.

- *Supporting launch of NASA Mars Pathfinder spacecraft (which uses three DOE-provided RHUs) in December 1996 by providing onsite technical support personnel and by having DOE emergency response capabilities in a full-readiness mode.*

FY 1997 Results: The Department provided onsite technical support personnel and emergency response capabilities for the NASA Mars Pathfinder spacecraft which was successfully launched in December 1996 and landed on Mars July 1, 1997.

- *Supporting launch of Cassini mission to Saturn, scheduled for October 1997, by completing RTG assembly and acceptance testing and shipping three new Cassini RTGs and the flight spare RTG to Kennedy Space Center at least three months prior to launch.*

FY 1997 Results: The Department successfully completed RTG assembly and acceptance testing and shipped three new Cassini RTGs and the flight spare RTG to the

Kennedy Space Center in May 1997 ahead of schedule five months prior to launch.

ST-09 CONTINUING TO IMPLEMENT A REDIRECTED FUSION ENERGY SCIENCES RESEARCH PROGRAM

Assessment: Successful

Description: Advance plasma science through the pursuit of national science and technology goals, development of fusion science and technology, and plasma confinement innovations as the central theme of the domestic program, and pursue fusion energy science and technology as a partner in the international effort. (ER)

❒ Success will be measured by:

- *Establishing a Basic Plasma Science Program at three to five universities as part of a multi-agency effort aimed at support of fundamental science issues associated with the plasma state of matter by January 1997.*

FY 1997 Results: From proposals submitted in January 1997, five physicists have been selected to receive Plasma Physics Junior Faculty Development Program grants totaling $1.8 million over three years. The program provides grants to outstanding plasma researchers early in their careers to maintain the vitality of university plasma research and to assure continued excellence in the teaching of plasma physics and related disciplines. In addition, DOE and the National Science Foundation have established a partnership for basic research in plasma science and engineering. In response to a Program Announcement, more than 240 proposals were received and subjected to a peer review process, resulting in the awarding of about 35 grants, 15 of which will be funded and managed by DOE.

- *Completing the Tokamak Fusion Test Reactor experimental research program in the third quarter of FY 1997 and implementing a safe shutdown by the end of FY 1997, consistent with Congressional guidance.*

FY 1997 Results: From December 1982 to April 1997, the Tokamak Fusion Test Reactor (TFTR) at the Princeton Plasma Physics Laboratory served as the largest US magnetic fusion research facility, setting the existing world record for fusion power production (10 MW) and achieving its ultimate scientific goals for studying the physics of reactor-grade fusion plasmas. Safe shutdown of TFTR began in April 1997 and was completed on schedule within 6 months. The facility will be in a caretaking mode until resources are available for dismantling and disposing of its components.

- *Beginning a competitive selection process for new proposals aimed at stimulating innovative fusion concepts with cost-effective development paths by mid-FY 1997.*

FY 1997 Results: The competitive selection process began as scheduled in March 1997. Forty proposals were received by the May due date. A technical merit peer review was completed in July 1997, and the ER will announce the selection of the four top rated proposals for funding.

- *Completing and reviewing, jointly with our international partners, the International Thermonuclear Experimental Reactor Detailed Design Report (ITER DDR), including cost estimates and safety assessments by August 1997.*

FY 1997 Results: The ITER DDR was completed by the Joint Central Team in December 1996. The ITER Council's Technical Advisory Committee reviewed the report in January 1997 and found it to be a sound basis for proceeding to the Final Design. The Council then invited each of the ITER participating parties to present its views on the DDR at the August 1997 Council Meeting. In the US, the Fusion Energy Sciences Advisory Committee conducted an extensive review of the DDR, broadly engaging the U.S. fusion community. At its July 1997 meeting, the Council heard the positive views of the parties, based on in-depth domestic reviews, and approved the DDR and its related technical documentation as the basis on which to continue the technical work for the remainder of the ITER Engineering Design Activities.

ST-10 BUILDING THE NEXT GENERATION INTERNET

Assessment: Successful

Description: Implement the Presidential Initiative on the Next Generation Internet is a multi-agency effort that includes the Defense Department, Energy Department, National Science Foundation, National Aeronautics and Space Administration (NASA), and the Commerce Department. Build a foundation of computer network technology applications for the future will be built through coordinated research activities. (ER)

❒ Success will be measured by:

- *Developing a plan for implementation of the Next Generation Internet (NGI) initiative and by developing Congressional support to secure funding for the initiative in cooperation with other Federal agencies and stakeholders.*

FY 1997 Results: IMPLEMENTATION PLAN: DOE has completed a number of activities related to this commitment. This is an interagency effort with NSF, NASA, DARPA, NIH, NOAA, and NIST. A multi agency strategic plan for the NGI was completed and released to

the public in May; DOE participated in a public workshop to get public comment on the strategic plan; a detailed implementation plan for the initiative, based on the budgets in the President's FY 1998 Request, has been produced; Director of the Office of Energy Research has held a number of public meetings to develop a technical roadmap for the initiative. The Director of the Office of Energy Research and other DOE staff participated in a NASA meeting in Silicon Valley to discuss government plans with leaders in industry. DOE and NSF signed a Memorandum of Agreement (MOA) to define how they would jointly manage the connections to universities.

ST-11 ADVANCING THE STATE OF GENOMIC RESEARCH

Assessment: Successful

Description: Work with the National Institutes of Health and the international community to advance the state of human genome research by reducing cost and increasing speed and quality of DNA sequencing and improving quality and efficiency of data entry into public data bases. Increase number of microbial sequences in public databases and identify microbial enzymes useful for DOE missions, including environmental cleanup. (ER)

❒ Success will be measured by:

- *Establishing a DOE Joint Human Genome Institute by combining the strengths of three national laboratories: Lawrence Livermore, Los Alamos, and Lawrence Berkeley.*

FY 1997 Results: A DOE Joint Human Genome Institute (JGI) was established with the signing of a Memorandum of Understanding between Lawrence Livermore, Los Alamos, and Lawrence Berkeley. The JGI has developed an operating and research plan, established a management team and structure, and has been reviewed by both an external group of scientific experts and their own scientific advisory group. The JGI and its Production Sequencing Facility will be responsible for contributing DOE's share of human DNA sequencing to the U.S. Human Genome Project. The JGI will continue developing and using sequencing strategies that automate as many steps in the process as possible from sample preparation to sequencing to data analysis to submission of data to public databases. The JGI sequencing factory will also be a community resource for testing and implementing new sequencing methodologies or tools that show the greatest promise for markedly reducing cost and increasing accuracy and speed.

- *Expanding the Microbial Genome Program by starting the characterization of microbial genes to identify enzymes with important DOE applications.*

FY 1997 Results: The Microbial Genome Program determined the complete genomic sequence or the sequence of microbial plasmids of several microorganisms with relevance to DOE. These include microbes, microbial gene pathways, or microbial genes for methane production, for the degradation of complex organic molecules, that are responsible for oil well fouling, and that produce gas vesicles that float on the surface of water. These have potential impacts on a number of DOE programs including the development and use of alternative fuel sources, environmental cleanup, improved yields from oil wells, and cleanup of oil spills. In addition, the Microbial Genome Program has expanded its research portfolio following a successful competition for a major microbial genome sequencing laboratory, for tools to better predict the function of microbial genes from their genomic sequence data, and for improved tools for the use and analysis of microbial genomic data in public databases. This new research will be funded in FY 1998.

ST-12 DIVERSIFYING AMERICA'S SCIENCE WORKFORCE

Assessment: Successful

Description: Develop a comprehensive agency-wide research and education program for the participation of minority educational institutions in Department of Energy missions and functions. (ED)

❒ Success will be measured by:

- *Reaching a goal of $100 million to support programs with minority educational institutions to assist the Department in carrying out its programmatic missions. 1500 minority students will graduate with science degrees as a result of DOE's contribution to more than 75 minority educational institutions in 1997.*

FY 1997 Results: The Department awarded $63 million to minority educational institutions through grants and cooperative agreements, which amounted to 63 percent of the goal. The Department's support to minority educational institutions resulted in more than 1,600 students receiving science degrees. These statistics are validated by the American Association of Engineering Societies.

- *Adopting a Department-wide coordinated funding strategy to support mandates outlined in Executive Orders: 12876 (Historically Black Colleges and Universities), 12900 (Educational Excellence for Hispanic Americans), and 13021 (Tribal Colleges and Universities) for the purpose of defining mission-related funding opportunities within Departmental elements.*

FY 1997 Results: The Department's funding strategy resulted in significant mission-related opportunities for minority educational institutions, such as:

- an environmental education award to the United Negro College Fund.
- selection of a renowned nuclear physicist to receive the first Chair of Excellence Professorship in nuclear physics at a historically Black college and university.
- first-time partnerships between U.S. Hispanic-serving institutions and Latin American counterparts to develop synergy with the Department's national laboratories in the area of international energy-related environmental research.
- technical assistance workshops to assist minority educational institutions in preparation of applications and proposals for participation in the Department's missions and functions.

ST-13 EVALUATING RESEARCH PROGRAMS USING PERFORMANCE MEASUREMENT

Assessment: Successful

Description: Formalize application of performance measures in four critical areas to evaluate research programs: (1) excellence in basic research, (2) relevance to DOE missions and national needs, (3) stewardship of research capabilities including essential scientific disciplines, institutions, and scientific user facilities, and (4) program management. For each of these areas of performance measurement, include, as applicable, the use of peer reviews, metrics, customer and stakeholder input, qualitative assessments such as historical retrospectives and annual program accomplishments. (ER)

❒ Success will be measured by:

- *Formalizing a Performance Measurement Process for the Department's scientific research programs by September 1997.*

FY 1997 Results: The Office of Energy Research established a Performance Measurement Team with representatives from its research offices. The Team developed a format whereby each research office will report its performance in each dimension of performance (i.e. quality, relevance, stewardship, and research management) and as appropriate evaluate accomplishments using the accepted set of assessment tools: peer review, metrics (counting things), stakeholder input, and program accomplishments.

ST-14 BUILDING THE NATIONAL SPALLATION NEUTRON SOURCE

Assessment: Successful

Description: Build the next-generation, high power, pulsed spallation neutron source. The National Spallation Neutron Source (NSNS) now in planning at Oak Ridge National Laboratory, will put the U.S. at the international forefront of neutron science. (ER)

❒ Success will be measured by:

- *Success will be measured by completing a peer review of a Conceptual Design Report (CDR) for the National Spallation Neutron Source by sixty independent, world-wide experts by July 1997.*

FY 1997 Results: The successful validation review of the CRD, covering cost, schedule, technical baselines and management of the NSNS project was conducted on June 23-27, 1997, and a review report has been issued.

ECONOMIC PRODUCTIVITY

EP-01 INCREASING U.S. ENERGY TECHNOLOGY EXPORTS AND INVESTMENTS

Assessment: Successful

Description: Stimulate sales of U.S. energy technology and capital investments in countries with large emerging markets. Diversify world wide supply through targeted support for U.S. industry efforts to invest in new oil and gas supplies and energy efficiency and renewable technologies. (FE/EE)

❒ Success will be measured by:

- *Removing barriers to U.S. companies in coal technology, energy efficiency and renewables markets, including those in China, Brazil, India, South Africa, and other developing countries that will use coal by: establishing U.S. and foreign partnerships, and providing technical expertise to multilateral and regional financing institutions in evaluation of finance applications.*

FY 1997 Results: For coal technology: China - The U.S./China Energy and Environmental Technology Center has been established. U.S. companies were escorted to China on specific trade missions. Work has been ongoing with the Asian Development Bank to develop frameworks for financing projects in China. New work plans for Fluidized Bed Combustion (FBC), Integrated Gasification Combined Cycle (IGCC), environmental control technologies, have been developed. Brazil - Work is ongoing with the World Bank Group for financing projects in Brazil. Assisted in developing framework for Coal Policy in Brazil which includes limiting import taxes. Facilitated U.S. industries activity for specific projects. South Africa - In August 1997, DOE and Tuskegee University co-sponsored the International Mini-Conference '97, Joint Ventures: Tuskegee University Capacity Building Program in Collaboration with the Republic of South Africa, American Businesses and Academia at Tuskegee University in Alabama. Participants included the Director of Coal Energy, the RSA Department of Minerals and Energy; representatives of ESKOM, the Embassy of South Africa and Witwatersand University, RSA. Representatives from Fort Hare University, RSA; M.L. Sultan Technikon, RSA, and U.S. energy industry and academia attended the conference. Conference participants were able to: (1) establish dialogue on Clean Coal Technologies and opportunities for both U.S. and South Africa; (2) explore opportunities for technology transfer, and (3) seek collaboration for joint ventures in coal utilization. Progress in Energy Efficiency & Renewable Energy includes: CORECT (Committee on Renewable Energy Commerce & Trade) and COEECT (Committee on Energy Efficiency Commerce & Trade) continued to develop appropriate partnerships to reduce barriers to utilization of efficiency and renewable technologies. Technical assistance is being provided to multilateral lending institutions to assure that efficiency and renewable technologies are included in their lending portfolios and that financing decision makers are aware of the benefits of using these U.S. technologies.

- *Initiating a forum for Arctic oil and gas practices with the Russian producing associations.*

FY 1997 Results: Under the Gore-Chernomyrdin Binational Commission's (GCC9) Energy Policy Committee, Business Development Committee, and the Environment Committee, a concept paper was developed to propose a U.S. -- Russian Marine Discharges Workshop, and the paper was delivered in Moscow by EPA officials, during GCC9, to discuss with appropriate Russian Ministries. The original idea of the forum on Arctic practices was revised to reflect the changing business climate and input by U.S. industry and the Russian Government to address a discrete subject area.

