DOE/ME-0039

Department of Energy
FY 2005 Congressional Budget Request

Budget Highlights

Office of Management, Budget and Evaluation/CFO

February 2004

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INTRODUCTION

Three years ago, the Administration charted a course to focus the management and resources of the Department of Energy on four key mission areas: protecting our national security, energy security, and our environment, and providing a world-class scientific research capacity. Each budget thereafter has proposed increased funding in support of these goals. At $24.3 billion, the FY 2005 budget is the largest investment thus far and will help bring fulfillment of this Administration's commitments closer than ever before.

This budget includes substantial increases to hasten the cleanup of the Cold War environmental legacy, construct a permanent nuclear waste repository at Yucca Mountain, deliver nuclear-related defense requirements, provide for energy security, and promote basic science research to ensure the Nation's technological advancement into the future. Finally, this budget honors our commitment to the individuals who served the Nation as part of the Cold War nuclear weapons complex. The budget includes $43 million to accelerate the processing of compensation claims to enable resolution for those workers, or their survivors, who may have become ill as a result of this work.

The Department of Energy in the last three years has been re-energized with the Administration's commitment to basic policy principles, better management in government, and recognition of the importance of scientific discovery. Science is at the core of the Department of Energy's mission and its scientists and engineers from all disciplines creates and inspires dynamic discoveries that change our way of life. Complementing support for scientific discovery, the Department has fully embraced the President's Management Agenda – emphasizing performance, aligning resources directly to mission priorities, and integrating these objectives into the management of human capital. This synergy has sharpened the focus of the Department of Energy, allowing us to draw closer to dramatic achievements of real importance to the everyday lives of Americans.

SETTING PRIORITIES

Three years ago, DOE programs existed out of context with one another, making it difficult to define DOE's core mission. The priorities became clear shortly after Secretary Abraham arrived. He defined the Department's primary mission and established a series of programmatic objectives in national security, energy, environmental quality, science, and corporate management. From these the Department's Strategic Plan was developed, setting in place a long-range programmatic vision. To orient the Department to results and performance, the long-range planning goals and targets have been articulated into shorter-term performance goals, objectives, and metrics that are reflected throughout the FY 2005 detailed budget justifications.

The FY 2005 budget request of $24.3 billion is formulated to meet four broad programmatic goals and objectives in corporate management:

Defense

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

The FY 2005 budget proposes $9.0 billion to meet defense-related objectives. The budget request maintains commitments to the nuclear deterrence requirements of the Administration's Nuclear Posture Review and continues to fund an aggressive strategy to mitigate the threat of weapons of mass destruction.

Energy

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

The FY 2005 budget requests $2.5 billion to meet energy-related objectives. The budget request maintains Presidential commitments to promote energy security and reliability through increases in coal research and development, hydrogen production and fuel cell- powered vehicles, advanced nuclear energy technologies, and electric transmission reliability.

Science

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

The FY 2005 budget seeks $3.4 billion to meet objectives in basic science. The budget request continues the Administration's commitment to the Nation's scientific strength by maintaining essential facility operations and support for research in the exciting fields of genomics, scientific supercomputing, fusion energy, and nanoscience.

Environment

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

The FY 2005 budget requests $8.6 billion to meet environmental-related objectives. The budget request includes significant increases, fulfilling commitments to accelerate environmental cleanup, maintain the schedule to establish a permanent geologic nuclear waste repository by 2010, and accelerate assistance to employees of the Cold War nuclear weapons complex who may have been harmed by their work.

Corporate Management

The critical corporate responsibilities and functions which directly support the mission of the Department include national energy, environmental, health and safety activities, development of Departmental policies, and required legal, financial and administrative services. The FY 2005 budget requests $824 million for activities related to Corporate Management. The budget request reflects efforts to reform Departmental operations through the President's Management Agenda, by consolidating the provision of essential services, and improving information management systems managed by the Chief Information Officer.

MEETING NATIONAL SECURITY CHALLENGES

The Department's defense nuclear security responsibility is carried out by DOE's **National Nuclear Security Administration** (NNSA). NNSA maintains the safety, security, reliability, and effectiveness of the Nation's nuclear weapons stockpile; prevents the spread of weapons of mass destruction; and provides the U.S. Navy with safe, effective nuclear propulsion plants. This budget requests $9.0 billion in FY 2005 to support NNSA's mission.

NNSA is also in the final implementation phase of a re-engineering effort that follows the principles of the President's Management Agenda to modernize, integrate, and streamline operations. As a result, at the end of FY 2004, NNSA will achieve its goal of a 15 percent reduction in federal personnel since FY 2002.

The **Nuclear Posture Review (NPR)**, issued by the Administration in January 2002, guides the weapons activities budget requested for NNSA. The NPR requires NNSA to maintain the safety and reliability of the Nation's nuclear weapons stockpile; enhance stockpile surveillance and the

engineering base; refurbish and extend the lives of selected weapons; maintain a research and development and manufacturing base that ensures the long-term effectiveness of the Nation's stockpile; and support the facilities and infrastructure that are responsive to new or emerging threats. The NPR also directed NNSA to begin a modest effort to examine concepts that could be deployed to further enhance the deterrent capabilities of the stockpile in response to the national security challenges of the 21st Century.

Funding to address the objectives of the NPR is in the Department's request for **Weapons Activities.** At $6.6 billion, the request supports programs and facilities needed to maintain and modernize the nuclear weapons stockpile. In FY 2005, NNSA will continue to maintain and refurbish nuclear weapons; pursue advanced scientific programs needed to continue to certify the safety, security, and reliability of the nuclear stockpile into the future; modernize facilities and increase the responsiveness of our infrastructure that supports the stockpile work; and maintain a robust security program to protect the nuclear weapons complex.

To improve the management and implementation of the Directed Stockpile Work, the FY 2005 request changes how funds are requested. Funding requirements are provided by each nuclear weapon system rather than by the categories of work as in previous years. In FY 2005, $9.0 million is requested to support a modest research and development effort on **advanced concepts** to meet potential new or emerging Department of Defense requirements. Funds are also included for the **Robust Nuclear Earth Penetrator** feasibility and cost studies of $27.6 million in response to a request from the Department of Defense, approved by the Nuclear Weapons Council in November 2001.

The **Facilities and Infrastructure Recapitalization Program** restores, rebuilds, and revitalizes the NNSA's physical infrastructure of the nuclear weapons complex. The program reduces the large backlog of deferred maintenance thereby improving the condition of NNSA facilities including the infrastructure at the national laboratories, production sites, and the Nevada Test Site. In addition, the program supports eliminating non-process uncontaminated excess facilities and funds selected utility line-item construction projects. The Facilities and Infrastructure Recapitalization Program request is $316 million in FY 2005.

The FY 2005 budget also includes $99 million for the national emergency response assets managed through the **Nuclear Weapons Incident Response** program. This program supports the "first responder teams" of highly specialized scientists and technical personnel from the NNSA sites who are deployed across the nation to address immediate threats from nuclear materials. These teams work with the Department of Homeland Security and the Federal Bureau of Investigation, making available the Department of Energy's nuclear expertise in response to suspected nuclear emergencies in the U. S. and around the world.

The **Defense Nuclear Nonproliferation** program works to prevent the spread of nuclear weapons and materials to terrorist organizations and rogue states. In FY 2005, $1.35 billion is requested to support activities to reduce the global nuclear danger. Within this total amount, approximately $439 million supports DOE's commitment to the **Global Partnership** to sustain nuclear nonproliferation initiatives in the former Soviet Union. The G8 leaders who make up the Global Partnership have pledged to devote up to $20 billion over ten years for cooperative efforts to address nonproliferation, counter-terrorism, and nuclear safety issues. President Bush has committed that the U.S. will provide $10 billion, or half of that $20 billion, through programs in DOE, the Department of Defense, and the Department of State. The funds requested in FY 2005 will enhance U.S. capability to detect nuclear weapons proliferation, prevent and reverse the proliferation of weapons of mass destruction, protect and eliminate weapons and weapons-usable nuclear material and/or infrastructure, redirect foreign weapons expertise to civilian enterprises, and reduce the risk of accidents in nuclear fuel cycle facilities worldwide.

Within the Global Partnership activities, $210 million is included within the **International Nuclear Materials Protection and Cooperation** program to secure nuclear materials in the former Soviet

Union. By the end of FY 2005, the Department will have secured 41 of 64 identified nuclear warhead sites and will have secured 37 percent of the approximately 600 metric tons of weapons usable nuclear material.