- *Opening of oil, gas, energy efficiency and renewable technology opportunities for U.S. companies by Ukraine.*

FY 1997 Results: DOE, under the Gore--Kuchma Binational Commission, wrote and delivered two papers to the Government of Ukraine: "Opportunities and Obstacles to Investment in Ukraine's Oil and Gas Sector" and "Comments on the Draft Law of Ukraine on Production Sharing Agreements". DOE hosted senior Ukrainian Government officials and U.S. industry in May 1997, to discuss the PSA legislation and they agreed to use some of our suggestions. In May 1997, Gore and Kuchma agreed in the "Joint Initiative on Gas Sector Reform" to jointly develop a strategy and action plan leading to a market-oriented, competitive, transparent, and efficient gas sector in Ukraine. DOE discussed Production Sharing Agreement legislation and gas sector reform in Energy Working Group and Sustainable Economic Cooperation meetings in Kiev in October 1997. Progress in Energy Efficiency includes: (1) Completed financial & technical assessment for a $38 million loan to improve the efficiency of public buildings in Kiev under the World Bank Kiev Institutional Buildings Assessment and Demonstration Project (KIBA). Completed installation of demonstration project applying energy efficient controls and measures in four schools. Presented computers to those schools as a representation of the energy savings they made. (2) Two large industrial plants received assistance and developed financing packages for energy efficiency improvements. One facility is expected to announce soon implementation of $50 million dollars of efficiency measures. In addition, at

four other plants, initial efficiency assessments have been conducted and two plants have been identified to receive technical assistance for development of financing packages. (3) The European Bank for Reconstruction and Development (EBRD) has responded affirmatively to DOE's request to be involved in EBRD's plan to develop projects for its UkrESCO (the energy service company sponsored by the bank). (4) After further analysis of the structure of Ukrainian district heating systems, a "subsidy shift" approach to the District Heating initiative was found to be unwarranted. Instead, a Gas Savings Project was initiated as a better way to address the problem. (5) A new Memorandum of Understanding (MOU) was signed related to the Task Force on Energy Efficiency Financing. The State Committee on Oil, Gas, and Oil Refining Industry of Ukraine was a new signatory to the MOU which also includes the U.S. Department of Energy and the State Committee of Ukraine for Energy Conservation., This is a top priority for Ukraine. (6) A Phyto Remediation project proposal developed for (I) biomass remediation of Strontium 90 and Cesium 137, and (ii) biomass power generation in the Chornobyl Exclusion Zone was reviewed. The Office of Nuclear Energy, Science, and Technology and the Office of Energy Efficiency and Renewable Energy are working together on developing a plan to implement this initiative. DOE representatives attended meetings in December in Slavutich and Chornobyl and follow up meetings and round tables are scheduled for February 1998. (7) DOE under the U.S. Business Development Support program awarded a contract to AIDCO to work with Ukraine's Orizon to finance a facility manufacturing energy-efficient windows.

EP-02 IMPROVING EFFICIENCY IN ENERGY INTENSIVE INDUSTRIES

Assessment: Successful

Description: Work with the most energy-intensive industries to focus cooperative research, increase energy and resource efficiency and improve U.S. competitiveness resulting in over $10 billion of industry energy cost saving by the year 2010. (EE)

❒ Success will be measured by:

- *Signing an aluminum industry partnership agreement by October 1996; signing a chemical partnership agreement by April 1997; and working with industry members to develop a consensus petroleum refining vision in the industry by September 1997.*

FY 1997 Results: Aluminum industry partnership signed in October 1996. Chemical industry partnership signed February 1997. Refining industry members prepared a preliminary vision in February 1997 but have decided to discontinue work and have put off development of an industry vision indefinitely.

- *Continuing roadmapping activities with six industries of the future.*

FY 1997 Results: Roadmapping activities are underway in six industries of the future - Forest Products, Chemicals, Glass, Steel, Metal Casting, and Aluminum.

EP-03 DELIVERING THE BENEFITS OF EFFICIENCY AND RENEWABLE ENERGY RESEARCH, DEVELOPMENT, AND DEPLOYMENT TO U.S. CONSUMERS

Assessment: Successful

Description: Work with our customers, partners and stakeholders to develop and make available to consumers energy saving and renewable energy products that will reduce their energy bills, improve the economy, prevent pollution and improve the environment. Save the public more than five dollars for each dollar of government investment in energy technology, with an average per person saving of $40 per year by the year 2000. Continue to build the industry base for a sustainable energy strategy and meet the growth in domestic and international demand for fuel and clean energy products. (EE)

❒ Success will be measured by:

- *Saving $10 billion in consumer energy cost in their homes, buildings, businesses, industries, and vehicles.*

FY 1997 Results: Based on this year's growth in market sales and application of products dependent upon EE developed technologies, services, and processes, consumers have realized more than $10 billion in energy cost savings this year. Some of those products that EE has developed include efficient windows, efficient oil burners, lighter weight cars, more efficient appliances, and efficient motors.

- *Saving $700 million in Government energy costs.*

FY 1997 Results: Preliminary data indicate the Federal government avoided $823 million in Federal buildings systems energy costs in FY 1997.

- *Producing over $600 million dollars worth of new sustainable energy capacity. Reducing imports by 1 billion fewer gallons of gasoline, thus saving $300 million.*

FY 1997 Results: U.S. renewable industry annual sales surpassed $700 million.

- *Reducing imports by 1 billion gallons of gasoline, thus saving $300 million.*

FY 1997 Results: Saved 1 billion gallons of oil as a result of DOE transportation technologies RD&D.

- *Avoiding 15 million tons of pollutants.*

FY 1997 Results: Consumers saved money by using products and processes that require less energy such as installing efficient windows or oil burners, lighter weight cars, and more efficient appliances or electric motors. These energy savings reduced the amount of carbon dioxide emissions by 30 million tons and concomitant amounts of CO, Carbon, SO_x, NO_x, and particulates.

EP-04 PLANNING THE BUILDINGS AND COMMUNITIES OF THE 21ST CENTURY

Assessment: Successful

Description: Work with the national experts and building community leaders and customers to develop and implement a strategic vision, roadmap, and implementation plan to improve the energy efficiency and environmental performance of buildings and communities. This plan will result in 50 percent more efficient new homes and commercial buildings, and 20 percent more efficient existing homes saving 3 quadrillion watts (quads) of energy and preventing nearly 70 million metric tons of carbon emissions by the year 2010. (EE)

Revision: A clarifying piece of information: The 50 percent more efficient new homes and commercial buildings is in relation to efficiency in 1993. The equivalent goal stated in relation to current building efficiency would result in a 30 percent improvement. The difference is due to substantial savings that have accrued as a result of state adoptions of more stringent codes.

❒ Success will be measured by:

- *Developing a plan for increasing the energy efficiency of buildings through the adoption of an approach the buildings industry calls systems integration or "whole buildings" by December 1997.*

FY 1997 Results: Draft implementation plans have been developed and are being incorporated into the strategic planning process and have been used to help shape the FY 1999 budget submission.

- E*stablishing strategy implementation teams with members of the design, construction, materials, and equipment manufacturing trades and the financing community who will commit to assist in the implementation.*

FY 1997 Results: Implementation teams were created on March 3, 1997. The teams may be reconfigured based on the final strategic plan.

- *Establishing a sustainable communities network of 25 cities with priority for Empowerment zone cities.*

FY 1997 Results: Completed over 70 on-site consultations, presentations, and other assistance. Of the sites visited, over 20 of those were in Empowerment Zones (EZ) or Enterprise Communities (EC). In addition to the on-site consultations, presentations and other assistance, eight grants to EZ communities were awarded. The grants funded projects that will help the neighborhoods engage in sustainable development and incorporate energy efficiency into that development. The grants are going to organizations in the following communities: Los Angeles, CA; El Paso, TX; San Diego, CA; Mississippi County, Ark.; Atlanta, GA; Houston, TX; Kansas City, MO; and eastern Virginia for projects in neighborhoods that have been declared Federal Empowerment Zones or Enterprise Communities.

EP-05 FACILITATING THE GROWTH AND DEVELOPMENT OF SMALL BUSINESSES

Assessment: Successful

Description: Develop a comprehensive Departmental strategy to provide for increased procurement opportunities for small business. (ED)

❒ Success will be measured by:

- *Creating an on-line quarterly update of the Department's Forecast of Contracting and Subcontracting Opportunities for FY 1997.*

FY 1997 Results: The FY 1997 Forecast was developed and printed in October 1996. The printed Forecast was updated December 1996 and placed on the Office of Economic Impact and Diversity's homepage in January 1997, to allow for quarterly updates. Queried DOE offices in May for updated Forecast opportunities for the third and fourth quarter of FY 1997 and no updated opportunities were reported.

- *Expand participation in the small business Mentor-Protégé Program by increasing participation of the prime contractors by 50 percent.*

FY 1997 Results: The Department continued to expand the Mentor Protégé initiative that links small disadvantaged, 8(a) and women-owned businesses with major DOE contractors during FY 1997. In FY 1997, the program added six new mentors. The program had nine mentors at the end of 1996. The Department will continue the pilot program until final guidelines are codified.

- *Increasing 8a awards by 5 percent over 1996 by removing impediments through enhanced partnerships with the Small Business Administration (SBA).*

FY 1997 Results: Departmental FY 1997 8(a) totals were incomplete at time of publishing.

- *Conducting a comprehensive subcontracting plan review to assure compliance under contract reform, diversity clause provisions.*

FY 1997 Results: The Department has reviewed the Diversity Plans for the Oak Ridge Environmental contract; Chicago's Brookhaven Laboratory, DynMcDermot at the Strategic Petroleum Reserve Project Office site and Pacific Northwest laboratory at Richland as required by the diversity clause. Reviews have been conducted for all DOE contracts over $3 million for small business participation.

- *Co-sponsor at least three training and technical assistance seminars with other Federal agencies to exchange lessons learned and innovative initiatives.*

FY 1997 Results: The Office of Small Business successfully increased its business outreach and training activity during FY 1997. DOE's training seminars have been particularly useful to the minority and women-owned business community. The Office co-sponsored and hosted the Region IV 8(a) Contractor Associating meeting in April; co-sponsored the conference and exposition in Upper Marlboro, Maryland in June; in August, the Office co-hosted a Women-owned Business Procurement Fair with Headquarters' Procurement center and the SBA.

- *Improving women-owned business procurement by increasing access to contracting opportunities, increasing women-owned businesses on bidder mailing list, and conducting outreach to alert women owned business to opportunities available in the agency.*

FY 1997 Results: FY 1997 the Office designated a point of contact as part of the women-owned business initiative. The Department's on-line small business homepage and Forecast accessibility expanded the informational material enormously on contracting opportunities. DOE supplied it's management and operating contractors with the SBA's computer listing of over 1,000 8(a) women-owned businesses nationwide.

CORPORATE MANAGEMENT

CT-01 MAKING MORE INFORMATION AVAILABLE TO THE PUBLIC

Assessment: Successful

Description: Declassify information under the Atomic Energy Act and Executive Order 12958, reduce the volume of new information classified and make information more accessible. (NN)

❒ Success will be measured by:

- *Reviewing an additional 440,000 documents for possible declassification.*

FY 1997 Results: Reviewed an additional 400,590 documents for possible declassification department-wide, and met 91 percent of the Department's goal.

- *Completing a review for declassification and by releasing a cumulative total of 35 percent of historically significant records 25-years old and older under E.O. 12958.*

FY 1997 Results: Exceeded the goal by 3 percent. Specifically, in 1997, completed reviews on 2.3 million pages of permanent, historically valuable classified record collections under the DOE's Executive Order 12958 declassification plan. A cumulative total of 3.8 million pages have been determined to be unclassified.

CT-02 IMPROVING SERVICES TO CUSTOMERS AND STAKEHOLDERS

Assessment: Successful

Description: Develop techniques to improve delivery of services and products to customers and stakeholders. (HR)

Comments: The Department has made good progress in improving and streamlining its Freedom of Information function and has been successful in improving access to its information to our customers and stakeholders by ensuring that our information systems are more reliable, cost-effective, and easy to access. The Department will continue phasing in program offices into the FOIA Centralization Pilot and continue reducing the FOIA backlog.

❒ Success will be measured by:

- *Phasing-in four additional program offices within centralization pilot by March 1997 and eliminate any FOIA backlog in 1995 requests by December 1997.*

FY 1997 Results: FOIA Staff have identified and met with the four additional program offices for the centralization pilot. Due to budget constraints and downsizing in the FOIA office, the schedule for phase-in has been revised: One office will be phased-in effective November 3, 1997; a second office effective November 24, 1997; and, the final two offices by January 1998. Although the FY 1995 FOIA backlog was not completely eliminated, it was reduced by 70 percent during the fiscal year. The reduction of the FY 1996 FOIA backlog exceeded our 50 percent goal, and was reduced by 71 percent.

- *Conducting the first annual 360-degree review of laboratory management by community leaders and stakeholders by October 1997 to set an initial benchmark so that future annual reviews can confirm progress made in improving services to customers and stakeholders.*

FY 1997 Results: It has been determined that the 360-degree review of laboratory management by community leaders and stakeholders is more appropriately a function of the laboratories themselves. This requirement will be included in laboratory contracts at the time of their renewal.

- *Improving access to Departmental information by the public and other stakeholders through more reliable and cost-effective information systems by:*
  - *Identifying Departmental mission-essential information systems and ensuring that they all have year 2000-compliant implementation plans by the middle of FY 1997.*
  - *Increasing by 50 percent the utilization of existing government-wide contracts for procurement of information management purchases as measured by the dollar value of purchases in FY 1997.*
  - *Achieving $6 million in Strategic Alignment Initiatives savings through improved information management acquisitions.*

FY 1997 Results: By June 30, 1997, the Department identified 272 mission-essential systems with plans for ensuring Year 2000 compliance. Subsequently, an additional 196 mission-essential systems were identified and all have Year 2000 Compliance Plans in place. Utilization of existing contracts by the field increased by 50 percent and saved the Department $3 million through the end of FY 1997. The Department has saved $7.3 million through improved information management acquisitions which exceeded our Strategic Alignment Initiative goal of $6 million.

CT-03 INVOLVING STAKEHOLDERS IN THE POLICY MAKING PROCESS
Assessment: Successful
Description: Assure that the business of DOE will be open to the full view and input of those whom it serves, consistent with applicable laws, regulations, and contracts. (EM)

❒ Success will be measured by:

- *Ensuring that Environmental Management decisions consider the input of site-specific groups, and increasing the number of Site-Specific Advisory Boards to 13 by the end of FY 1997.*

FY 1997 Results: In June 1997, an Environmental Management Site-Specific Advisory Board (SSAB) was established in Maywood, New Jersey. There are now 13 SSABs located at DOE sites throughout the country comprised of stakeholders affected by the Department's environmental management activities. These citizen boards provide informed advice and recommendations on national and site-specific issues to the DOE Office of Environmental Management. Many other public participation activities were conducted in FY 1997. The Environmental Management Advisory Board continued to provide advice and recommendations to DOE on national environmental management issues. This board is comprised of stakeholders from government agencies, academic institutions, environmental organizations, public interest groups, Native American Tribes, and other organizations. In addition, a wide range of public involvement activities were completed at Headquarters and in the field, including stakeholder meetings, briefings, budget workouts, interactive workshops, and conferences with the Assistant Secretary for Environmental Management, field office managers and other DOE staff.

- *Completing a third national survey of DOE stakeholders' attitudes, needs, and expectations of DOE to assess the Department's progress against the FY 1993 and FY 1995 results.*

FY 1997 Results: The Third National Public Trust and Confidence Survey was completed in April 1997. The objective of the survey was to determine the views and opinions of stakeholders associated with DOE, and identify ways to improve public trust and confidence in the Department. More than 600 stakeholders from across the country were interviewed for the survey. Results indicate that overall public trust and confidence in the Department have shown significant improvement since 1992. Among the stakeholders associated with EM, 73 percent agreed that "DOE's policies are basically on the right track," 65 percent reported that the Department "can be counted on to do the right thing," and 80 percent were satisfied with DOE's efforts over the past two years to open the decision-making process to public input.

HR-01 STREAMLINING MANAGEMENT STRUCTURE
Assessment: Successful
Description: Reduce management layers and encourage employee empowerment. (HR)

Comments: Human Resources has provided guidance and tools such as buy-outs, early retirement options, etc., to assist organizations to reduce the number of supervisors and senior level positions as the Department continues its downsizing. We exceeded our target on reducing the number of supervisors.

❒ Success will be measured by:

- *Reducing the number of supervisors from 2,015 at the end of FY 1996 by an additional 10 percent.*

FY 1997 Results: The number of supervisors has been reduced to 1,526 (24 percent reduction) which exceeds the target of 1,813.

- *Decreasing the number of employees in senior-level positions (SESs, GS-15s, and GS-14s) from the FY 1995 base of 5,532 to 5,185 by the end of FY 1997.*

FY 1997 Results: The number of senior level positions has been reduced to 5,259, which is within 74 of the target of 5,185. The number of senior level employees anticipated to leave the Department in FY 1997 did not materialize and the target was not achieved in this area. It should be noted that a number of senior level employees will be departing DOE due to buyouts, attrition, etc. over the first quarter of FY 1998 which should enable the Department to achieve the overall target.

HR-02 ENSURING WORKFORCE DIVERSITY
Assessment: Successful
Description: Maintain a diverse workforce by integrating diversity principles into operational and organizational activities, and implementing the recently issued Hispanic Outreach Initiative (ED)

❒ Success will be measured by:

- *Completing a survey to assess the Department's level of implementation of the "Strategic Plan for Diversity" and the Hispanic Outreach Initiative by April 1997.*

FY 1997 Results: Conducted a survey to assess the Department's level of implementation of the strategic diversity plan. The survey revealed that the Department has fully implemented the plan. While the Department did little

or no recruiting during FY 1997 for budget-related reasons, the Department successfully established a) Mentor-Protégé Programs, b) Diversity Councils, c) Diversity Partnership Programs for specific ethnic and minority groups [i.e., Hispanic Association of Colleges and Universities (HACU), the National Association for Equal Opportunity in Higher Education (NAFEO); the American Indian Science and Engineering Society (AISES) and Center for the Advancement of Hispanics in Science and Engineering Education (CAHSEE)]; d) Continuing Labor/Management Partnership between the Department and NTEU and/or M/O Contractors; e) Employment and Training Action Plan between Headquarters and Blacks in Government; and f) Developed and issued an Employee Guide on Family Friendly Programs. HISPANIC OUTREACH INITIATIVE: A survey assessing the Department's level of implementation of the Hispanic Outreach Initiative was completed. The assessment was important in determining what needed to be done to fulfill the objectives of the Initiative. The survey revealed the following notable achievements: a) Education: The Department exceeded its annual spending goal of $20 million dollars for Hispanic educational initiatives by 100 percent. It launched innovative new partnerships with various organizations in support of environmental capacity building for U.S. Hispanic Serving Institutions working with universities in Mexico and Chile; b) Employment: Diversity achievements were maintained while remaining committed to increase Hispanic employment throughout the Department; c) Small business opportunities: the Department's major contractors are being required to have program and performance measures in place for education, employment, small business, community and economic development outreach.

- *Issuing Quarterly reports on the Diversity Program Monitoring System which reflects the Department's efforts to maintain diversity achievements during downsizing in FY 1997.*

FY 1997 Results: We periodically review reports of the Department's workforce statistics. The Department's workforce remained relatively static during FY 1997, with very little impact on minority and women representation in the workforce and notwithstanding a reduction in force, effective January 3, 1997.

- *Randomly surveying 2 percent of the personnel selecting officials regarding diversity goals, including Hispanic representation in the work force.*

FY 1997 Results: The Department conducted a survey that revealed personnel selecting officials are fully committed to achieving diversity. The number surveyed have incorporated diversity goals into their organizational plans, with notable achievements, as indicated elsewhere in this report. Additionally, the personnel selecting officials have committed themselves to increasing the representation of Hispanics at all levels of the workforce. The Department's downsizing efforts and hiring freeze have limited the selecting officials' ability to bring on new hires. However, the partnerships established with employees and minority group organizations will greatly enhance the selecting officials' ability to meet their diversity goals.

- *Implementing the Department's diversity strategy through contract reform addressing employment, education, small business, and community outreach.*

FY 1997 Results: With respect to the contractor workforce, the Department issued Equal Employment Opportunity and Diversity Programs Guidelines (DOE G 311.1A-1), which contain a chapter addressing operating and onsite service contractor facilities. Further, the Department held its annual Contractors Diversity Conference in May 1997, to discuss diversity issues. The conference was very successful in that senior management actively participated.

HR-03 IMPROVING TECHNICAL QUALIFICATIONS OF PERSONNEL

Assessment: Successful

Description: Use tracking systems to ensure improved technical qualifications. (HR)

❒ Success will be measured by:

- *Meeting or exceeding applicable Technical Qualification Standards by 55 percent, or more, of 1,750 covered employees by November 1997.*

FY 1997 Results: The Defense Nuclear Facilities Safety Board has recommended and the Department has agreed to revise the 93-3 Implementation Plan to address continuing challenges in improving technical work force competency. Data collection on the Technical Qualifications Program (TQP) has been temporarily suspended pending a major redesign of the TQP as part of the 93-3 revision.

- *Developing an action tracking system by December 1996, to report on actions taken by program and operations offices to address the 73 positions identified as critical unmet technical safety needs.*

FY 1997 Results: An Action Tracking System has been implemented. Critical unmet technical safety needs are reported monthly, and as otherwise necessary, by the Program and Operations Offices. Their inputs are compiled into a single report, which is then provided to management. The system will be further automated as the Corporate Human Resources Information System is implemented throughout the Department.

- *Establishing a tracking system by December 1996 to help ensure that individual development plans for employees covered by the Technical Qualifications Standards will be reviewed and updated by August 1997 to maintain and enhance the operational safety of nuclear facilities.*

FY 1997 Results: By December 1996, Program and Operations Offices implemented either "TQP Tracker," a module of the SMART Management Information System, or their own tracking system. These allow the Individual Development Plan to be incorporated into a real time process of identifying and satisfying technical training requirements.

- *Improving employee competence serving in technical safety management positions at defense nuclear facilities by raising qualification requirements, using excepted service appointments, retraining and other personnel flexibilities.*

FY 1997 Results: The Federal Technical Work Force Review Group (Review Group) was established as an outcome of the joint Department of Energy and Board off-site conference held in June 1996. The Review Group oversaw the development of the Senior Technical Safety Manager Qualification Standard, identified senior technical safety management positions throughout the Department, and developed detailed technical competency criteria for each of these positions to ensure that incumbents are technically competent to carry out their safety management responsibilities. Through September 30, 1997, 63 positions have been filled using the Department's excepted service authorities. An updated handbook entitled "RECRUITING, HIRING, AND RETAINING HIGH QUALITY TECHNICAL STAFF, A Manager's Guide to Administrative Flexibilities," was issued in January 1997 and distributed to senior technical managers, servicing personnel and training offices.

HR-04 IMPROVING HUMAN RESOURCE PRACTICES

Assessment: Successful

Description: Develop techniques for ensuring management success in achieving performance goals critical to realizing the Department's mission. (HR)

❒ Success will be measured by:

- *Implementing the Department's Strategic Alignment Initiative on the Corporate Approach to Training by designating and making operational two, pilot, corporate training Centers of Excellence by December 1997.*

FY 1997 Results: New "Centers of Excellence" Program Description, Application, and Criteria have been drafted for review by the Training and Development Management Council. These documents reflect the commitments in the DOE Strategic Plan, as well as the transition from SAI-44 "Corporate Approach to Training" to the new DOE Training and Development Business Plan. It is anticipated that the two Centers of Excellence applications will be reviewed and approved by December 30, 1997.

- *Providing 32 learning activities using advanced training technology related methods among at least three different, physically separated sites to reduce costs and/or increase availability of shared, cross-cutting employee learning activities.*

FY 1997 Results: 28 learning activities have been reviewed and approved by Human Resources. Two additional learning activities (Quality Assurance and Fire Protection) are being reviewed and it is anticipated that these will be finalized in early FY 1998. Two remaining learning activities (Thermo, Heat Transfer, and Fluid Flow as well as Senior Technical) were in development at the end of the year. Learning activities have been provided using advance training technology related methods such as interactive, satellite-based instruction and computer-based training (e.g., The General Employee Technical Base Training and Chemical Processing).

- *Improving the leadership skills of the Department's workforce as indicated by the performance feedback of managers and employees by:*
  Providing the training "Leaders for a Customer-Driven Organization" to at least 60 percent of the Department's managers in FY 1997 with follow-on assistance in cascading the leadership concepts to all levels within their organizations. (QM)

FY 1997 Results: Within the constraints of budget reductions, the Leadership Forum training was delivered to all teams who requested training. Next fiscal year, training will continue to provide managers with the information necessary to respond to Administration and congressional mandates. Component 1 of Leaders for a Customer Driven Organization: 206 Senior Managers out of a target audience of 600 (34.3 percent) trained in "Leaders for a Customer-Driven Organization" from October 1 - September 30,1997. Component 2 Cascade System: - 156 employees trained in the cascade Component. Component 3 Strategic Support: - 209 employees developed in Strategic Support Component of the Leadership Forum. The Executive Leadership Forum provides leadership skills to senior managers and cascades these concepts to employees at all levels throughout the Department. All activities of the Leadership forum are designed to support

management success in meeting the goals of the National Performance Review and DOE Strategic Alignment initiatives, including the Government Performance and Results Act, the Executive Order on Customer Service, Organizational Assessment, Empowerment and Workforce Diversity. The practical application of Forum learnings have helped to: streamline business operations, improve strategic planning efforts, emphasize the value of organizational assessment, measure progress and organizational results, focus on improved human resources practices, and strengthen effective partnerships throughout the Department. The Executive Leadership Forum is a uniquely designed organizational intervention which includes team-based training; systematic cascading of leadership concepts; organizational development and consulting support on action planning. This program engages a systems approach to change management by explaining linkages of Administration and Department initiatives and highlights the critical role of leadership in achieving the departmental goals using quality principles and continuous improvement.

HR-05 PROVIDING TRANSITION ASSISTANCE TO EMPLOYEES

Assessment: Successful

Description: Offer career transition assistance to minimize the impacts of downsizing on Headquarter's employees. (HR)

❒ Success will be measured by:

- *Expanding services to include:*
  - *Ten specialized 2-day workshops for displaced employees.*
  - *DOE-HQ Intranet system to provide on-line job search, counseling, and other career transition information and assistance by November 1996.*

FY 1997 Results: Ten Specialized Workshops were conducted and completed by Human Resources in January 1997, and a DOE On-Line System was developed and utilized during the entire fiscal year.

- *Developing and implementing an outplacement and career development tracking system, using patron profiles, exit interviews, and follow-up interviews and evaluating outplacement services by September 1997.*

FY 1997 Results: An Outplacement and Career Development Tracking System was developed and implemented. The System has received excellent reviews during the evaluation phase.

EH-01 IMPROVING EFFICIENCY AND EFFECTIVENESS OF PROTECTING WORKERS, THE PUBLIC, AND THE ENVIRONMENT

Assessment: Successful

Description: Prevent worker accidents, protect the public and environment, while saving time and resources through safety and health contract provisions and more effective work planning. (EH)

❒ Success will be measured by:

- *Incorporating strong and effective safety management systems provisions in four Management and Operation contracts to protect environment, safety, and health.*

FY 1997 Results: Updated safety management provisions were incorporated in five M&O contracts during FY 1997. This includes Lawrence Livermore Lab, Lawrence Berkeley Lab, Los Alamos Lab, Mound, and Oak Ridge EM.

- *Implementing Enhanced Work Planning at major DOE sites over the next three years by involving approximately a third of the DOE workers every year in more effective work planning and hazard identification.*

FY 1997 Results: Enhanced Work Planning (EWP) has successfully expanded to include all but a very few major DOE sites. In August 1997, workers at eight DOE sites received the Vice President's "Hammer Award" for the successful implementation of EWP.