The budget for International Materials Protection, Control and Cooperation also includes $15 million for the Mega-Ports initiative to train law enforcement officials and equip key international ports with radiation detection equipment to detect, deter, and interdict illicit trafficking of nuclear and other radioactive materials. Also, $50 million is requested for a key program aimed at the **Elimination of Weapons Grade Plutonium Production** in Russia. By 2011, this program will replace three Soviet-era nuclear reactors in Russia with coal burning plants and result in the cessation of the annual production of 1.2 metric tons of weapons-grade plutonium. The **U.S. and Russian Plutonium Disposition** programs are together funded at $548 million. This multi-year effort, in partnership with Russia, will result in construction and operation of two major facilities to convert weapons-usable materials to commercial nuclear reactor fuels. Construction of the multi-billion dollar U.S. and Russian facilities is projected to start in FY 2005. This multi-year effort, in partnership with Russia, will result in construction and operation of major facilities to convert 34 metric tons of weapons grade plutonium in each country to commercial nuclear reactor fuels.

In FY 2005, NNSA assumes responsibility for the **Off-site Source Recovery Project** from the Office of Environmental Management. The requested program funding is $5.6 million, with a projected cost of about $40 million over the next five years to substantially reduce the risk of these source materials being used for radiological dispersion devices. The program works closely with the U.S. Nuclear Regulatory Commission (NRC) to prioritize source recovery.

The **Naval Reactors** program provides safe and reliable nuclear reactors to power the Navy's warships. It is responsible for all naval nuclear propulsion work, beginning with technology development, through reactor operations and, ultimately, to reactor plant disposal. For FY 2005, the budget requests $798 million, approximately five percent above the FY 2004 enacted appropriation, to support 70 percent completion of the design of the next generation nuclear reactor on an aircraft carrier, and continue work on the Transformational Technology Core, which will deliver a significant energy increase to future submarines.

Safeguarding and securing all of DOE's sites and facilities is one of the top priorities of the Department of Energy. At $1.38 billion, the FY 2005 budget for all DOE Safeguards and Security addresses the requirements identified in the revised Design Basis Threat, a post-September 11th analysis of the threats against which we must protect DOE sites and materials across the country. Within the total amount requested for safeguards and security throughout the DOE complex, approximately $707 million will support activities to safeguard nuclear weapons complex facilities. About $265 million will support activities that protect the Cold War nuclear waste material being cleaned up at our environmental cleanup sites. Approximately $73 million will support the continued safeguards and security activities at our scientific laboratories and facilities, and $255 million for the Office of Security will support the development of DOE-wide security policies as well as provide physical security for DOE Headquarters. Also, at $58 million, the FY 2005 request fully supports safeguards and secures activities at the Idaho National Laboratory for nuclear energy R&D. In addition, $25 million will fund the Department's cyber security activities within the Office of the Chief Information Officer.

INVESTING IN AMERICA'S ENERGY FUTURE

Secretary Abraham declared that the Department has "an ambitious, long-term vision of a zero-emission future, free of reliance on imported energy." The Secretary's commitment stems from the President's National Energy Policy, which laid out recommendations to enhance the supply of reliable energy while protecting our environment. In less than three years, the Administration has completed or is implementing nearly all of the plan's 106 recommendations that did not require legislation. This budget request follows through with the President's promise for a strong, secure economy, and an energy- independent future. Investments that are being made in FY 2005 will expand our Nation's

energy supply, assess and address our nation's energy infrastructure vulnerabilities, and develop energy assurance activities consistent with the National Energy Policy.

The Administration's energy portfolio takes a long-term focus through investments in hydrogen use and production, electricity reliability, and advanced coal and nuclear energy power technologies. Investments in these pivotal areas honors a commitment to strengthen the Nation's energy security, not just in the near-term but for generations to come. In FY 2005, the Department's Office of Energy Efficiency and Renewable Energy, with a budget request of $1.3 billion, will be at the forefront of implementing the President's **Hydrogen Fuel Initiative** to reduce America's growing dependence on oil. Hydrogen holds the promise of an ultra-clean and secure energy option for America's future because it can be produced from domestic sources of energy. The Administration's multi-agency hydrogen effort in FY 2005, of which the Department has the lead, is $228 million and includes $173 million for DOE's Energy Efficiency and Renewable Energy program, $9 million for DOE's Nuclear Energy program, $16 million for DOE's Fossil Energy program, and $29 million for DOE's Science program. The Department of Transportation's (DOT) directly funded contribution to this effort in FY 2005 is $0.8 million. The Department of Energy provides funding to DOT and other agencies on a cost-reimbursable basis as appropriate. This budget supports continued development of technologies for clean hydrogen production and commercially viable hydrogen-powered fuel cells to power cars, trucks, homes, and businesses without producing effects of pollution or greenhouse gases.

In addition to the large investments in hydrogen technology development, DOE will also continue to emphasize R&D to improve energy efficiency and reliability in buildings, transportation, and industry ($544 million), and to reduce the cost of renewable and related energy technologies such as wind, solar, geothermal, and biomass ($375 million).

The Energy Efficiency and Renewable Energy budget also includes $291 million, a $64 million or 28 percent increase over FY 2004 funding, to fulfill the President's 10-year commitment to the Weatherization Assistance Program. This long-standing program is a proven way to cut energy costs for 1.2 million low-income families and conserve energy in a cost-effective manner with demonstrated return on the taxpayer investment. This method of implementing conservation through proven energy savings measures is yet another approach to reduce reliance on energy imports. The budget would weatherize 119,000 homes in 2005.

The Nation's long-term energy solution will come not from development of a single energy source but from a broad portfolio of energy supply options. Fossil energy is an essential component of a comprehensive energy strategy. America has hundreds of years of coal resources. Coal accounts for over half of domestic electricity generation. This budget invests $447 million for the President's Coal Research Initiative to dramatically improve the efficiency and environmental protections being developed for coal burning power production. This initiative will conduct research and development on coal-related technologies to improve coal's competitiveness in future energy supply markets. The Administration strongly supports coal as an important part of our energy portfolio as evidenced by the President's commitment to spend $2 billion on clean coal research over 10 years.

The President's Coal Research Initiative includes the Clean Coal Power Initiative, an industry-led, cost-shared research and development program, including FutureGen, an effort to create a facility that will produce electricity and hydrogen while sequestering carbon dioxide. The FY 2005 request provides $287 million for the Clean Coal Power Initiative. Of this amount, $237 million is proposed for FutureGen activities. This $1 billion cost-shared project is intended to create the world's first zero-emissions fossil fuel plant that, when operational, will be the cleanest fossil fuel-fired power plant in the world. Funds proposed in FY 2005 to support FutureGen are derived from rescinding old clean coal balances. By better utilizing these fund balances in support of FutureGen, real benefits will accrue to improve our environment, sustain American technological leadership and better utilize our vast reserves of this vital energy source.

Nuclear energy remains a critical component of the Nation's energy portfolio and a significant part of America's energy future. At $410 million, a $5 million increase from the FY 2004 enacted level, the Department's Nuclear Energy programs work together to develop advanced nuclear power technologies for deployment. This includes the long-term potential of nuclear energy through research as part of the Hydrogen Fuel Initiative. In FY 2005, $9 million is provided to continue to explore nuclear technology as a way to produce hydrogen. The request also includes $31 million for **Generation IV** Nuclear Energy Systems, an increase of $3 million to develop advanced systems that are more proliferation resistant and have reduced life cycle costs, and $46.3 million for **Advanced Fuel Cycle Initiative** activities to continue development of proliferation-resistant fuel treatment technology that reduces the volume and toxicity of high-level waste to optimize the first U.S. repository and reduce the need for additional repositories.

The FY 2005 nuclear energy budget request also reflects the establishment of the Idaho National Laboratory (INL) as the primary center for nuclear energy R&D. On May 19, 2003, oversight of and landlord responsibilities for the Idaho National Environment and Engineering Laboratory (INEEL) transferred from the Office of Environmental Management to the Office of Nuclear Energy, Science and Technology. Beginning in the second quarter of FY 2005, INEEL will merge with Argonne National Laboratory-West (ANL-W) to create the Idaho National Laboratory (INL). The Secretary of Energy has designated INL as the center for the Department's strategic nuclear energy research and development efforts. INL will play a lead role in Generation IV nuclear energy systems development, Advanced Fuel Cycle development, testing of naval reactor fuels and reactor core components, and space nuclear power applications. While the laboratory has transitioned its research and development focus to nuclear energy programs, it will also maintain its multi-program national laboratory status to serve a variety of current and planned Department and national research and development missions.