EH-02 IDENTIFYING PRACTICAL WAYS TO ADDRESS THE MOST SIGNIFICANT HEALTH RISKS TO FORMER WORKERS

Assessment: Successful

Description: Survey selected former workers and workplace hazards to examine possible links between hazardous substances exposure during work and adverse health effects. (EH)

❒ Success will be measured by:

- *Success will be measured in FY 1997 by completing six assessments, which will establish the basis for a more comprehensive program of medical follow-up of former workers.*

FY 1997 Results: Three Phase 1 assessments were completed during FY 1997 and the remaining three assessments were completed during the first quarter of FY 1998. Proposals for further phases of these assessments are being formulated and will be evaluated during first quarter FY 1998. Awards for up to four additional Phase 1 assessments are also expected within the first quarter of FY 1998.

EH-03 PRESERVING AND PROTECTING VALUABLE RUSSIAN RECORDS
Assessment: Partially Successful
Description: Ensure the archival preservation of vulnerable and fragile Russian worker radiation records in the Urals, to help the U.S. gain further insight into radiation safety. (EH)

❒ Success will be measured by:

- *Completing the preservation microfilming of worker dosimetry records at Mayak.*

FY 1997 Results: Travel to Mayak, Russia by historians/archivists was postponed during FY 1997, due to unavoidable international circumstances. However, preservation microfilming is currently underway with completion expected in FY 1998.

EH-04 MAINTAINING A MULTI-DISCIPLINARY INDEPENDENT OVERSIGHT PROCESS
Assessment: Successful
Description: Maintain a multi-disciplinary, fully integrated oversight process for independently evaluating environment, safety, and health, and safeguards and security programs. (EH)

❒ Success will be measured by:

- *Completing value-added, comprehensive oversight evaluations, focusing on environment, safety, and health-management systems at four DOE sites before October 1997.*

FY 1997 Results: Four safety management evaluations were completed during FY 1997: Brookhaven, Los Alamos, Sandia and East Tennessee Technology Park.

MP-01 CONTINUING THE STRATEGIC ALIGNMENT INITIATIVES TO STREAMLINE AND RE-ENGINEER
Assessment: Successful
Description: Implement planned Federal staffing and resource reductions through the Strategic Alignment Initiative to achieve a savings of $304 million in FY 1997 and cumulative savings of $1.7 billion by FY 2000. (FM)

❒ Success will be measured by:

- *Reducing Federal staffing to 11,503, down by an additional 1,100 positions from the FY 1996 target and thus achieving cumulative savings for FY 1996 and FY 1997 of $173 million.* (HR)

FY 1997 Results: Both the staffing and savings targets were achieved. The FY 1997 end-of-year staffing was 11,168 and the combined savings from reductions in FY 1996 and FY 1997 were $59,670,000 and $153,562,500, respectively for a cumulative savings of $213,232,500.

- *Saving through continued improvements and re-engineering activities including:*
  - *$90 million in support contracting.* (HR)
  - *$31 million in Information Resource Management.* (HR)
  - *$35 million in travel.* (CFO)

FY 1997 Results: The baseline for this initiative was previously set as FY 1994 with $700 million obligated against support service contracts. In FY 1997, the Department's support service contracts obligations were $453 million, or a cost avoidance of $243 million in support service contracting for the year. Savings in the area of Information Resource Management were $70 million for FY 1997. Savings in FY 1997 were $48 million from reduced Federal and M&O contractor travel.

- *Returning $15 million to the treasury from the sales of additional surplus assets.* (WT)

FY 1997 Results: The total deposited from asset sales in FY 1997 were over $26 million primarily from the sale of the Weeks Island Crude Oil Pipeline in Louisiana ($22 million).

MP-02 BECOMING A WORLD CLASS QUALITY ORGANIZATION
Assessment: Successful
Description: Using the President's/Malcolm Baldrige Quality Award criteria, measure organizational performance, identifying measures and successes in support of the Government Performance Results Act (GPRA) and the National Performance Review (NPR). (QM)

❒ Success will be measured by:

- *Improving Quality assessment scores as measured by the Department's Quality Award Program.*

FY 1997 Results: The program received 22 applications from organizations within the Department. The examination process was held in May. Judging was completed in August. Overall scores increased from 341 to 359. This was the second consecutive year where scores improved.

- *Increasing number of first tier Headquarters and Field organizations completing an organizational self-assessment using the Baldrige criteria.*

FY 1997 Results: The 1997 Self-Assessment, normally performed in October, will be postponed until February 1998. February will be the new date for self-assessments in

order to more closely align with the Energy Quality Award. Those Federal organizations who apply for the Energy Quality Award, will have performed all the necessary steps in the assessment process and will additionally receive feedback from outside their own organization.

- *Improving the effectiveness of Departmental decision making and planning processes by: (PO)*
  - *Implementing the Strategic Management System developed in FY 1996.*
  - *Improving and updating the DOE Strategic Plan.*
  - *Preparing an FY 1998 Annual Performance Plan.*
  - *Submitting the FY 1996 Annual Performance Report.*

FY 1997 Results: The DOE Strategic Plan was completed and delivered to OMB on September 30. The distribution has also been made to the Congress, employees, contractors and stakeholders. The Strategic Plan is also accessible on the World Wide Web. The Department's FY 1998 Budget was submitted with a Performance Plan, a year ahead of the GPRA schedule. FY 1996 Annual Performance Report documenting results against all of the FY 1996 Agreement was drafted but never published. The U.S. Department of Energy Consolidated Financial Statements for FY 1996, which incorporates selected performance agreement results were published.

MP-03 IMPROVING CONTRACTOR PERFORMANCE AND ACCOUNTABILITY
Assessment: Successful
Description: Make continual improvements to the Department's contracting practices through increased competition, use of performance-based contracts, greater contractor financial accountability, and use of new contracting strategies such as privatization where appropriate. (S3)

❒ Success will be measured by:

- *Increasing the number of performance-based management contracts from 15 to 21. As with prior performance-based management contracts, these additional 6 will incorporate the full range of contract reform which includes, increased competition, performance measures, performance incentives, results-oriented statements of work, greater contractor financial accountability, and increased use of fixed price contracts.*

FY 1997 Results: Twenty-two performance-based management contracts have been put in place. Note: At the time this measure was developed, the term "performance-based management contract" was intended to include both Management and Operation (M&O) and Management and Integrating (M&I) contracts. Since then, the term has been narrowly defined to include only M&O contracts. For consistency, this measure continues to include both the M&O and M&I contracts.

- *Awarding at least 15 percent of service contracts as performance based service contracts.*

FY 1997 Results: Of the 80 prime service contracts awarded by the end of the fourth quarter, 25 were performance based service contracts: 31 percent. Note: This measure considers only contracts over $100,000; contracts under $100,000 are considered small purchases.

- *Publishing by July 1997 the Final Rule on competition, contractor accountability, diversity contract clause, make-or-buy decisions, and other matters.*

FY 1997 Results: The final rule was published on June 27, 1997.

- *Completing by July 1997 a Self-Assessment of the Contract Reform Initiative.*

FY 1997 Results: The self assessment was completed September 1997.

- *Completing the development of the privatization implementation plan by September 1997.*

FY 1997 Results: This measure is on hold pending the selection of a Director for the Office of Contract Reform and Privatization.

MP-04 REDUCING FEDERAL REGULATIONS
Assessment: Successful
Description: Eliminate unnecessary prescriptive requirements, as well as nonessential processes, reports, forms, and directives.

❒ Success will be measured by:

- *Reducing the number of paper purchase orders by 20 percent and reducing the actual cost per transaction from $56.00 to $25.00 by the end of FY 1997, by implementing a Department-wide Electronic Commerce system for small purchases.*

FY 1997 Results: Through September 30, 1997, the Department has exceeded its target to reduce paper purchase orders by 20 percent, with an actual reduction of over 40 percent. The Department purchased over $24 million in goods and services in Fiscal Year 1997 using electronic commerce.

- *Reducing cycle time by up to 30 percent by the end of FY 1997, by applying business process reengineering*

to major acquisitions, interagency agreements, and payment processing.

FY 1997 Results: Procurement and Financial Assistance regulations were reduced by 50 percent. Business process reengineering was applied to major processes, with Headquarters procurement process leadtime being reduced by 30 percent to 70 percent. Similar reductions were made in the Department's field offices.

- *Reducing the administrative costs of printing and distribution of DOE Directives by increasing the number of DOE organizations that rely on the Paperless Directives System to 50 percent.*

FY 1997 Results: 50 percent of DOE Offices have converted to the Paperless Directives System which meets the target. The administrative costs associated with printing and distributing DOE directives has been reduced accordingly.

MP-05 REDUCING THE OVERSIGHT BURDEN ON FIELD ACTIVITIES

Assessment: Successful

Description: Further improve the efficiency of DOE oversight of field offices by consolidating oversight visits and simplifying administrative reviews. (FM)

❒ Success will be measured by:

- *Promulgating DOE-wide policies on business management oversight to guide initial implementation efforts of seven remaining operation offices and other programmatic field offices by September 1997.*

FY 1997 Results: The guidance for implementation at the remaining field offices was issued on September 9, 1997.

MP-06 EFFECTIVE USE OF DOE LANDS AND FACILITIES THROUGH COMPREHENSIVE PLANNING

Assessment: Successful

Description: Initiate comprehensive planning to integrate life cycle asset management goals of stakeholders and the Department and to determine ways to broaden the use of DOE lands and facilities. (FM)

❒ Success will be measured by:

- *Integrating planning efforts for asset acquisition, use, maintenance, disposition, real property management, energy conservation and utilities through the implementation of the comprehensive planning process at 60 percent of the major sites.*

FY 1997 Results: All 11 Operations and Field Offices had or were finalizing a performance agreement which implemented comprehensive planning under DOE O 430.1, Life-Cycle Asset Management. This equates to 31 of the 50 major operating or clean-up sites, or 62 percent of the sites. Excluding the eight sites which are purely clean-up operations with defined end-states, comprehensive planning has been implemented at 71 percent of major sites. Two other offices, the Strategic Petroleum Reserve Office, and Yucca Mountain Project Office have, or are putting comprehensive planning processes in place, and plan to have self assessment agreements with DOE Field Management in the near future.

- *Completing at least 12 major actions to make land and facilities available for broader public or Federal use.*

FY 1997 Results: 44 major actions were reported by DOE sites. Details of the 44 actions can be found on the Internet at: http://www.fm.doe.gov/, FY 97 President's Performance Agreement, MP-6.

MP-07 IMPROVING THE DEPARTMENT OF ENERGY'S MANAGEMENT OF ITS LABORATORIES

Assessment: Partially Successful

Description: Review with a view toward improving the Department's key management processes that effect the size, cost, and mission focus of its laboratories. (S2)

❒ Success will be measured by:

- *Reducing laboratory operating costs by $400 million in FY 1997 toward the goal of reducing these costs by $2.0 billion over the next five years, without reducing research outputs.*

FY 1997 Results: Cost savings for FY 1997 are projected to be $434 million and are expected to grow each subsequent year to reach a total of $2.5 billion by FY 2000.

- *Use the Laboratory Operations Board to review by July 1997: - The program management mechanism of each of the Department's mission areas and recommend improvements to enhance the Department's effectiveness. - The smaller laboratories with a view toward improving the contractual arrangements. - The laboratory institutional planning for better alignment with the Department's strategic planning process. - The Department's mechanism for evaluating the scientific and technical merit of work at the laboratories to determine how it compares with other governmental organizations and the extent to which changes may be needed.*

FY 1997 Results: Findings and recommendations from the program management reviews were presented to the Secretary at the September 1997 Secretary of Energy Advisory Board meeting and action plan is being written. Smaller labs study terms of reference is being written. Integration of laboratory institutional planning and DOE strategic planning underway following July workshop. Peer review study results are being written.

MP-08 PROVIDING QUALITY FINANCIAL PRODUCTS AND SERVICES

Assessment: Successful

Description: Utilize the most current and innovative techniques to achieve increased responsiveness, effectiveness, and efficiency in providing the financial management information that is needed by the Department's decision makers in order to realize programmatic and corporate goals.(CFO)

❒ Success will be measured by:

- *Preparing and submitting Department-wide audited financial statements for FY 1996 with an unqualified opinion to the Office of Management and Budget by March 1997.*

FY 1997 Results: The Department-wide audited financial statements for FY 1996 were prepared by the Office of Chief Financial Officer, received an unqualified opinion from the Office of the Inspector General, and were submitted to the Office of Management and Budget on February 28, 1997. The Department is the only cabinet level agency or Department to receive an unqualified opinion on the first attempt to prepare financial statements.

- *Establishing a reporting system that provides useful financial information to customers for analyzing and controlling functional support costs by September 1997.*

FY 1997 Results: A Functional Cost Reporting System has been established, and has compiled functional cost reports from 21 Departmental sites. The functional cost reports display FY 1994 through FY 1997 financial information for customers to utilize in efforts to better understand and control functional support costs.

- *Supporting Departmental and Congressional decision making by analyzing, monitoring, and reporting on the Department's efforts to control, manage, and where appropriate, reduce uncosted balances and construction project balances.*

FY 1997 Results: The Department has taken aggressive actions to control and reduce uncosted balances and construction project balances during FY 1997. In June 1997, the Department issued it's Report on Uncosted Balances for FY 1996 and indicated that the total uncosted balance is the lowest it has been in over 15 years. Total Department-wide balances were reduced from approximately $8.9 billion in FY 1995 to an FY 1997 level of $6.2 billion. The Department has also been successful in managing and reducing construction project balances. The Department issued the FY 1996 Prior Year Construction Project Report in April 1997. The report shows a reduction in the number of open projects from 340 open project in FY 1994 to only 159 open projects in FY 1996. This reduction demonstrates the Department's efforts to oversee open construction projects and diligently close out completed projects.