The East Coast blackout of August 2003, affecting 50 million people across eight states and one Canadian province, was a strong reminder that our Nation's electricity grid has vulnerabilities and weaknesses which need to be addressed. Energy reliability is imperative. To reduce the likelihood of future disruptions or blackouts, DOE requests $91 million, a $10 million or 12.5 percent increase above the FY 2004 level, to modernize and expand our national electricity transmission grid.

Pursuant to the President's National Strategy for Homeland Security and National Energy Policy, the Secretary of Energy has the responsibility to oversee protection of the Nation's critical energy infrastructure, promote energy preparedness, and respond to energy emergencies. The FY 2005 Budget includes $10.6 million for **Energy Security and Assurance** activities that complement the R&D efforts undertaken by the Office of Electric Transmission and Distribution and the activities of the Department of Homeland Security. DOE's Energy Security and Assurance program continues to work with state and local governments to coordinate and conduct required energy emergency functions and in-depth vulnerability assessments. The program also serves in an advisory capacity to analyze energy assurance data and evaluate national policy implications.

ADVANCING SCIENTIFIC UNDERSTANDING

All of the programs and activities highlighted in this Budget depend heavily upon advanced research and development and could not be possible were it not for the scientific and engineering capability available in the Department's national laboratories and at universities across the Nation. With an FY 2005 funding level of $3.4 billion, an increase of about 2.6 percent over FY 2004 when excluding Congressional adds in the Omnibus and Energy and Water Development Appropriations bills, the Department is the largest Federal supporter of basic research in high energy and nuclear physics, materials and chemical sciences, and fusion energy sciences. The FY 2005 Budget request supports scientific investigation in the areas of nanoscience, fusion, advanced scientific computing, and microbial genomes that hold enormous promise for scientific discoveries over the next decade.

Because of its potential to benefit every part of society, **Nanoscience** has become a top priority in the world of science. For FY 2005, the Department requests $211 million, an approximate increase of

$8 million over FY 2004, to continue revolutionary nanoscience research, the study of matter at the atomic and molecular level. Funds will support the design and construction of four Nanoscale Science Research Centers (NSRC) (Lawrence Berkeley National Laboratory, Oak Ridge National Laboratory, Sandia/Los Alamos National Laboratories and Brookhaven National Laboratory) and provide for a major item of equipment for the fifth and final NSRC at Argonne National Laboratory. When completed, these Centers will be a hub of discovery unlike anything we can currently imagine. Truly science fiction come true, these centers will promote the design of things such as nanoparticles that deliver medicines to specific cellular sites such as cancer cells. The potential benefits of nanoscience are endless. Imagine materials in aircraft and automobiles that self-repair stress cracks and other results of metal fatigue. DOE is poised to make these mind-boggling ideas come into being.

The Department's budget also continues to pursue greater scientific understanding of matter and energy. The FY 2005 budget includes $80.5 million for construction and $33.1 million for operation of the Spallation Neutron Source; and $50 million for design and long-lead procurement of the Linac Coherent Light Source, a next generation x-ray light source. Both of these facilities are expected to significantly advance the understanding of materials that will benefit applied research and development across a wide range of disciplines.

Another important investment continued in this request is the pursuit of fusion energy power. When the President announced that the U.S. would join in the **International Thermonuclear Experimental Reactor (ITER)** project he noted that "the results of ITER will advance the effort to produce clean, safe, renewable, and commercially available fusion energy by the middle of this century." Fusion power could well be one of the technologies that allows us to leapfrog the enormous acceleration in future energy demand we know threatens economic growth in every corner of the world. To this end, the Department continues its commitment to the future of Fusion Energy Science research with a request of $264.1 million, slightly above the FY 2004 level. Within that amount, DOE's contribution to ITER in FY 2005 is $38 million, $30 million more than last year, consistent with the Administration's commitment to participate in this $5 billion cost-shared project that may ultimately lead to a fusion power plant capable of delivering electric power.

The FY 2005 budget includes $204 million for **Advanced Scientific Computing Research (ASCR)** to advance U.S. leadership in high performance supercomputing, networking and software development. The request includes $38 million for the Next Generation Computer Architecture (NGA) to acquire additional advanced computing capability for existing users, and for longer-term research and development on new architectures for scientific computers.

Research on microbes through the **Genomics**: **GTL** program, addressing DOE energy, environmental, and national security needs, continues to expand from $63.5 million in FY 2004 to $67.5 million in FY 2005. DOE, through this program, will attempt to use genetic techniques to harness microbes to consume pollution, create hydrogen, and absorb carbon dioxide.

The FY 2005 request includes a total of $29 million within the Basic Energy Sciences to support the President's Hydrogen initiative to advance the fundamental understanding of the properties of hydrogen. This work will complement the applied investigations underway elsewhere in the Department to promote hydrogen production, and solutions to hydrogen storage and other infrastructure requirements, and development of hydrogen powered fuel cell vehicles.

ADDRESSING THE ENVIRONMENTAL LEGACY

One of the most significant and long-standing commitments addressed in this budget is funding to establish a permanent nuclear waste repository. In order to remain on schedule to begin operation of the repository in 2010, the FY 2005 budget requests $907.5 million, $303 million above the FY 2004 enacted level. The majority of the request, $880 million, is for finalizing the license application for construction of the permanent repository and activities associated with developing a transportation system to transport the nuclear waste to Yucca Mountain, Nevada where the repository will be sited.

In FY 2005, the repository program will focus on accelerated finalization and submission of a license application to the Nuclear Regulatory Commission in December 2004. Acquisition of a license is the next milestone in the development of the repository and is needed to build and operate the repository and a transportation system to accept, ship and dispose of waste. The increase requested in FY 2005 will also enable the Department to undertake long-lead procurement activities necessary to support the initial phase of construction and operations of this massive project.

To accommodate the significant resources needed to keep this project on schedule to meet the Administration's 2010 commitment, the Department is proposing legislation to reclassify Nuclear Waste Fund fees as discretionary offsetting collections equal to the proposed appropriation from the Fund. This will allow the Department to offset annual funding requirements for repository activities with a portion of the fees paid by utilities for nuclear waste disposal. Of the $880 million for the Yucca Mountain project, $749 million is requested to be offset through this legislative proposal.

While the license application process is critical to meeting the 2010 operations date, the FY 2005 budget also supports the initial procurement of transportation casks and auxiliary equipment to support initial waste shipments. On December 29, 2003, the Department announced its preference for the Caliente rail corridor if it selects rail transportation as the mode of transportation to be used. If Caliente is selected as the rail corridor for transporting waste to the repository, DOE will initiate an Environmental Impact Statement on specific alignments.

The FY 2005 budget also proposes transferring $27 million for DOE spent nuclear fuel activities formerly managed within the Environmental Management (EM) program to the Office of Civilian Radioactive Waste Management. Transferring the responsibility for these activities will ensure a consistent policy and approach to manage and plan for the ultimate disposition of both commercial and Department-owned spent fuel.

The FY 2005 budget request fulfills a commitment to current and future generations of Americans to accelerate the cleanup of environmental damage resulting from Cold War nuclear programs. As a result of the Top-to-Bottom Review completed two years ago, the Department has taken an aggressive approach to environmental cleanup. The focus has changed from managing risk to reducing risks to human health and the environment. The Department reassessed its cleanup strategies and methods and announced an accelerated strategy to clean up the environmental legacy of the Cold War, 35 years faster than previous estimated, with a savings of $50 billion to the taxpayers.

To deliver on this commitment, the EM program has undergone a transformation. Through management reforms, budget structure changes, improved acquisition strategies, and stricter configuration controls, the program has realigned itself to ensure comprehensive site completion by 2035. The Department is well on its way to achieving that goal. By the end of FY 2004, 77 sites will be completed. An additional 31 sites will be remediated by 2025, leaving six sites to be addressed after 2025. The largest and most challenging site cleanup work remains in FY 2005 and beyond.

The FY 2005 Budget provides $7.4 billion for the EM program, a $426 million increase when compared to last year. This is the most funding ever for this program reflecting the peak year in DOE's investment strategy for accelerated cleanup. To better focus these resources on actual cleanup activities, the FY 2005 budget includes several program shifts from EM to other programs within the Department.

The budget includes a $350 million proposal to be considered under the Defense Site Acceleration Completion appropriation. Due to the uncertainties associated with a recent court ruling that finds the Department's plans to classify certain lower-activity waste from reprocessing (Waste Incidental to Reprocessing) to be contrary to the Nuclear Waste Policy Act, this proposal sets aside $350 million pending satisfactory resolution of the legal issue. These activities relate to accelerated cleanup and

disposal of certain waste from reprocessing that, as a scientific matter, does not require use of a repository for spent nuclear fuel.

The Department's accelerated cleanup strategy has led to the creation of two new organizations outside of Environmental Management, the Offices of Legacy Management and Future Liabilities. Transferring responsibilities to these new offices enables the Environmental Management program to complete its current cleanup scope and other Departmental programs to focus on their primary missions. The budget includes $66 million for the Office of Legacy Management, which is essentially level with FY 2004. The Office of **Legacy Management**, established in FY 2004, was created to manage post-environmental cleanup activities. This organization demonstrates the Department's long-term commitment to manage requirements relevant to closure sites, beyond the completion of remediation. By managing the real and personal property assets that remain after mission change, cleanup, and closure, Legacy Management helps the Department to achieve efficiencies in its physical resource management. Legacy Management also provides a point of service to administer remaining obligations to former employees at those sites and address concerns of the surrounding communities.

New in the FY 2005 budget is the establishment of the **Office of Future Liabilities** ($8 million) to address the following activities at sites with continuing missions: the decontamination and decommissioning of facilities, cleanup of contaminated media, and disposition of excess nuclear and hazardous materials. The FY 2005 budget includes funds to manage environmental liabilities for sites not currently assigned within the Department.

Policy options will also be developed related to disposition of "Greater-Than-Class-C" waste. This material includes civilian-used radioactive sealed sources currently stored by the Department and other wastes that have radioactive properties for which there is currently no planned disposal facility.

The FY 2005 budget also includes $43 million within the Environment, Safety and Health program to accelerate the processing of claims required as part of the **Energy Employees Occupational Illness Compensation Program Act of 2000 (EEOICPA).** This legislation established a process to assist employees of DOE contractors and their survivors with their applications for State Workers' Compensation benefits. The scope and complexity of the process was greater than originally anticipated and the initial estimate to complete the process was ten years. Recognizing that ten years is too long for these individuals to wait, the Administration has implemented a three-year program to completely eliminate the backlog of applications by the end of FY 2006.

The $43 million requested in FY 2005, together with additional funds provided in FY 2003, and funds to be reprogrammed in FY 2004, will enable the Department of Energy to complete the processing of all applications currently on file with DOE in FY 2005, up to the point of review by a Physicians Panel, and completely process all of these applications through the Physicians Panels in FY 2006. The Department has implemented reforms that have already improved performance from a rate of 30 cases per week early in 2003, to over 100 per week by the end of the year. The rate continues to rise. The Department continues to review the EEOICPA program and will take action to remove impediments to the efficient operation of the EEOICPA process.

PRESIDENT'S MANAGEMENT AGENDA

The Department is effectively accomplishing government wide initiatives established under the President's Management Agenda (PMA). The Department has made significant improvement on how it manages, budgets, and plans for all programs, projects and activities. By improving management, performance, and accountability, the Department is striving for a level of performance that keeps DOE programs productive, on track, and on budget. A system of scorecards is used to evaluate the five PMA initiatives, which include Human Capital, Financial Performance, Competitive Sourcing, E-Government, and Budget and Performance Integration. Since the inception of the PMA, Secretary Abraham has initiated management and corporate reforms that have put DOE at the forefront of implementing positive change in the federal government.

In the area of human capital, DOE is executing a comprehensive plan to assess critical skills and gaps to ensure that DOE has the right people in place with the right skills to achieve the DOE mission. The Department has made much progress in linking employee performance appraisals to mission, goals and performance results, to hold employees accountable for performance.

The Department continues to improve its financial performance and recently issued its FY 2003 financial statements with a clean audit opinion. In the area of competitive sourcing, DOE is recognized by OMB as a leader, having completed three public-private competitions estimated to save the government close to $32 million over the next five years, and conducting four additional studies covering approximately 1,000 FTEs. The most recent competition, accounting for $31 million of the projected savings, was won by an in-house DOE financial services team which will reorganize the current service structure to achieve maximum efficiency in its operations.

The Department of Energy strongly supports the implementation of OMB's **Program Assessment Rating Tool (PART)**. The PART provides a standardized way to evaluate the management effectiveness of programs within the federal government. The structured framework of the PART provides a means through which programs can assess their activities differently than through traditional reviews. The PART helps managers identify areas for improvement, and provides senior leadership with an additional resource to support program and budget decisions. The Department's total number of assessments to date exceeds the OMB schedule for conducting PART evaluations. Through the FY 2005 budget cycle, 54 percent of DOE programs will have been assessed, accounting for over 60 percent of its program funding levels.

The Department is also working to implement 19 E-government initiatives, including I-MANAGE, the cornerstone of the Department's efforts to improve management effectiveness and program performance through systems integration. The Department also continues to work to better integrate budgeting and performance. The FY 2005 budget ties this request to performance targets and results, displays the full cost of attaining program goals, and aligns program with the goals and missions of the agency.

Department of Energy
Budget by Organization
(discretionary dollars in thousands)

	FY 2003 Comparable Approp	FY 2004 Comparable Approp	FY 2005 Congress Request	FY 2005 vs. FY 2004	
National Nuclear Security Administraton					
Weapons	5,961,345	6,233,503	6,568,453	+334,950	+5.4%
Defense Nuclear Nonproliferation	1,223,453	1,334,040	1,348,647	+14,607	+1.1%
Naval Reactors	702,196	761,878	797,900	+36,022	+4.7%
Office of the Administrator	330,314	336,826	333,700	-3,126	-0.9%
Other Defense Activities	-408	-446	——	+446	+100.0%
Total, National Nuclear Security Administration	**8,216,900**	**8,665,801**	**9,048,700**	**+382,899**	**+4.4%**
Energy, Science and Environment					
Energy					
Energy Efficiency and Renewable Energy	1,202,326	1,235,478	1,250,745	+15,267	+1.2%
Electric Transmission and Distribution	88,384	80,818	90,880	+10,062	+12.5%
Fossil Energy	797,512	804,653	728,899	-75,754	-9.4%
Nuclear Energy, Science and Technology	375,441	404,820	409,591	+4,771	+1.2%
Total, Energy	**2,463,663**	**2,525,769**	**2,480,115**	**-45,654**	**-1.8%**
Science	**3,322,178**	**3,500,037**	**3,431,718**	**-68,319**	**-2.0%**
Environment					
Environmental Management	6,808,000	7,007,585	7,433,653	+426,068	+6.1%
Civilian Radioactive Waste Management	478,019	604,497	907,473	+302,976	+50.1%
Environment, Safety and Health	131,413	141,930	134,993	-6,937	-4.9%
Office of Legacy Management	62,057	66,008	66,025	+17	+0.0%
Office of Future Liabilities	——	——	8,000	+8,000	n/a
Total, Environment	**7,479,489**	**7,820,020**	**8,550,144**	**+730,124**	**+9.3%**
Total, Energy, Science and Environment	**13,265,330**	**13,845,826**	**14,461,977**	**+616,151**	**+4.5%**
Corporate management					
Office of the Secretary	2,956	3,942	5,441	+1,499	+38.0%
Management, Budget and Evaluation	99,210	99,245	106,055	+6,810	+6.9%
Competitive Sourcing	——	——	5,000	+5,000	n/a
Cost of work and revenues	-49,589	-59,777	-67,641	-7,864	-13.2%
Chief Information Officer	70,959	82,527	107,420	+24,893	+30.2%
Board of Contract Appeals	525	535	653	+118	+22.1%
Hearings and Appeals	4,391	4,809	4,318	-491	-10.2%
Congressional and Intergovernmental Affairs	4,793	4,342	4,956	+614	+14.1%
Public Affairs	3,674	3,788	4,649	+861	+22.7%
General Counsel	20,989	19,589	23,349	+3,760	+19.2%
Policy and International Affairs	14,835	14,403	18,939	+4,536	+31.5%
Economic Impact and Diversity	5,677	5,865	6,230	+365	+6.2%
Inspector General	37,426	39,229	41,508	+2,279	+5.8%
Security	229,946	250,531	255,101	+4,570	+1.8%
Energy Security and Assurance	25,990	22,243	10,600	-11,643	-52.3%
Independent Oversight and Performance Assurance	24,357	23,837	24,669	+832	+3.5%
Energy Information Administration	80,087	81,100	85,000	+3,900	+4.8%
Power Marketing Administrations	202,181	213,026	210,479	-2,547	-1.2%
Colorado River Basins	-22,000	-22,000	-23,000	-1,000	-4.5%
Total, Corporate management	756,407	787,234	823,726	+36,492	+4.6%
Federal Energy Regulatory Commission	-22,669	-18,000	-15,000	+3,000	+16.7%
Undistributed Adjustments	-657	-833	——	+833	+100.0%
Total, Discretionary Funding	**22,215,311**	**23,280,028**	**24,319,403**	**+1,039,375**	**+4.5%**
Yucca mountain--mandatory collection to offset discretionary funding	——	——	-749,000	-749,000	n/a
Total, Discretionary Funding	**22,215,311**	**23,280,028**	**23,570,403**	**+290,375**	**+1.2%**