- *Consolidating and franchising financial activities where the activity can be more cost effectively or efficiently performed elsewhere. - Consolidating payment processes for 19 accounting offices into three financial service centers - Establishing a Memorandum of Understanding with Department of Interior and conducting a workshop to delineate the process for outsourcing the Department's payroll by September 1997.*

FY 1997 Results: The Department has successfully consolidated payment processes for 19 accounting offices into three financial service centers at Headquarters, Oak Ridge and Albuquerque. The Department has also achieved its goals of completing the Memorandum of Understanding with the Department of Interior and conducting a workshop to delineate the process for outsourcing the Department's payroll functions. During this period, the Department received additional data which revealed that the Department of Interior's estimated costs and projected implementation date were cost prohibitive and untimely for development of an interface with the DOE personnel system. As a result, the Department partnered with the Federal Energy Regulatory Commission in evaluating other payroll service providers. An initial proposal for an alternative provider was presented to DOE management on August 27, 1997 and a final proposal and discussion paper will be presented in the first quarter of FY 1998.

- *Developing and initiating implementation of an Executive Information System (EIS) to make useful financial information readily available to the Department's managers.*

FY 1997 Results: An EIS Information and Technology Workshop was held in March that included Headquarters and Field Participants. The workshop provided a medium for information exchange and was an integral part of the process for identifying business information requirements and evaluating EIS software before making an information

technology investment. During July and August, an EIS prototype system was designed and developed to provide a demonstration model for managers to view system capabilities, and further define requirements for analyzing business information. The EIS Pilot system was implemented and made available for use on September 30, 1997. The EIS supports summary analyses for senior management use, as well as provides information for external summary level reporting. The initial pilot system is being deployed to selected Headquarters and Field Office staff.

- *Transitioning from a compliance-based oversight of the Headquarters, Field, and Contractor financial operations, to an integrated performance-based financial management process.*

FY 1997 Results: Partnering with Headquarters and Field organizations have resulted in proposals from all participating pilot sites on performance measures to be included in the performance-based financial management process. The Chief Financial Officer reviewed the proposed financial performance measures, and issued the CFO's critical performance measures to the 10 pilot Field sites on September 22, 1997 for agreement and use in the Business Management Oversight Process.

Glossary of Acronyms

Offices

CFO	Chief Financial Officer
DP	Defense Programs
ED	Economic Impact & Diversity
EE	Energy Efficiency & Renewable Energy
EH	Environment, Safety & Health
EM	Environmental Management
ER	Energy Research
FE	Fossil Energy
FM	Field Management
HR	Human Resources and Administration
MD	Fissile Materials Disposition
NE	Nuclear Energy
NN	Nonproliferation & National Security
PO	Policy and International Affairs
QM	Quality Management
RW	Civilian Radioactive Waste Management
S2	Deputy Secretary
S3	Under Secretary
WT	Worker & Community Transition

Business Lines

ST-	Science and Technology
NS-	National Security
EQ-	Environmental Quality
ER-	Energy Resources
EP-	Economic Productivity

Corporate Management

CT-	Communication and Trust
HR-	Human Resources
EH-	Environment, Safety, & Health
MP-	Management Practices

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

REPORT OF THE OFFICE OF INSPECTOR GENERAL ON THE DEPARTMENT'S SYSTEM OF INTERNAL CONTROLS

The Secretary
U.S. Department of Energy

We audited the consolidated financial statements of the Department of Energy (Department) for the year ended September 30, 1997, and have issued our report thereon dated December 29, 1997, except for Note 13, as to which the date is January 30, 1998, and Note 16, as to which the date is February 19, 1998.

The management of the Department is responsible for establishing and maintaining internal controls. In fulfilling this responsibility, estimates and judgments by management are required to assess the expected benefits and related costs of internal control policies and procedures. A system of internal controls should provide management with reasonable, but not absolute, assurance that the following objectives are met:

1. Transactions are executed in accordance with management's authorization and are properly recorded and accounted for to permit the preparation of reliable financial reports in accordance with applicable accounting policies and to maintain accountability over assets.

2. Funds, property, and other assets are safeguarded against loss from unauthorized use or disposition.

3. Transactions, including those related to obligations and costs, are executed in compliance with laws and regulations that could have a direct and material effect on the financial statements, and are in compliance with any other laws and regulations that Office of Management and Budget (OMB), Departmental management, or the Inspector General have identified as being significant and for which compliance can be objectively measured and evaluated.

4. Data that support reported performance measures are properly recorded and accounted for to permit preparation of reliable and complete performance information.

Because of inherent limitations in any system of internal controls, errors or irregularities may nevertheless occur and not be detected. Also, projection of any evaluation of internal controls to future periods is subject to the risk that procedures may become inadequate because of changes in conditions or that the effectiveness of the design and operation of policies and procedures may deteriorate.

In planning and performing our audit of the financial statements of the Department for the year ended September 30, 1997, we considered its internal controls in order to determine our auditing procedures for the purpose of expressing an opinion on the financial statements and not to provide an opinion on the system of internal controls. Our consideration included obtaining an understanding of the significant internal control policies and procedures, determining whether they had been placed in operation, assessing the level of control risk relevant to all significant account balances, and performing sufficient tests to assess whether internal controls are effective and working as designed. Our evaluation of the system of internal controls was conducted to determine whether it met the objectives identified in the previous paragraph and not to provide an opinion on the system of internal controls. Accordingly, we do not express such an opinion.

Our evaluation of the controls for performance information was limited to those controls designed to ensure the existence and completeness of the information. With respect to the performance measure control objective, we obtained an understanding of relevant control policies and procedures designed to permit the preparation of reliable and complete performance information and assessed control risk.

In evaluating internal controls, we considered matters reported by the Department in compliance with the Federal Managers' Financial Integrity Act, our prior and current audit reports, and other independent auditor reports on financial matters and internal accounting control policies and procedures. The Appendix to this report lists performance audit reports published by the Office of Inspector General during Fiscal Year 1997 that were considered in our evaluation of internal controls.

As part of our audit, we noted certain matters involving the system of internal controls and its operation that we consider to be reportable conditions under standards established by the American Institute of Certified Public Accountants and OMB Bulletin No. 93-06, *Audit Requirements for Federal Financial Statements*, as amended. Reportable conditions involve matters coming to our attention relating to significant deficiencies in the design or operation of the system of internal controls that, in our judgment, could adversely affect the Department's ability to ensure that the objectives of internal controls, as previously defined, are being achieved. The conditions considered to be reportable conditions are discussed in Exhibits I and II to this report.

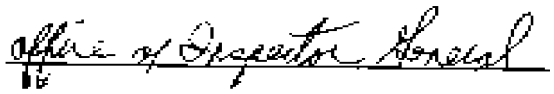
A reportable condition is classified as a material weakness when the design or operation of one or more of the internal control components does not reduce to a relatively low level the risk that errors or irregularities in amounts that would be material in relation to the financial statement being audited, or material to performance measures or the aggregation of performance data, may occur and not be detected within a timely period by employees in the normal course of performing

their assigned functions. We considered the condition discussed in Exhibit I to this report to be a material weakness. Management should consider this weakness when preparing its yearend assurance memorandum on management controls.

Our consideration of the system of internal controls would not necessarily disclose all matters in internal controls that might be reportable conditions and, accordingly, would not necessarily disclose all reportable conditions that are also considered to be material weaknesses as defined above.

The audit also disclosed a number of other conditions relating to the Department's system of internal controls that we did not consider to be reportable conditions and which did not materially affect the Department's financial statements. These matters will be communicated to the Office of Chief Financial Officer and to the head of field elements in separate reports. The recommendations made in these reports are designed to strengthen internal controls or improve operating efficiencies.

This report is intended for the information of the management of the U.S. Department of Energy. This restriction is not intended to limit the distribution of this report, which is a matter of public record.



December 29, 1997, except for Note 13, as to which the date is January 30, 1998, and Note 16, as to which the date is February 19, 1998.

Material Reportable Condition
Findings and Recommendations

Environmental Remediation Liabilities

Background: The Department's estimate of environmental liabilities should reflect future costs associated with remediation of environmental contamination existing as of the last day of the fiscal year. In the Fiscal Year 1996 consolidated financial statements, the Department's estimate was based primarily on the 1996 Baseline Environmental Management Report (BEMR), a Congressionally-mandated report produced by the Office of Environmental Management (EM). During the latter part of Fiscal Year 1996, the Department embarked on a new vision and strategy for addressing the environmental cleanup of its sites. This new strategy was communicated in a June 1997 Discussion Draft, *Accelerating Cleanup: Focus on 2006* (2006 Plan). This effort resulted in significantly lower life-cycle cost estimates for most EM activities than had been reported in BEMR. It did not include active facilities or currently excess or soon to be excess facilities not currently in the EM program that had been included in BEMR (pipeline facilities).

To reflect the Department's new strategy, the Office of Chief Financial Officer (CFO) adopted a multi-faceted approach to capture all pieces of the environmental liability estimate. The Department's environmental remediation liability at September 30, 1997, was based on three main components:

- EM's 2006 Plan, which estimates life-cycle costs for the EM program;
- Cost estimates for currently excess or soon to be excess facilities not yet transferred to EM; and
- A cost estimate for remediation of currently active facilities.

Each of the Department's field offices was instructed to record its portion of the liability according to instructions issued by the CFO.

Finding 1: Cost Estimates for Environmental Liabilities

As a component of its overall system of internal controls, the Department is responsible for establishing controls to provide reasonable assurance that estimates supporting accruals of unfunded environmental liabilities are complete and readily verifiable. The Department's system for estimating environmental remediation costs did not completely and accurately capture the Department's environmental liability as of September 30, 1997. The following are examples of the problems our audit identified:

Material Reportable Condition
Findings and Recommendations

- The EM component of the environmental liability was based on data submitted to Headquarters in February of 1997 in preparation for issuance of the June Discussion Draft of the 2006 Plan and was not updated through the end of the fiscal year.

- None of the five field offices included in our test work had documented that each facility known to be contaminated had been included in one of the three components of the environmental liability.

- The recorded liability at September 30, 1997, before audit adjustments, omitted most of the disposal fees (about $5 billion) associated with high-level waste and spent nuclear fuel.

- Errors in removing productivity projections and recording program direction costs were made by certain field offices when the liability was initially recorded.

- The methodology used for developing support costs for the currently active facilities component of the estimate produced incorrect results.

- Headquarters staff members recorded comments that questioned the completeness and accuracy of the 2006 Plan project cost estimates and waste volume data. Despite the effort devoted to this review, these comments were never addressed or specifically considered during preparation of the June Discussion Draft of the 2006 Plan.

- Departmental officials within the programs currently responsible for pipeline and active facilities were not actively involved in preparing or reviewing the liability estimates associated with these facilities.

- The Department did not make provision for the effect of several uncertainties that impact the liability, including potential delays in opening or capacity issues at planned waste repositories or the availability of funding for various privatization projects.

These conditions occurred because the Department did not have an adequate system of internal controls in place to ensure that the environmental liability estimate was complete and accurate. As a result, the Department's environmental liabilities, before audit

Material Reportable Condition
Findings and Recommendations

adjustments, were understated by about $7.5 billion, and the uncertainty related to the estimated costs for environmental liabilities was increased.

Recommendations: The Department should:

1. Develop and implement a process to update the environmental liability estimate through fiscal year end;
2. Ensure that validation procedures are sufficient to determine that all contaminated facilities are included in the environmental liability estimate;
3. Set up a quality control program to identify and correct errors in the cost estimates upon which the environmental liability is based;
4. Clarify lines of authority and responsibility for active and pipeline facilities and develop procedures to involve responsible program officials in estimating the liability associated with these facilities; and
5. Analyze the impact of uncertainties with regard to the estimate and record or disclose the results as appropriate.

Management Reaction: Management generally concurred with the recommendations and agreed to instruct the field elements in future guidance to update their estimates through the end of the fiscal year, strengthen internal controls for Plan 2006 work, increase program official involvement, reemphasize to the field the importance of documenting inclusion of all facilities, amend the financial statements to reflect audit adjustments, and evaluate the need for disclosure of uncertainties.

Auditor Response: Management's planned actions for future periods are responsive to our recommendations. In addition, in response to draft audit findings issued on these matters, the Department performed supplementary yearend analyses and reconciliation work and recorded audit adjustments necessary to ensure that the liability recorded in the financial statements was materially correct. We were required to extend our fieldwork in this area through January 30, 1998 to consider these additional actions taken by the Department.

Reportable Conditions
Findings and Recommendations

Performance Measurement Reporting

Background: In accordance with OMB guidance, each annual financial statement should include a narrative Overview of the reporting entity. This Overview should provide a clear and concise description of the reporting entity, its mission, activities, accomplishments, and overall financial results and condition. It should also include information on whether and how the mission of the reporting entity is being accomplished. The performance data presented in the Overview of the Fiscal Year 1996 consolidated financial statements was based primarily on commitments drawn from the Secretary's Performance Agreement with the President (Agreement). The Overview presented the Department's commitments, planned goals necessary to accomplish the commitment, and results achieved during the fiscal year. Although the Agreement continued to be used as the basis for reporting performance information, the Department elected to modify the Overview presentation method significantly for its Fiscal Year 1997 consolidated financial statements.

The Department relied on a computer database (system) to collect and report performance information for use in the Overview in Fiscal Year 1996 and Fiscal Year 1997. Our Fiscal Year 1996 Audit of the Department's Consolidated Financial Statements identified problems with the accuracy, validation, and maintenance of data in that system (see Office of Inspector General Report No. CR-FS-97-02). Management generally concurred with the audit findings and agreed to take corrective action in the form of Departmental guidance and training. Despite efforts to provide guidance and additional training to program officials, problems with data used to support performance measures persist.