Department of Energy
Budget by Appropriation
(discretionary dollars in thousands)

	FY 2003 Comparable Approp	FY 2004 Comparable Approp	FY 2005 Congress Request	FY 2005 vs. FY 2004	
Energy and Water Development					
Energy Programs					
Energy supply	730,215	788,620	835,266	+46,646	+5.9%
Non-Defense site acceleration completion	156,129	162,411	151,850	-10,561	-6.5%
Uranium enrichment D&D fund	320,563	414,027	500,200	+86,173	+20.8%
Non-Defense environmental services	161,852	306,439	291,296	-15,143	-4.9%
Science	3,322,244	3,500,169	3,431,718	-68,451	-2.0%
Nuclear waste disposal	144,058	188,879	749,000	+560,121	+296.6%
Departmental administration	89,219	93,720	122,611	+28,891	+30.8%
Inspector general	37,426	39,229	41,508	+2,279	+5.8%
Total, Energy Programs	4,961,706	5,493,494	6,123,449	+629,955	+11.5%
Atomic Energy Defense Activities					
National nuclear security administration:					
Weapons activities	5,961,345	6,233,503	6,568,453	+334,950	+5.4%
Defense nuclear nonproliferation	1,223,453	1,334,040	1,348,647	+14,607	+1.1%
Naval reactors	702,196	761,878	797,900	+36,022	+4.7%
Office of the administrator	330,314	336,826	333,700	-3,126	-0.9%
Total, National nuclear security administration	8,217,308	8,666,247	9,048,700	+382,453	+4.4%
Environmental and other defense activities:					
Defense site acceleration completion	5,496,409	5,576,760	5,970,837	+394,077	+7.1%
Defense environmental services	1,105,778	1,012,610	982,470	-30,140	-3.0%
Other defense activities	637,125	670,083	663,636	-6,447	-1.0%
Defense nuclear waste disposal	312,952	387,699	131,000	-256,699	-66.2%
Total, Environmental & other defense activities	7,552,264	7,647,152	7,747,943	+100,791	+1.3%
Total, Atomic Energy Defense Activities	15,769,572	16,313,399	16,796,643	+483,244	+3.0%
Defense EM privatization (rescission)	——	-15,329	——	+15,329	+100.0%
Power marketing administrations:					
Southeastern power administration	4,505	5,070	5,200	+130	+2.6%
Southwestern power administration	27,200	28,431	29,352	+921	+3.2%
Western area power administration	167,760	176,900	173,100	-3,800	-2.1%
Falcon & Amistad operating & maintenance fund	2,716	2,625	2,827	+202	+7.7%
Total, Power marketing administrations	202,181	213,026	210,479	-2,547	-1.2%
Federal energy regulatory commission	——	——	——	——	——
Subtotal, Energy and Water Development	**20,933,459**	**22,004,590**	**23,130,571**	**+1,125,981**	**+5.1%**
Uranium enrichment D&D fund discretionary payments	-432,731	-449,333	-463,000	-13,667	-3.0%
Excess fees and recoveries, FERC	-22,669	-18,000	-15,000	+3,000	+16.7%
Colorado River Basins	-22,000	-22,000	-23,000	-1,000	-4.5%
Total, Energy and Water Development	**20,456,059**	**21,515,257**	**22,629,571**	**+1,114,314**	**+5.2%**
Interior and Related Agencies					
Fossil energy research and development	611,149	672,771	635,799	-36,972	-5.5%
Naval petroleum and oil shale reserves	17,715	17,995	20,000	+2,005	+11.1%
Elk Hills school lands fund	36,000	36,000	36,000	——	——
Energy conservation	880,176	877,984	875,933	-2,051	-0.2%
Economic regulation	1,477	1,034	——	-1,034	-100.0%
Strategic petroleum reserve	171,732	170,948	172,100	+1,152	+0.7%
Strategic petroleum account	1,955	——	——	——	——
Northeast home heating oil reserve	5,961	4,939	5,000	+61	+1.2%
Energy information administration	80,087	81,100	85,000	+3,900	+4.8%
Subtotal, Interior Accounts	1,806,252	1,862,771	1,829,832	-32,939	-1.8%
Clean coal technology	-47,000	-98,000	-140,000	-42,000	-42.9%
Total, Interior and Related Agencies	**1,759,252**	**1,764,771**	**1,689,832**	**-74,939**	**-4.2%**
Total, Discretionary Funding	**22,215,311**	**23,280,028**	**24,319,403**	**+1,039,375**	**+4.5%**
Yucca mountain--mandatory collection to offset discretionary funding	——	——	-749,000	-749,000	n/a
Total, Discretionary Funding	**22,215,311**	**23,280,028**	**23,570,403**	**+290,375**	**+1.2%**

Department of Energy
Funding by General Goal and Program Goal

(discretionary dollars in thousands)

Goals	FY 2003 Comparable Appropriation	FY 2004 Comparable Appropriation	FY 2005 Request
General Goal 1, Nuclear Weapons Stewardship			
Program Goal 01.27.00.00 Directed Stockpile Work.....	1,246,803	1,304,527	1,400,041
Program Goal 01.28.00.00 Science Campaign.....	258,312	269,280	299,594
Program Goal 01.29.00.00 Engineering Campaign.....	267,853	260,496	241,879
Program Goal 01.30.00.00 Conf. Fusion Ignition & High Yield.....	494,340	505,673	489,797
Program Goal 01.31.00.00 Adv. Simulation & Computing.....	667,847	709,344	737,890
Program Goal 01.32.00.00 Pit Manufacturing & Certification.....	259,243	291,840	334,943
Program Goal 01.33.00.00 Readiness Campaign.....	267,501	323,430	278,853
Program Goal 01.34.00.00 Readiness in Tech. Base & Fac (Ops)....	1,277,238	1,260,317	1,262,386
Program Goal 01.35.00.00 Readiness in Tech. Base & Fac (Con)....	189,129	254,630	205,364
Program Goal 01.36.00.00 Secure Transportation Asset.....	166,897	158,759	200,385
Program Goal 01.37.00.00 Nuclear Weapons Incident Response.....	80,320	87,680	98,758
Program Goal 01.38.00.00 Facilities & Infrastructure Recap.....	233,168	234,773	314,786
Program Goal 01.39.00.00 Safeguards & Security.....	552,694	572,754	703,777
TOTAL, General Goal 1, Nuclear Weapons Stewardship.....	**5,961,345**	**6,233,503**	**6,568,453**
General Goal 2, Nuclear Nonproliferation			
Program Goal 02.40.00.00 Non Proliferation & Verification R&D.....	239,616	223,939	220,000
Program Goal 02.41.00.00 HEU Transparency Implementation.....	16,017	17,273	20,950
Program Goal 02.42.00.00 Elim. Of Weapons-Grade Pu.....	46,054	62,776	50,097
Program Goal 02.43.00.00 International Emerg. Mgmt & Coop.....	31,410	0	0
Program Goal 02.44.00.00 Non Proliferation & Internat'l Security.....	122,453	110,122	124,000
Program Goal 02.45.00.00 Russian Transition Initiatives.....	36,567	38,383	41,000
Program Goal 02.46.00.00 Intern'l Nuclear Mat'l Prot. & Coop.....	311,603	249,509	238,000
Program Goal 02.47.00.00 Fissile Materials Disposition.....	416,864	630,145	649,000
Program Goal 02.48.00.00 Accelerated Material Disposition.....	836	0	0
Program Goal 02.62.00.00 Offsite Source Recovery Project.....	2,032	1,893	5,600
TOTAL, General Goal 2, Nuclear Nonproliferation.....	**1,223,453**	**1,334,040**	**1,348,647**
General Goals 1 & 2			
Program Goal 00.50.00.00 Office of the Administrator.....	330,314	336,826	333,700
General Goal 3, Naval Reactors			
Program Goal 03.49.00.00 Naval Reactors.....	702,196	761,878	797,900
TOTAL, General Goal 3, Naval Reactors.....	**702,196**	**761,878**	**797,900**
General Goal 4, Energy Security			
Program Goal 04.01.00.00 Hydrogen/Fuel Cell Technology.....	99,607	158,318	190,671
Program Goal 04.02.00.00 Vehicle Technologies.....	191,438	197,083	172,763
Program Goal 04.03.00.00 Solar Energy.....	87,177	87,617	88,657
Program Goal 04.04.00.00 Zero Energy Buildings/Building Tech.....	72,127	66,283	64,277
Program Goal 04.05.00.00 Wind Energy.....	44,092	43,402	45,911
Program Goal 04.06.00.00 Hydropower.....	5,311	5,153	6,622
Program Goal 04.07.00.00 Geothermal Technology.....	30,061	26,800	28,473
Program Goal 04.08.00.00 Biomass and Bio Refinery R&D.....	116,738	99,161	89,691
Program Goal 04.09.00.00 Weatherization.....	245,698	251,517	321,140
Program Goal 04.10.00.00 State Energy Programs.....	54,927	51,237	47,588
Program Goal 04.11.00.00 Intergovernmental Activities.....	59,974	54,406	50,429
Program Goal 04.12.00.00 Elec. Transmission & Distribution.....	88,384	80,818	90,880

Program Goal 04.13.00.00 DEMP/FEMP……	22,742	23,892	21,911
Program Goal 04.14.00.00 New Nuclear Generation Tech……..	74,159	66,129	54,606
Program Goal 04.15.00.00 Adv. Proliferation-Res. Nuc. Fuel Tech…	62,543	73,119	50,726
Program Goal 04.17.00.00 National Nuclear Infrastructure…….	238,739	265,572	304,258
Program Goal 04.24.00.00 Fusion Energy…….	0	3,000	7,000
Program Goal 04.51.00.00 SEPA……	4,505	5,070	5,200
Program Goal 04.52.00.00 SWPA……..	27,200	28,431	29,352
Program Goal 04.53.00.00 WAPA……..	148,476	157,525	152,927
Program Goal 04.54.00.00 BPA*……	0	0	0
Program Goal 04.55.00.00 Zero Emissions Coal-Based Elec……..	452,920	470,549	441,007
Program Goal 04.56.00.00 Natural Gas Technology…….	58,738	57,395	34,746
Program Goal 04.57.00.00 Oil Technology……	52,491	46,827	20,046
Program Goal 04.58.00.00 Petroleum Reserves……..…….	233,363	229,882	233,100
Program Goal 04.59.00.00 Distributed Energy Resources……..	66,008	67,564	58,538
Program Goal 04.60.00.00 Industrial Technologies……	106,423	103,044	64,076
Program Goal 04.61.00.00 Energy Information Administration……	80,087	81,100	85,000
TOTAL, General Goal 4, Energy Security……	**2,723,931**	**2,800,895**	**2,759,594**
General Goal 5, World-Class Scientific Research			
Program Goal 05.19.00.00 High Energy Physics……..	784,525	792,530	797,891
Program Goal 05.20.00.00 Nuclear Physics……..	414,206	420,903	433,950
Program Goal 05.21.00.00 Bio & Environmental Research…….	552,446	692,952	542,752
Program Goal 05.22.00.00 Basic Energy Sciences…….	1,119,666	1,091,725	1,150,806
Program Goal 05.23.00.00 Adv. Scientific Computing Res…….	182,359	218,533	221,109
Program Goal 05.24.00.00 Fusion Energy…….	268,976	280,393	278,209
TOTAL, General Goal 5, World-Class Scientific Research…….	**3,322,178**	**3,497,037**	**3,424,718**
General Goal 6, Environmental Managemen			
Program Goal 06.18.00.00 Environmental Management……..	6,808,000	7,007,585	7,433,653
Program Goal 06.26.00.00 Legacy Management……..	62,057	66,008	66,025
TOTAL, General Goal 6, Environmental Management……	**6,870,057**	**7,073,593**	**7,499,678**
General Goal 7, Nuclear Waste			
Program Goal 07.25.00.00 Nuclear Waste Disposal (Def/Non-Def)….	478,019	604,497	907,473
TOTAL. General Goal 7, Nuclear Waste……	**478,019**	**604,497**	**907,473**
Corporate Management (Other Mission Supporting Organizations)..	603,818	637,759	679,240
GRAND TOTAL, Discretionary Funding……	**22,215,311**	**23,280,028**	**24,319,403**

*Bonneville's (BPA) program is mandatory and non-discretionary, and receives no annual appropriations from Congress. BPA funds the expense portion of it budget and repays the Federal investment with revenue from electric rates.

SECTION 1. DEFENSE STRATEGIC GOAL

Defense Strategic Goal: To protect our national security by applying advanced science and nuclear technology to the nation's defense.

(discretionary dollars in thousands)

	FY 2003 Comparable Approp	FY 2004 Comparable Approp	FY 2005 Congress Request	FY 2005 vs. FY 2004	
National Nuclear Security Administration (NNSA)					
Weapons Activities	6,020,311	6,339,241	6,598,453	+259,212	+4.1%
Defense Nuclear Nonproliferation	1,307,578	1,382,040	1,348,647	-33,393	-2.4%
Naval Reactors	702,196	763,878	797,900	+34,022	+4.5%
Office of the Administrator	330,314	336,826	333,700	-3,126	-0.9%
Subtotal, National Nuclear Security Administration	8,360,399	8,821,985	9,078,700	+256,715	+2.9%
Use of prior year balances and other adjustments	-143,091	-155,738	-30,000	+125,738	+80.7%
Total, National Nuclear Security Administration	**8,217,308**	**8,666,247**	**9,048,700**	**+382,453**	**+4.4%**

The Defense Strategic Goal is supported by the following three general goals:

General Goal 1. Nuclear Weapons Stewardship: Ensure that our nuclear weapons continue to serve their essential deterrence role by maintaining and enhancing the safety, security, and reliability of the U.S. nuclear weapons stockpile.

General Goal 2. Nuclear Nonproliferation: Provide technical leadership to limit or prevent the spread of materials, technology, and expertise relating to weapons of mass destruction; advance the technologies to detect the proliferation of weapons of mass destruction worldwide; and eliminate or secure inventories of surplus materials and infrastructure usable for nuclear weapons.

General Goal 3. Naval Reactors: Provide the Navy with safe, military effective nuclear propulsion plants and ensure their continued safe and reliable operation.

The following programs contribute to these goals:

Weapons Activities

Defense Nuclear Nonproliferation

Office of the Administrator

Naval Reactors

Section 1. Defense Strategic Goal / General Goal 1. Nuclear Weapons Stewardship

Weapons Activities – NNSA

(discretionary dollars in thousands)

	FY 2003 Comparable Approp	FY 2004 Comparable Approp	FY 2005 Congress Request	FY 2005 vs. FY 2004	
Weapons Activities					
Directed stockpile work	1,259,136	1,326,656	1,406,435	+79,779	+6.0%
Campaigns	2,237,006	2,400,096	2,393,840	-6,256	-0.3%
Readiness in technical base and facilities	1,480,872	1,540,645	1,474,454	-66,191	-4.3%
Secure transportation asset	168,548	161,452	201,300	+39,848	+24.7%
Nuclear weapons incident response	81,114	89,167	99,209	+10,042	+11.3%
Facilities and infrastructure recapitalization program	235,474	238,755	316,224	+77,469	+32.4%
Safeguards and security	558,161	582,470	706,991	+124,521	+21.4%
Subtotal, Weapons Activities	6,020,311	6,339,241	6,598,453	+259,212	+4.1%
Use of prior year balances and other adjustments	-58,966	-105,738	-30,000	+75,738	+71.6%
Total, Weapons Activities	**5,961,345**	**6,233,503**	**6,568,453**	**+334,950**	**+5.4%**

PROGRAM DESCRIPTION

One of the statutory missions of the National Nuclear Security Administration (NNSA) is to maintain and enhance the safety, security, and reliability of the U.S. nuclear weapons stockpile to meet national security requirements. The mission is carried out in partnership with the Department of Defense, with NNSA providing research, development, and production activities supporting the U.S. nuclear weapons stockpile. The program also supports national assets for the secure transportation of weapons, components and materials, assets to respond to incidents involving nuclear weapons and materials, and safeguards and security for NNSA facilities. Federal employees provide direction, management, and oversight of about 35,000 contractor employees who carry out program activities at a nationwide complex of government-owned, contractor-operated national security laboratories and nuclear weapons production facilities. Locations include Lawrence Livermore National Laboratory in California; Los Alamos National Laboratory in New Mexico; Sandia National Laboratories in California and New Mexico; Kansas City Plant in Kansas City, Missouri; Pantex Plant in Amarillo, Texas; Y-12 National Security Complex in Oak Ridge, Tennessee; Savannah River Site in Aiken, South Carolina; and the Nevada Test Site near Las Vegas, Nevada.