Finding 2: Performance Measure Reporting

OMB Bulletin No. 94-01, *Form and Content of Agency Financial Statements*, requires the Overview to the financial statements to communicate whether and how the Department is accomplishing its missions using explicit measures of performance. Both OMB Bulletin No. 94-01 and Statement of Federal Financial Accounting Concepts No. 2 (SFFAC 2) require that performance measures presented in the financial statements contain certain attributes in order to be useful to readers of the financial statements. We found in many cases that the usefulness of the programmatic performance measures presented in the financial statements was limited. For example, we found that the performance measures presented in the Overview:

Reportable Conditions
Findings and Recommendations

- Generally did not present the Department's short-term or long-term goals or make comparisons to such goals and did not sufficiently relate results to the Department's missions, goals or objectives. Instead, the Overview presented a list of accomplishments that were not directly identifiable with the Department's missions, goals or objectives.

- Excluded specific performance information regarding the Federal Energy Regulatory Commission (FERC) and the Department's power marketing administrations (PMAs).

- Were not limited to the most significant objectives or valued attributes of the Department. For example, the Science and Technology section of the Overview included results of a $40 million program and measures on training that, while by themselves may be important accomplishments, are not necessarily significant objectives of the Department.

- Provided few negative results and no trend data.

- Often lacked the explanatory information needed to help readers understand the significance of the measures.

- Were not always objective or measurable. For example, certain measures indicated that the Department supported, enhanced or facilitated some objective.

The Department's method of summarizing data from the Agreement focused on results rather than the measurement of performance against goals and in many cases eliminated essential detailed goal information. As a result, the presentation of the Overview limits financial statement readers' ability to assess the Department's performance during Fiscal Year 1997.

In the future, inclusion of the key attributes in the Department's method of reporting performance measures will be essential to successful implementation of upcoming reporting changes required by OMB Bulletin No. 97-01, *Form and Content of Agency Financial Statements*. Beginning with Fiscal Year 1998, the Department will be required to report performance measures that:

- Are consistent with measures previously included in budget documents and other materials related to the implementation of the Government Performance and Results Act;

Reportable Conditions
Findings and Recommendations

- Provide information about the cost effectiveness of programs;

- Include an explanation of what needs to be done and what is planned to be done to improve financial and program performance; and

- Are linked to the programs presented in the Statement of Net Cost.

Recommendation: The Department should review and incorporate in its preparation of performance measures the OMB and SFFAC requirements ensuring that it communicates whether and how the Department is accomplishing its missions, thereby enhancing the usefulness of the Overview.

Management Reaction: Management concurred with the recommendation. The Department is working to improve the performance measures and the Overview and will use the new strategic plan to present short and long-term goals and relate accomplishments to missions, goals and objectives. Management has agreed to include performance results for FERC and the PMA's performance in future reports; will work to address the problem of specific measures and performance; and include further explanatory information needed to help readers understand the significance of measures. The Department will also provide more trend data and report appropriate negative results to clearly set forth performance.

Auditor Comments: Management's planned actions are responsive to our recommendation.

Finding 3: Collection and Support of Performance Measure Information

OMB Bulletin No. 94-01 requires the Department to maintain adequate supporting documentation for its performance measures and retain such documentation in a manner suitable for audit. As a component of its overall system of internal controls, the Department is also responsible for establishing controls to provide accurate, complete, and timely performance measure information. As previously reported in the Office of Inspector General's FY 1996 Headquarters-level management report (CR-FS-97-02), performance information in the Department's system was not always supported, accurate, complete, or up-to-date. For example:

- Information indicating that the Department exceeded its savings goals for energy efficiency and renewable energy efforts was based on a draft report of Fiscal Year

Reportable Conditions
Findings and Recommendations

1996 results. As a result of our request for data to support Governmentwide energy savings, program officials reevaluated their submission and revised previously reported savings downward by over $170 million. Reported annual savings of $10 billion in the category of consumers' energy costs were not adequately supported.

- The system contained information indicating that the Department was on track to meet Department of Defense weapons alteration, modification, and surveillance schedules. However, the responsible program manager reported this based on his personal knowledge, had no support for the information reported, and informed us that he was not aware of the requirement to maintain support for performance measures.

- The system also contained information indicating that the Department had met its Fiscal Year 1997 goal with regard to the award of performance-based management contracts. The claimed results were supported by a list prepared from memory that was not supported by documentary evidence. Two cited examples of performance-based contracts were actually contract modifications that contained performance-based attributes adopted in Fiscal Year 1996. One contract listed as an example was not a performance-based management contract and had been originally awarded in the 1960s.

- Because the system was not completely updated on a timely basis as required, the Department could not rely on it to generate the Overview and was forced to obtain more accurate and current information directly from the program offices.

- A discrete set of supporting information was not generally available for audit verification. Support was often assembled from numerous sources only after auditor requests for supporting data.

These problems occurred because the Department had not fully developed a system of internal controls for ensuring accurate and timely reporting of performance information in the Overview. As a result, the Department continues to risk reporting information in the Overview and supplemental information that does not present an accurate and up-to-date picture of how it is accomplishing its missions.

Recommendation: We recommend that the Department strengthen internal controls to ensure the Headquarters program offices follow Departmental guidance on preparing and reporting accurate and current performance information.

Reportable Conditions
Findings and Recommendations

Management Response: Management concurred with the recommendation and recognized the potential weakness. The Department is improving and management is hopeful that audit involvement will result in further enhancements to the reporting processes. The Department's performance measure information system, if used appropriately, can provide a greater level of assurance that managers have read reports of results and approve of system inputs. The Department's philosophy has been that managers who are accountable must ensure that results are accurately reported. In Departmental guidance for development of commitments for Fiscal Year 1998, management emphasized that performance goals (measures) should be specific, quantified, stretching, and auditable.

Auditor Comments: Management's planned actions are responsive to our recommendation.

Office of Inspector General
Fiscal Year 1997 Audit Reports

Report Number	Report Title	Date Report Issued
IG-0398	Special Report on the Audit of the Management of Department of Energy Construction Projects	November 21, 1996
IG-0399	Audit of the U.S. Department of Energy's Identification and Disposal of Nonessential Land	January 8, 1997
IG-0400	Summary Audit Report on Contractor Employee Relocation and Temporary Living Costs	January 27, 1997
IG-0402	Audit of the Management of the Department of Energy's Leased Administrative Facilities	April 1, 1997
IG-0403	Audit of the Use of Intra-Department Requisitions	May 2, 1997
IG-0404	Audit of Department of Energy Contractor Occupational Injury and Illness Reporting Practices	May 7, 1997
IG-0405	Audit of the Savannah River Site's Quality Control Program for Groundwater Sampling	May 20, 1997
IG-0407	Audit of the Department of Energy's Scientific and Technical Information Process	June 17, 1997
IG-0408	Audit of Shutdown and Transition of the Mound Plant	June 24, 1997
IG-0409	Audit of the Western Area Power Administration's Contract With Basin Electric Power Cooperative	June 25, 1997
IG-0410	Audit of Environmental Restoration at the Los Alamos National Laboratory	July 15, 1997
IG-0411	Audit of the Contractor Incentive Programs at the Rocky Flats Environmental Technology Site	August 13, 1997

Office of Inspector General
Fiscal Year 1997 Audit Reports

Report Number	Report Title	Date Report Issued
CR-B-97-01	Audit of the Department of Energy's Warehouse Space	January 28, 1997
CR-B-97-02	Audit of Department of Energy's Contractor Salary Increase Fund	April 4, 1997
CR-B-97-03	Followup Audit on the Procurement of Support Services for the Energy Information Administration	May 16, 1997
CR-B-97-04	Audit of Controls Over the ADP Support Services Contract	August 25, 1997
ER-B-97-01	Audit of Economic Development Grants and a Cooperative Agreement With East Tennessee Not-for-Profit Organizations	October 22, 1996
ER-B-97-02	Audit of the Department of Energy's Grant for Economic Development at the Mound Plant	February 14, 1997
ER-B-97-03	Audit of Proposal to Acquire Land at the Fernald Environmental Management Project	June 5, 1997
ER-B-97-04	Audit of Selected Hazardous Waste Remedial Actions Program Costs	August 11, 1997
WR-B-97-01	Audit of Electrical System Construction Projects at the Nevada Operations Office	November 6, 1996
WR-B-97-02	Audit of Bus Service Subsidies at the Idaho National Engineering Laboratory	November 7, 1996
WR-B-97-03	Audit of Groundwater Monitoring at Hanford	November 15, 1996

Office of Inspector General
Fiscal Year 1997 Audit Reports

Report Number	Report Title	Date Report Issued
WR-B-97-04	Audit of the Use of Hanford Site Railroad System	March 20, 1997
WR-B-97-05	Audit of Work Force Restructuring Under Section 3161 of the National Defense Authorization Act	May 6, 1997
WR-B-97-06	Audit of Renovation and New Construction Projects at Lawrence Livermore National Laboratory	June 9, 1997
WR-B-97-07	Audit of Desktop Computer Acquisitions at the Idaho National Engineering and Environmental Laboratory	August 25, 1997

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

REPORT OF THE OFFICE OF INSPECTOR GENERAL ON COMPLIANCE WITH LAWS AND REGULATIONS

The Secretary
U.S. Department of Energy

We audited the consolidated financial statements of the U.S. Department of Energy (Department) for the year ended September 30, 1997, and have issued our report thereon dated December 29, 1997, except for Note 13, as to which the date is January 30, 1998, and Note 16, as to which the date is February 19, 1998.

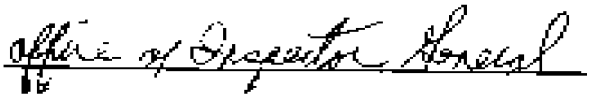
We conducted our audit in accordance with generally accepted auditing standards; the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States; and Office of Management and Budget (OMB) Bulletin No. 93-06, *Audit Requirements for Federal Financial Statements*, as amended. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatements. Providing an opinion on compliance with certain provisions of laws and regulations was not an objective of our audit, and accordingly, we do not express such an opinion.

The management of the Department is responsible for complying with applicable laws and regulations. As part of obtaining reasonable assurance about whether the consolidated financial statements were free of material misstatements, we performed tests of its 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 other laws and regulations specified in OMB Bulletin No. 93-06, as amended, including the requirements referred to in the Federal Financial Management Improvement Act (FFMIA) of 1996.

The results of our tests of compliance with the laws and regulations described in the preceding paragraph disclosed no instances of noncompliance required to be reported under *Government Auditing Standards* and OMB Bulletin No. 93-06, as amended.

Under FFMIA, we are required to report whether the Department's financial management systems substantially comply with the Federal financial management systems requirements, applicable accounting standards, and the United States Standard General Ledger at the transaction level. To meet this requirement we performed tests of compliance using the implementation guidance for FFMIA issued by OMB on September 9, 1997. The results of our tests disclosed no instances where the Department's financial management systems did not substantially comply with the three requirements discussed in the preceding paragraph.

This report is intended for the information of the U.S. Department of Energy. However, this report is a matter of public record, and its distribution is not limited.



December 29, 1997, except for Note 13, as to which the date is January 30, 1998, and Note 16, as to which the date is February 19, 1998.

Federal Managers' Financial Integrity Act Report

Executive Summary

Introduction

The Department of Energy serves the Nation by helping to provide for a more secure and sustainable energy future, supporting national defense, improving our environmental quality, and advancing American science and technology. In keeping with the Administration's commitments, we are focused on accomplishing these missions in a manner that provides the best, most cost-effective service possible for the American people.

The Department is accomplishing its mission within the constraints of the budgetary resources and programmatic changes mandated by Congress. We have undergone the difficult task of downsizing our work force through office consolidations, business process reengineering, and elimination of nonessential activities. We are building on past successes and improving our management as we move forward. As emphasized in our prior two reports, it is important to maintain an environment conducive to a strong system of management controls in these times of change. Standards for management controls established by the Comptroller General indicate a relationship between the control environment and organizational stability, employee knowledge level, and adequacy of both supervision and oversight activities. Evaluation of our management controls against those standards suggest that we be alert to potential deficiencies. The Department is facing a rapidly changing mission and organization, a loss of in-house expertise and supervision due to the departures of senior managers, and significant budget and staffing reductions that have adversely affected employee morale. This requires us to be ever cognizant of the need to mitigate the effect the adversities we are facing may have on the soundness of our management controls.

Background

The objective of the Federal Managers' Financial Integrity Act of 1982 (Act), as implemented by the Office of Management and Budget, is to create a process whereby managers and employees may freely identify for the President, Congress, and ultimately the public, areas of vulnerability in the operations of Government and, as a consequence, ensure that appropriate attention is given to ameliorating problems that may affect the wise expenditure of the taxpayers' money. To be successful, the process must rely on a climate of open and honest dialogue about the nature and extent of our problems, as well as a realistic assessment as to the potential for and means of their cure.

In accordance with the Act, the Department has completed the required evaluations of its management controls in effect during the fiscal year ended September 30, 1997. Our evaluations included an assessment of whether the management controls of the Department were in compliance with the standards prescribed by the Comptroller General. The purpose of these evaluations was to provide reasonable assurance that the management controls were working effectively, that program and administrative functions were performed in an economical and efficient manner consistent with applicable laws, and that assets were safeguarded against the potential for waste, fraud, abuse or mismanagement.

SUMMARY OF REPORTABLE PROBLEMS

Our management control evaluations disclosed nine reportable problems. This reflects the closure of the problem at our Strategic Petroleum Reserve we have reported in past years. In addition, this year we have separated the previously reported contract/project management problem into two problems--contract management and project management. In addition to the nine reportable problems, we have identified three issues that are emerging as potential problems in the future.

Following is a description of our reportable problems and the emerging issues we have identified, as well as our ongoing efforts to correct them.

Environmental Compliance

The Department continues to face significant long-term environmental compliance and waste management problems at its facilities. Many of these problems are the result of activities conducted under less stringent standards than today's. Recent developments related to groundwater contamination at Brookhaven National Laboratory and Hanford have highlighted the need for firm action to address these environmental compliance issues and the public concerns that may arise. Circumstances dictate that immediate attention be given to evaluating and correcting the impacts of past practices and characterizing and minimizing the possible adverse impacts of present and future activities.