The NNSA is committed to the President's emphasis on performance-based budgeting, and the strategic objective for programs funded in this account are included in the February 2002 NNSA strategic plan: *Maintaining and enhancing the safety, security, and reliability of the nation's nuclear weapons stockpile to counter the threats of the 21st Century and ensuring the vitality and readiness of the NNSA's nuclear security enterprise*.

The main components of the **Weapons Activities** budget request are Directed Stockpile Work, Campaigns, Readiness in Technical Base and Facilities, Secure Transportation Asset, Nuclear Weapons Incident Response, the Facilities and Infrastructure Recapitalization Program, and Safeguards and Security. The funding for Program Direction activities, except for Secure Transportation Asset, is in the Office of the Administrator appropriation account.

Directed Stockpile Work (DSW) activities ensure the operational readiness of the nuclear weapons in the nation's stockpile through maintenance, evaluation, refurbishment, reliability assessment, weapon dismantlement and disposal, research, development, and certification activities. The Administration's **Nuclear Posture Review** released in January 2002 reaffirmed that

future weapons refurbishment and life extension for the stockpile are consistent with overall national security policy. The FY 2005 request is organized by weapon type, consistent with congressional direction and places a high priority on accomplishing the near-term workload and supporting technologies for the stockpile along with the long-term science and technology investments to ensure the capability and capacity to support ongoing missions.

Campaigns are focused scientific and technical efforts essential for certification and life extension of the stockpile. They are designed to allow NNSA to move to "science-based" judgments for stewardship by relying on experiments, computations, simulation, and surveillance information rather than underground nuclear testing. The **Science and Engineering Campaigns** are focused to provide technologies required for the directed stockpile workload and the completion of new scientific and experimental facilities. In the **Inertial Confinement Fusion Ignition and High Yield Campaign**, the **National Ignition Facility** continues to meet all milestones on or ahead of schedule, and construction will be completed at the end of FY 2008. The **Advanced Simulation and Computing Campaign** will continue to improve capabilities through development of faster computer platforms in partnership with private industry, and with state of the art techniques for calculations, modeling and simulation, and analysis of highly complex weapons physics information. The **Pit Manufacturing and Certification Campaign** continues work on reestablishing the ability to manufacture the W88 pit and planning for a modern pit facility. The **Readiness Campaign** is technology-based efforts to reestablish and enhance manufacturing and other capabilities needed for the future production of weapon components.

Readiness in Technical Base and Facilities (RTBF) supports the underlying physical infrastructure and operational readiness required to conduct weapons activities at the eight NNSA sites: three national weapons laboratories, four production sites, and the Nevada Test Site. Nearly $1.5 billion is allocated annually to ensure that principal government owned, contractor operated facilities are operational, safe, secure, compliant with regulatory requirements, and able to sustain a defined level of readiness to execute tasks identified in the Campaigns and Directed Stockpile Work.

Secure Transportation Asset provides for the safe, secure movement of nuclear weapons, special nuclear materials, and weapon components between military locations and nuclear complex facilities within the United States. Program direction funds are also included within this activity.

Nuclear Weapons Incident Response (NWIR) Funding provides for emergency management and response activities that ensure a central point of contact and integrated response to emergencies requiring DOE assistance.

Facilities and Infrastructure Recapitalization Program (FIRP) is designed to restore, rebuild, and revitalize the physical infrastructure of the nuclear weapons complex. The FIRP addresses an integrated, prioritized list of maintenance and infrastructure projects, separate from base maintenance and infrastructure efforts under RTBF, which will significantly increase the operational efficiency and effectiveness of the NNSA sites. It preferentially targets deferred maintenance and footprint reduction. The program is supported by the **Nuclear Posture Review**, which calls for a modernized responsive infrastructure by upgrading key facilities with a dedicated refurbishment program.

Safeguards and Security provides funding for all physical security, personnel security, and cyber security activities at the NNSA landlord sites; specifically, the three national weapons laboratories, the Nevada Test Site, and the four production plant sites. Funding for security investigations of M&O contractors at NNSA landlord sites is included in the DOE Security program request.

PROGRAM HIGHLIGHTS

The FY 2005 request supports the requirements of the Stockpile Stewardship program as defined by Presidential Directives, Department of Defense requirements, and the Nuclear Posture Review and will:

Complete the Annual Stockpile Certification and Report to the President and, subsequently, to the Congress by March 2005;

Support the scheduled workload for the ongoing B61, W76, W80 refurbishments as reaffirmed by the Nuclear Posture Review;

Support all directive scheduled activities for alterations, modifications, and limited-life component replacements for the current stockpile; and scheduled surveillance, evaluation and dismantlement activities;

Support preconceptual and concept definition studies and feasibility and cost studies for the Advanced Concepts Initiative, including the Robust Nuclear Earth Penetrator study, approved by the Nuclear Weapons Council;

Support planned schedules for development of experimental and computational tools and related facilities and technologies necessary to support continued certification of the refurbished weapons and aging weapons components without underground nuclear testing, including final system delivery and checkout of 200-teraOPS class computer by FY 2008; and completion of the Microsystem and Engineering Sciences Applications Complex in FY 2010;

Support construction of the National Ignition Facility according to the September 2000 project baseline and initiate experimental activities;

Resume studies and technology development for a multi-axis, multi-time radiographic facility;

Support subcritical experiments schedule;

Maintain the ability to conduct underground nuclear testing, if necessary, and begin the transition to an 18-month readiness posture;

Continue to develop the capability to certify a W88 pit by 2007 and continue conceptual design for a modern pit facility;

Produce and deliver tritium by FY 2007;

Maintain warm standby readiness for all necessary infrastructure at all current facilities and sites;

Revitalize the complex consistent with the NPR, including an integrated complex-wide construction effort;

Renew and sustain facilities and infrastructure through a recapitalization program to address issues that are not included in base maintenance and infrastructure efforts;

Provide safe transportation of nuclear warheads, weapons components and other DOE materials and support Nuclear Weapons Incident Response national assets;

Continue safeguard and security of our nuclear facilities, materials, and information; protection of our employees in a post-9/11 environment; continue the cyber security program; and a modest safeguards and security technology application program.

SIGNIFICANT FUNDING CHANGES – FY 2004 to FY 2005 Request ($ in millions)

Weapons Activities (FY 2004 $6,233.5; FY 2005 $6,568.5) .....+$335.0
FY 2005 request is 5.4 percent above FY 2004. Increase will support scheduled R&D, maintenance and evaluation, and certification for the nuclear weapons stockpile as supported by the Nuclear Posture Review. The funding increase is consistent with planned program funding levels in the NNSA's Future Years Nuclear Security Program.

Directed Stockpile Work (FY 2004 $1,326.7; FY 2005 $1,406.4) ..... +$79.8
FY 2005 request is 6.0 percent above the FY 2004 level and is presented in a new budget structure that will improve management focus and allow better traceability and visibility into weapons systems budget and cost. The life extension programs for the B61, W76, W80 and W87 (FY 2004 $443.5; FY 2005 $477.4) develops solutions to extend the life of these four warheads and correct potential technical issues. Stockpile systems (FY 2004 $543.8; FY 2005 $536.1) conducts scheduled maintenance, ongoing assessment and certification activities, limited life component exchanges, surveillance and required alternation, modifications and safety studies. Other activities include dismantling weapons retired from the stockpile (FY 2004 $58.6 ; FY 2005 $65.3); conducting research and development, certification and safety efforts (FY 2004 $156.2; FY 2005 $158.0); stockpile services for management, technology and production activities (FY 2004 $111.1; FY 2005 $133.1); investigating advance concepts in coordination with DoD; (FY 2004 $6.0; FY 2005 $9.0) and conducting research and development studies on the Robust Nuclear Earth Penetrator (FY 2004 $7.4; FY 2005 $27.6).

Science Campaign (FY 2004 $273.8; FY 2005 $301.0) ..... +$27.2
FY 2005 request is 9.9 percent above FY 2004.