Paramount to the resolution of these problems is the development of realistic schedules and resource requirements needed to bring DOE facilities into compliance with Federal and State requirements, remediate contaminated sites, and safely dispose of radioactive waste. Actions taken to address specific problems have included the cleanup of 10 geographic sites in fiscal year 1997, bringing the total number completed to 60 of the 133 sites currently included in the Environmental Management program. A Programmatic Environmental Impact Statement was issued in 1997 to provide a framework for implementing the waste management program. The Department is currently implementing a new vision designed to accelerate the cleanup of a significant number of the remaining sites by 2006. The 2006 Plan vision calls for reducing the overall life-cycle costs of cleanup while maintaining the Department's commitment to be in full compliance with all applicable environmental and legal requirements. To address the groundwater problem, the Under Secretary is undertaking an initiative to provide an integrated assessment of the scientific methods used to study groundwater contamination and the methods used to define site priorities and programs. Also, the DOE Action Plan for Improved Management at Brookhaven National Laboratory was developed to ensure that noted deficiencies are corrected.

Many of the Department's compliance agreements with states were originally negotiated when the production of nuclear weapons was a key mission and the availability of environmental management data to make informed decisions was minimal. Consequently, the deadlines and expectations of the original agreements were not realistic and have required renegotiations. The Department's renegotiations with states required consideration of Federal budget constraints and were vital to bringing facilities into compliance with environmental requirements. The Department has completed negotiations with 34 of the 35 sites where DOE generates or stores

mixed waste. Completed renegotiations have resulted in corrective action plans that are linked to funding availability and identify short-term and long-term commitments. A site treatment plan for the one remaining site has been developed and a schedule of negotiations to finalize the agreement is being established by the regulating agency.

The Department's efforts are focused on finding methods to remediate environmental problems cheaper and faster, through the new accelerated approach being identified in the year 2006 Plan. However, the final resolution of these problems is both long-term and costly. The Department is committed to achieving compliance with all applicable environmental requirements and bringing waste sites and facilities into regulatory compliance.

Safety and Health

Comprehensive reviews performed by the Department's line managers have disclosed nuclear and occupational safety and health deficiencies that impair our ability to ensure the health and welfare of both workers and the public. These deficiencies include: outdated nuclear safety standards; vulnerabilities in the safe storage of spent nuclear fuel and other materials; nonconformance with basic Occupational Safety and Health Administration standards; vulnerabilities in the Department's bioassay program; and a lack of compliance with Conduct of Operations requirements at the Department's facilities.

The Department has taken a number of steps to address these inadequacies. A rolling five- year plan was published which identifies resources and priorities for safety and health improvements on an ongoing basis. Nuclear safety standards are being upgraded and oversight evaluations are being conducted to ensure adequate implementation of conduct of operations requirements related to safety and health functional areas. Currently the Department has completed 395 of the proposed 526 corrective actions identified by the Spent Fuel Working Group that assessed the safety of our storage practices for spent nuclear fuel and other materials. Also, seven oversight evaluations were conducted in FY 1997 including the integrated safety management evaluation at the Brookhaven National Laboratory. An Enhanced Work Planning initiative is being implemented, which encourages management and workers to cooperatively plan work activities encompassing all aspects of work performance, including worker safety and health and Occupational Safety and Health requirements. This is a move toward integrating worker safety at the work planning level.

The correction and reduction of the number and severity of safety and health deficiencies will be evaluated through the performance of internal and external assessments. The Department will continue its efforts to implement the safety and health upgrades and in turn restore public confidence in our ability to safely operate our facilities.

Nuclear Waste Storage and Disposal

The Department's schedule for permanent disposal of spent nuclear fuel, high-level and transuranic radioactive waste generated by individual nuclear utilities and the weapons complex experienced delays resulting from local opposition and related litigation and previous funding shortfalls. The Department aggressively pursued these problems through multiple initiatives.

The opening of Waste Isolation Pilot Plant (WIPP) for defense-generated transuranic radioactive waste requires the Department to demonstrate completion of legislative prerequisites and compliance with regulations. In 1996, the WIPP Land Withdrawal Act was amended with streamlining provisions that communicated the sense of Congress that DOE should begin disposal operations at WIPP as early as November 1997, provided that all prerequisites are complete. Since enactment of the WIPP Land Withdrawal Amendment Act, the Department has based its plan on opening WIPP in November 1997. However, a six-month delay in the opening date for WIPP from November 1997 to May 1998 has occurred. The revised opening date reflects: (1) the EPA schedule for reviewing and evaluating the Department's application and completing the rulemaking by April 1998; and (2) the State of New Mexico's expected schedule for issuing its final permit.

In accordance with Congressional direction, resources are being focused on core scientific studies that will resolve the remaining major technical questions about geologic disposal of spent nuclear fuel at Yucca Mountain, Nevada. In 1997, the Department completed excavation of the main loop of the underground Exploratory Studies Facility on schedule. The Exploratory Studies Facility and the seven associated test alcoves offer scientists direct access to key geologic features of the host rock and allow them to conduct scientific experiments that will yield data required to resolve the remaining technical questions. In accordance with Congressional direction, the Department is focusing its efforts on completion of a site viability assessment in 1998.

In 1997, a coalition of State agencies and nuclear utilities sued the Department as a result of its earlier announcement that it anticipates it will be unable to begin accepting spent nuclear fuel for disposal by January 31, 1998. The court held that DOE may not excuse its delay in accepting spent nuclear fuel as unavoidable on the grounds that neither a permanent repository nor an interim storage facility is operational. The Department is studying the Court's decision.

The Department will continue to pursue the goals of permanent and safe storage and disposal of the Nation's nuclear waste within its funding limitations and Congressional direction.

Contract Management

The Department is seeking to reform its contracting practices, which were largely unchanged for more than 50 years until the Department's contract reform initiative. The weaknesses in DOE's contracting practices were substantial and required major changes in such areas as contractor performance and accountability and oversight of contractor pension funds. To address these weaknesses, a contract reform team conducted a comprehensive review of contract management and recommended 48 specific actions dealing with such issues as increasing competition and contractor financial responsibility; improving environmental, safety, and health programs; and using better-defined statements of contractor performance expectations. The Department has now implemented many of these recommendations by taking actions that have resulted in improved standards for evaluating contractors' performance, increased contractor accountability, and routine review of contractors' pension plans.

A key aspect of the Department's contract improvement initiative was a new form of management and operating contract--the performance-based management contract. The fundamental component of this new approach was the use of performance-based contracting concepts, which emphasized more definitive statements of work, specific performance objectives and measures,

and linkage to appropriate performance incentives. However, recent audit reports and internal evaluations have highlighted problems in the development and use of performance measures and performance-based incentives in determining contractor fees. As a result, the Department conducted a comprehensive review of performance-based incentives. While this review indicated that the changes have been a positive influence in focusing contractor attention on critical technical performance, it also identified systemic problems. Based on the results of the analysis, the Deputy Secretary outlined specific tasks to further improve the Department's contract management practices including development of directives, a manual and training on the proper use of performance-based contracting and incentive fees.

In fiscal year 1997, as part of the ongoing effort in contract reform, the Department embarked on a "management and integration" procurement at Oak Ridge. The purpose of this procurement was to focus the prime contract solely on managing the work and then relying on "best in class" subcontractors, through the management and integration contractor, to execute the work. The management and integration contract was awarded in December 1997.
Another ongoing contract reform initiative is to decrease the Department's reliance on management and operating contractors and to privatize some functions by utilizing fixed-fee contracts and reaching out to a broader spectrum of the private sector than was done in the past. Privatization efforts are underway in the Department's Office of Environmental Management where it is viewed as an important means of improving technical and schedule performance and reducing costs of some major cleanup projects. While to date, the largest effort in privatization has been undertaken in the environmental management arena, other parts of the Department are beginning to explore the privatization approach. As we move forward, we are addressing the new challenges our privatization initiative brings. These include strengthening training programs for DOE staff involved in privatization initiatives; enhancing DOE cost estimating capabilities for privatization projects; and expanding and supplementing DOE expertise in reviewing privatization contract solicitations and contracts. In addition, we are committed to increasing our accountability to Congress for our privatization contracts.

In another area of contract management, the Inspector General recently identified deficiencies in the Department's controls over the use of management and operating contractor personnel to perform support service functions. The Department has taken aggressive action to correct this deficiency. Departmental policy has been issued concerning the proper use of such employees; a baseline was established and is being refined; and a requirement has been established that all assignments of management and operating contractor personnel to perform support service type activities must be approved by the Assistant Secretary for Human Resources and Administration.

Project Management

In the past, it was reported that the Department lacked discipline and structure in controlling program and baseline changes to projects and needed a Department-wide approach to certify project managers at predetermined skill levels to ensure competent management oversight of our resources. In addition, the Department needed stronger policies and controls to ensure that the need for construction projects is reevaluated frequently in light of our changing missions. While the Department has taken aggressive actions to address these past problems, confidence in our ability to effectively build new facilities or upgrade existing systems has been adversely affected by recently reported cost overruns, schedule slippages, and other project management problems. For example, a number of construction projects, such as the Chemistry and Metallurgy Research

Facilities Upgrade Project at the Los Alamos National Laboratory are experiencing cost, schedule, and technical performance problems. These issues, which have been disclosed through internal assessments and Inspector General reports, are being addressed. However, they have led to Congressional concern over the adequacy of the Department's construction project management structure and practices.

The Department is addressing these problems through improved policies and assessments. Specifically, certain improvements have been made to policies and procedures that should enable the Department to provide better oversight over contractor costs and schedules. A formal change control process and project manager certification program have been implemented. A new approach used in project management includes a process for annual evaluation of the need for construction projects currently planned or ongoing. New policy was issued that outlines a performance-based approach to project management. An evaluation is underway to assess the effectiveness of this approach. More than 30 "good practice guides" for asset management derived from industry practices have been issued. Root cause reviews are being performed at larger projects such as the Chemistry and Metallurgy Research Facilities Upgrade Project. Several ongoing or recently completed studies have addressed aspects of these problems and more studies are planned.

During fiscal year 1998, additional studies are planned to examine specific aspects of our defense-funded construction projects including overall project performance in recent years; organizational management structure, process and procedures; and personnel resources. These studies will focus on Headquarters but will also include some Field management activities. Also, the ongoing evaluation to assess the effectiveness of Department-wide policy and procedural changes will be completed. In addition, in accordance with Congressional direction, the Department is procuring services for independent assessments of ongoing and planned projects as well as construction planning and management practices.

Surplus Inventory and Facility Management

The Department has extensive inventories of nuclear and nonnuclear materials, personal property, land, and facilities that are no longer necessary due to the end of the Cold War or related Departmental mission changes. The Department could save storage, security, maintenance and handling costs associated with these assets. In the case of weapons-usable fissile materials, a danger exists, not only in the potential global proliferation of nuclear weapons, but also in the potential for environmental, safety and health consequences if surplus fissile materials are not properly managed. The Department needs to verify required inventory levels and ensure proper storage and disposition of excess nuclear materials throughout the complex. In addition, the Department must ensure materials inventory systems, such as the International Nuclear Analysis, provide information needed by customers.

The Department continues to focus on the mission of reducing surplus nuclear and nonnuclear materials and assets through various initiatives and priority actions. The Office of Fissile Materials Disposition remains in the forefront of defining and implementing a path forward for the safe, secure, environmentally sound storage of all weapons usable fissile materials and disposal of surplus fissile materials. In 1996, the Department decided in a Record of Decision to dispose of surplus highly enriched uranium by blending it down to a level sufficient for sale and commercial use. In a 1997 Record of Decision, the Department decided to reduce the number of sites where

plutonium is stored and to implement a hybrid strategy for disposing of surplus plutonium by pursuing both immobilization in glass or ceramic form and burning as mixed oxide fuel in existing, domestic commercial reactors. Site-specific analyses necessary to enable selections of sites(s) for surplus plutonium disposition are underway and will support a Record of Decision in late 1998. These efforts will result in the flexibility to implement plutonium disposition in a manner that encourages reciprocal action abroad. Plans are also in place to transfer 50 metric tons of surplus Highly Enriched Uranium to the United States Enrichment Corporation over a six-year period beginning in FY 1998.

Other Departmental initiatives focus on nuclear and nonnuclear materials that no longer have clearly defined or immediate uses. The Baseline Asset Inventory Initiative, a corporate-level assessment of the Department's excess physical nonnuclear assets including lands, facilities, and materials, assessed available disposition options and highlighted actions necessary to combat the Department's increasing custodial liability. The Department has also introduced a Materials and Assets Management and Disposition Steering Committee to facilitate the aligning of assets and materials with current and future missions, reduce management costs, designate excess assets including surplus facilities for sale, and promote environmental goals through innovative reclamation and recycling initiatives. This program also encompasses the Department's inactive facilities including those not yet scheduled for environmental remediation. In addition, the sale of excess nonnuclear materials continues to take place with total sales expected to reach $75 million over four years.

Inadequate Audit Coverage

There are deficiencies in the audit coverage of the management and operating contractors, as well as non-management and operating contractors, which perform many of the major functions integral to the Department's mission. As a result of this inadequate audit coverage, the Department lacks full adequate assurance that its contractors are only being reimbursed for costs that are reasonable and allowable.

The Department has undertaken actions to improve the overall audit coverage that includes prioritizing management and operating (M&O) audits, pursuing funding reallocations, and expediting requests for and performance of audits by cognizant audit agencies responsible for auditing non-M&O contractors. An audit strategy that places more reliance on major contractors' internal audit staffs has been implemented under the oversight of a steering committee. During 1997, the Inspector General completed annual assessments of selected contractors and found all the internal audit functions to be acceptable.

Also, in 1997, the Office of Inspector General re-evaluated the audit needs of the Department and concluded that staffing and resource limitations would hinder audit efforts into the foreseeable future. The Government Management Reform Act of 1994, a major unfunded mandate, drains a significant portion of auditing manpower and consequently allows less time to conduct performance and other financial audits of the Department's programs, activities and operations. However, the Department remains committed to providing adequate audit coverage to ensure that our facilities are operating properly and effectively.