Primary Technology Assessment (FY 2004 $82.3; FY 2005 $81.5) supports experimental activities to develop and implement the ability to certify the nuclear safety and performance of any aged or rebuilt primaries to required levels of accuracy without nuclear testing. Funding supports the subcritical experiment schedules; diagnostic development; radiography capability; an increased emphasis on funding primary certification work for the stockpile; and the efforts to maintain the test readiness of the Nevada Test Site to conduct a underground test, if directed, and move toward an 18-month test readiness posture.

Dynamic Materials Properties (FY 2004 $81.8; FY 2005 $91.5) focuses on the development of accurate modeling and validation experiments for the properties and materials used within the nuclear explosives package in order to assess the safety, security, and reliability of the stockpile. The funding reflects an increase in the number of experiments at the U1a Complex, JASPER, and Atlas, LANCE and the pulsed power Z accelerator.

Advanced Radiography (FY 2004 $55.7; FY 2005 $62.4) supports research and development technologies for three-dimensional radiography imagery of imploding surrogate primaries and to experimentally validate computer simulations of the implosion process. This supports the certification of refurbished and replaced primaries. Increase is consistent with the long-term goal to develop multi-axis, multi-time radiography, technology studies and continued commissioning of the Dual-Axis Radiography Hydrotest (DARHT) Facility 2nd Axis. No funding is requested for hardware development of a proton based Advanced Hydro Facility.

Secondary Assessment Technologies (FY 2004 $54.1; FY 2005 $65.6) Provides modern computational baselines for stockpiled weapon systems (including radiation sources and dynamics and radiation flow) and for determining performance of nominal aged and rebuilt secondaries. Increase supports a ramp-up of the research program to reduce risk in the life extension programs and for high energy density weapons experimentation and model development. Experiments use the Z accelerator, the Omega laser, and National Ignition Facility.

Engineering Campaign (FY 2004 $264.9; FY 2005 $243.0) ..... -$21.9
FY 2005 request is 8.3 percent below FY 2004.

Enhanced Surety (FY 2004 $32.8 FY 2005 $38.1) pursues a multi-technology approach to demonstrate enhanced use-denial and advanced initiation technology development for the life extension programs. FY 2005 is focused at improving safety at the detonator interface to the nuclear explosives package and development of a fiber optic controlled detonator.

Weapons Systems Engineering Assessment Technology (FY 2004 $27.1; FY 2005 $27.3) works to establish the capability to predict engineering margins by integrating numerical simulations with experimental data. In collaboration with Advanced Simulation and Computing, computational models are used to predict weapon system response to normal, abnormal and hostile environments.

Nuclear Survivability (FY 2004 $22.8; FY 2005 $24.5) This program develops radiation-hardening approaches and hardened components, develops and validates experimental and analytical tools for qualifying warheads to nuclear survivability requirements, modernizes tools for weapon outputs, and develops and validates tools to translate military effects requirements to warhead design specifications (design-to-effects).

Enhanced Surveillance (FY 2004 $91.3; FY 2005 $99.9) addresses stockpile aging concerns through component and material lifetime assessments and develops predictive capabilities for early identification. The program identifies aging issues with sufficient lead-time to ensure that NNSA can have the refurbishment capability and capacity in place when required. Increase provides for aging effects assessments on pits, selected canned sub assemblies and non-nuclear components; delivers advanced diagnostics and telemetry to support flight test requirements; deploys the first of five modernized system testers at the Weapons Evaluation Test Laboratory; develops new surveillance techniques for tritium reservoirs; and supports the annual assessment of the nuclear stockpile.

Construction of the **Microsystems and Engineering Sciences Applications** (MESA) Complex (FY 2004 $86.5; FY 2005 $48.7) at Sandia National Laboratories will provide for the design, integration, prototyping, fabrication, and qualification of microsystems into weapons components, subsystems, and systems within the stockpile. Funding decrease is consistent with MESA cost and schedule baseline.

Inertial Confinement Fusion Ignition and High Yield Campaign
(FY 2004 $514.3; FY 2005 $492.0)..... -$22.3

FY 2005 request is 4.3 percent below FY 2004. This program develops laboratory capabilities to create and measure extreme conditions of temperature, pressure, and radiation approaching those in a nuclear explosion and conducts weapons related research. Funding for National Ignition Facility (NIF) construction is consistent with the approved project baseline (FY 2004 $149.1; FY 2005 $130.0). FY 2005 funding provides full support for the NIF demonstration program necessary to meet the full operation date of FY 2010 and support NIF diagnostics and cryogenic target systems; provides for ignition target design and fabrication; ICF experimental support activities; single-shift operations at the Z accelerator at Sandia; university grants and short-pulse high-intensity laser activities. The High-Energy Petawatt Laser Development includes construction of the OMEGA Extended Performance (OMEGA EP) laser project at the University of Rochester Laboratory for Laser Energetics.

Advanced Simulation and Computing Campaign
(FY 2004 $721.4; FY 2005 $741.3)..... +$19.9

FY 2005 request is 2.8 percent above FY 2004 and supports life extension schedules in DSW. The increase is a result of higher computer maintenance costs associated with the current operating platforms, including Red, Blue Pacific, Blue Mountain, White, and Q; continuing development, production, and validation of 3D codes; and support of the goal of delivering a 100-teraOPS platform in FY 2005.

Pit Manufacturing and Certification Campaign
(FY 2004 $296.8; FY 2005 $336.5)..... +$39.7
FY 2005 request is 13.4 percent above FY 2004. The increase focuses on the manufacturing and certification of W88 pits, including preparations for integral experiments in FY 2005 to support the W88 pit certification goal of FY 2007. Funding for the Modern Pit Facility (MPF) will provide for the continuation of design studies required to complete a Conceptual Design Report (CDR) and if the Secretary of Energy decides to proceed with the MPF project in 2004, a site-specific NEPA process will be initiated in FY2005. Environmental documentation will be prepared in FY 2005 to support a FY 2007 Record of Decision.

Readiness Campaign (FY 2004 $328.9; FY 2005 $280.1)..... -$48.8
FY 2005 request is 14.8 percent below the FY 2004 request. The Readiness Campaign has the responsibility for developing or reestablishing new manufacturing processes and technologies for qualifying weapon components for reuse.

Stockpile Readiness (FY 2004 $54.8; FY 2005 $45.8) goal is to restore full production manufacturing capability at the Y-12 National Security Complex. The increase in funding is primarily for procuring and installing equipment to meet multiple DSW requirements.

High Explosives and Weapons Operations (FY 2004 $23.5; FY 2005 $34.2) Ensures long-term manufacturing capabilities for high explosive fabrication, including component requalification and weapon assembly or disassembly operations at the Pantex Plant. Increase supports the initial startup activities for high explosive manufacturing and product requalification and technical preparations for the High Explosives Pressing Facility with a planned construction start of FY 2006.

Non-Nuclear Readiness (FY 2004 $33.2; FY 2005 $35.5) provides the electrical, electronic, and mechanical production capabilities required to make a weapon into a nuclear explosive. Increase supports modernization and readiness of capabilities including equipment purchases that support materials engineering and environmental testing related to W76 and the life extension programs.

Tritium Readiness (FY 2004 $59.6; FY 2005 $58.9) establishes and operates the Commercial Light-Water Reactor (CLWR) Tritium Production System to produce tritium, and maintains the national inventory of tritium to support the nuclear weapons stockpile. Production of tritium in the Tennessee Valley Authority's (TVA) Watts Bar reactor began in October 2003. Irradiated rods will be removed in FY 2005 and transported to a temporary storage location to await completion of the **Tritium Extraction Facility**. TEF Construction (FY 2004 $74.6; FY 2005 $21.0) will be completed in FY 2005 to support start up of facility operations planned to begin in FY 2007. The TEF will provide steady-state production capability of as much as several Kg of tritium per year and will have an operational life span of at least 40 years. This will provide an initial capability, but can be resized as the stockpile requirements change.

Advanced Design and Production Technologies (ADAPT) (FY 2004 $77.4; FY 2005 $84.7) integrates and systematically develops new technologies and enhanced capabilities to improve the effectiveness of the production complex and to deliver qualified refurbishment products upon demand. Increased activities support Directed Stockpile Work schedules for development of qualified manufacturing processes and capabilities; and for the production of new and replacement parts for weapons refurbishments. Efforts in FY 2005 focus on Advanced Technology Roadmap strategies and near term LEPs.

Readiness in Technical Base and Facilities (RTBF)
(FY 2004 $1,540.6; FY 2005 $1,474.5)..... -$66.1
FY 2005 request is 4.