Infrastructure

Due to decades of deferred maintenance and upgrades, much of the Department's infrastructure is in poor condition. This infrastructure consists of buildings, roads, utilities, and other facilities that are vital to the operations of the Department. Unsafe conditions, lost-time delays, and more frequent and costly maintenance have resulted from deferring maintenance at our aging facilities.

The Department has initiated a long-range strategy for acquisition, maintenance, modernization, and eventual disposal of its infrastructure. This includes revising the capital asset management process to increase awareness of the long-term cost of ownership and require life cycle analysis of the existing plant. A condition assessment survey process is being used to determine the extent of deficiencies and the amount of infrastructure that needs replacement. The Department issued revised guidance for capital asset management and facilities upgrades and maintenance. Performance agreements between Headquarters and the Field are in place to plan, track, and analyze trends for maintenance activities. The Department deployed a Functional Cost Reporting System, which will include maintenance data at a summary level from the Field. Upon acceptance and final revisions, this action will be complete. The Department envisions a safe, modern, efficient energy complex as a result of implementation of planned corrective actions.

Property Controls

Inadequate control over Government personal property by the Department's management and operating contractors has been identified as a deficiency at some of the Department's facilities. This property includes nuclear-related technology equipment, vehicles, construction equipment, computers, tools, and other items. The deficiencies identified include missing property, risk of unauthorized use, and improper disposal. These problems have resulted from inadequate policies and procedures as well as lack of adequate attention to contractor personal property management systems.

To remedy this situation, steps are being taken to strengthen Departmental policies and provide increased emphasis on property management by contractors. The Department's property management policies are being revised to include extensive coverage of high risk property and address critical problems identified by audits and investigations. The proposed rule (revision) was published in the Federal Register and issuance of the final rule is expected by March 1998. Personal Property Systems Reviews have been replaced with a Value Based Self-Assessment Process for contractors to assess their systems and identify needed improvements. The only significant remaining action is to issue the final rule which will formally revise the Department's policies.

EMERGING ISSUES

In addition to the above reportable problems, our management control evaluations identified three issues that are emerging as potential problems. We are taking actions to address these issues and prevent them from becoming future reportable problems. Last year we reported an emerging issue regarding insufficient funding for security clearance investigations. I am pleased to report

that the funding issue was resolved in our 1998 appropriation and we are not reporting this as a problem.

National Security

Security concerns in the Department are focused in two primary areas: counterintelligence and physical safeguards. These areas of concern were identified in internal and external reviews and have been the subject of adverse news coverage.

Counterintelligence. The counterintelligence concern results from the large and increasing number of foreign nationals visiting the Department's laboratories and the potential for compromise of classified information or other sensitive or proprietary information. The Department's laboratories have desirable assets, in the form of classified information, as well as unclassified but sensitive information, and access by foreign nationals, even for a short time, can provide the opportunity to identify and target laboratory information. In addition, repeated and long-term contact between laboratory personnel and foreign nationals can create relationships that foreign countries can use to extract information. Additionally, the threat has become more complex because information and cutting edge technology of economic benefit is of great importance to all countries; consequently, there is the risk of economic espionage by enemies and allies alike. The Department recognizes that there are inadequacies in the counterintelligence program and has taken steps to strengthen it. At the direction of the Under Secretary, a plan was prepared to develop (1) training in export control and technology; (2) new guidance on sensitive subject matters; (3) laboratory threat assessments of their foreign visitors and assignments program; and (4) a comprehensive threat assessment of foreign visitors and their assignments programs. In addition, Congress appropriated an additional $5 million for counterintelligence support in 1998.

Physical Safeguards. Concerns with the Department's physical safeguards focus on the deterioration of our security posture in key areas. The key areas affected include protective force staffing, readiness exercises and training, physical security upgrades, security technology applications and construction of special nuclear material storage facilities. Factors driving deterioration of the Department's security have been cited as: fewer security officers; less able personnel; poor oversight and budgeting; and aging facilities. These factors are the subject of ongoing discussions within the Department regarding the appropriate level of funding for safeguards activities. As a result of the safeguard and security issues, the Deputy Secretary's office is chairing a Safeguard and Security Council with representation at the Assistant Secretary level. The Deputy Secretary has also commissioned a review of all sites' safeguards and security programs. This review would be led by technical experts from the Sandia National Laboratory and is scheduled to be complete in fiscal year 1998. In response to concerns regarding the Department's program, Congress has directed us to establish the Energy Security Management Board to perform assessments of security throughout the nuclear-weapons complex and issue annual reports and policy guidance to the President and Congress. The Department will continue to monitor the program throughout FY 1998.

Declining Oil Import Protection

The United States is bound by treaty to maintain strategic inventories of petroleum, either Government or privately held, equivalent to 90 days of net imports. In direct response to the

OPEC oil embargo of 1973-74, the creation of a Strategic Petroleum Reserve of up to one billion barrels of oil was authorized, and since then we have built 750 million barrels of storage capacity and acquired as much as 592 million barrels of oil. It is the only contingency program, outside of military response, that the United States has available to respond to international energy supply disruptions.

In 1985, the Reserve provided 118 days of import protection. However, since that time imports have risen, no oil purchases have occurred for the Reserve since 1994, and as part of budget-balancing efforts, Congress has directed us to sell oil in each of fiscal years 1996-1998. At the end of 1996, the inventory of the Reserve equated to only 67 days of imports, and that measure is projected to keep falling as imports increase and oil sales from the Reserve occur. Moreover, the protection afforded by private industry inventories is declining. As calculated by the International Energy Agency, the United States has 85 days of private inventories that may be counted toward its obligations. While still substantial, inventories have trended down since 1981, culminating in a very large drop in 1995 of 100 million barrels, equal to about 10 percent of total private inventories. These reductions have occurred as demand has risen by 2.5 million barrels per day over the same period. The result is that the number of days of coverage provided by private inventories has dropped significantly.

The continuing decline in the number of days of net imports held in the Reserve could jeopardize our national energy security and the U.S.'s ability to meet its treaty obligations. While the U.S. can rely on privately held stocks to satisfy its treaty obligation, the Reserve is the only direct deterrent to politically motivated disruptions. U.S. international leadership in this area, and the deterrent effect of the Reserve depend upon our maintaining the Reserve of Government-held stocks at the 90-day net import level.

Workforce Realignment

Staffing deployment remains a significant challenge at the Department of Energy due to budget constraints. In recent years, the Department lost a significant number of staff resulting from budget induced reductions in force, buyouts, the need to comply with mandated hiring freezes, and other attrition in critical program areas. Collectively, these created a need to redeploy staff, realign functions, retrain employees, and take other actions to maintain a viable, highly skilled workforce. While we are confident that we can operate within available resource limitations, there are problems with service in the context of this downsizing. In response, the Department will authorize critical hiring, redeploy employees, and retrain existing staff where necessary. These actions coupled with the existing management systems to support staffing decisions should help to alleviate workforce realignment issues in the future.

SUMMARY OF PRIOR REPORTABLE PROBLEM

In the past, the Department identified a reportable problem related to the Strategic Petroleum Reserve. As a result of corrective actions taken, this problem is no longer considered reportable. Specific actions taken to resolve it are discussed below.

Strategic Petroleum Reserve

During the 1992-1995 time frame, internal evaluations identified conditions at some of the Department's Strategic Petroleum Reserve storage facilities that impacted the Department's ability to safely store and drawdown oil over the long term. Geotechnical problems included surface water intrusion into the Weeks Island Mine and higher than normal gas content and elevated temperatures at the Bayou Choctaw, Big Hill, Bryan Mound, and West Hackberry storage caverns. The Weeks Island problem posed risks to the structural integrity of the mine in which the oil was stored. Problems with higher than normal gas in the stored oil and the elevated temperatures reduced near-term oil drawdown capability.

The Department undertook multiple initiatives to address these problems and restore full drawdown capability. After exhaustive geotechnical investigations, the Department decided to relocate the Weeks Island crude oil inventory to the Bayou Choctaw and Big Hill storage sites and decommission the Weeks Island Mine. In the process of making this decision, the Department performed an environmental review pursuant to the National Environmental Policy Act with two public meetings for enhanced public participation. In December 1995, the Department published an Environmental Assessment and issued a Finding of No Significant Impact. The mine was stabilized with a freeze wall and brine injection to control groundwater inflow and the crude oil inventory relocation was essentially completed by the end of October 1996. In November 1996, the Department commenced filling the mine with brine to assure geological stability. As of the end of FY 1997, 33.2 million barrels of brine had been introduced into the oil storage chamber and initial oil skimming operations recovered 1.75 million barrels of residual oil. In August 1997, the contract for removal of surface and subsurface facilities was awarded and work is proceeding along with follow-on residual oil skimming operations.

The Department performed comprehensive analyses to determine the volume of oil requiring treatment at each site affected by excess gas and elevated temperature. The Department ensured that degasification operations were safe and developed criteria for the eventuality of an emergency drawdown occurring during degasification. In order to reduce the elevated temperatures affecting the Reserve's crude oil inventory, heat exchangers have been installed at three sites and the exchangers for Big Hill are planned to be mechanically operational by April 1998.

Oil degasification was completed at West Hackberry and Bayou Choctaw during FY 1996 and at Bryan Mound in December 1997. As a result of degasification operations, the inventory availability for normal drawdown has been increased to 555 million barrels, 99 percent of the total inventory, at an initial drawdown rate of 3.7 million barrels per day.

The Department is confident that the Strategic Petroleum Reserve is operationally capable of continuing long-term operations in a reliable, safe, and environmentally sound manner. As a result of these significant actions to improve the Department's ability to safely store and drawdown oil, Strategic Petroleum Reserve is no longer considered a reportable problem.

OVERALL RESULTS OF EVALUATIONS

The results of the management control evaluations conducted to date, assurances given by senior officials, and other information such as independent audit reports and self-assessments, indicate

that the system of management controls of the Department of Energy in effect during the year ended September 30, 1997, taken as a whole, provides reasonable assurance that the management control objectives were achieved except for the reportable problems identified in this report. The concept of reasonable assurance recognizes that management controls must be cost effective and that some potential for undetected errors or irregularities always exists.

Additionally, as required by Section 4 of the Federal Managers' Financial Integrity Act, an evaluation of the Department's Financial Management System was conducted. The evaluation was made in accordance with guidance issued by the Office of Management and Budget. The objective was to determine the overall conformance of the Department's Financial Management System with the principles and standards prescribed by the Comptroller General and the Office of Management and Budget Circular A-127, "Financial Management Systems," requirements. The evaluation included a review of last year's evaluation and related corrective actions and a review performed by system managers of all components of the Department's Financial Management System. The results of this evaluation and assurances provided by system managers indicate that the Department's Financial Management System is in general conformance with the prescribed requirements, except for the reportable nonconformance discussed below.

SUMMARY OF REPORTABLE NONCONFORMANCE

Our financial management systems evaluations disclosed a reportable nonconformance. The following describes the nonconformance and our ongoing efforts to correct it.

Financial Management Systems Improvements

Recommendations from a GAO report, the Department's Contract Reform initiative, and the National Performance Review indicated that current Departmental information systems do not provide the kinds of financial information needed to manage contractors and programs effectively. Departmental financial management systems are outdated and must be upgraded to capture and produce financial information required to measure program and financial management performance. In order to address identified deficiencies, the Department has established a separate Corporate Systems group within the Office of the Chief Financial Officer to plan and support current and future financial system requirements and has initiated efforts to implement an Executive Information System (EIS). Actions taken during FY 1997 to implement an EIS included interviewing and surveying customers and stakeholders to determine key information data elements, designing an EIS prototype system, and implementing the EIS Pilot system for Headquarters and Field Office staff utilization. Further expansions to the EIS capabilities will be conducted during FY 1998. The Department has also developed a Financial Data Warehouse to address customer needs for obligation and cost data and established a Functional Cost Reporting System to provide managers with information on contractor support costs and assist in assessing contractor progress in managing support costs.

STATUS OF YEAR 2000 ACTIONS

Although not a reportable problem or financial system nonconformance for the Department, the impact of the year 2000 on federal information systems is an important issue government-wide. For this reason, we are providing you with the status of our actions to address the impact of the year 2000 on the Department's information systems. In addressing this issue, we have established critical milestones reflecting government-wide requirements that encompass the more than 440 mission-essential systems the Department maintains.

In October 1997, the Department completed the milestone for assessing the situation by identifying systems and establishing plans for achieving compliance with year 2000 requirements. In addition, we have established the following Departmental completion dates: renovation of the existing computer code to accommodate the year 2000 by September 1998; validation of the new computer code by February 1999; and implementation by March 1999. The Department's current estimate to obtain year 2000 compliance is $130.1 million.

Additionally, our November progress report to OMB indicated the Department had completed renovation for 13 percent of the systems being modified. OMB informed us that the Department was in the bottom five of all agencies. To reverse this trend, the year 2000 issue is being closely monitored by the Department's Executive Committee for Information Management. The Deputy Secretary chairs this committee and members include senior information management and program officials from across the Department. As a further check and balance, the issue is being monitored by the Departmental Internal Control and Audit Resolution Council which includes selected senior managers, including the Inspector General.

We are moving ahead in our efforts to address the impact of the year 2000 in the Department's information systems and expect successful completion of our actions.

U.S. Department of Energy

Reader Response Sheet
Annual Report for FY 1997

The Chief Financial Officer is interested in the comments and suggestions of those who read this document. Please take a few minutes to complete this sheet and send it to the following address:

Office of Financial Control and Reporting
Department of Energy
19901 Germantown Road, Room E-155, CR-40
Germantown, MD 20874-1290

Comments may also be faxed to the Office on (301) 903-5202.

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In the next report, what would you like to see added or changed?

Do you have any other comments, suggestions, or corrections?

Please provide us with your name, title, and phone number (optional).

Date of response: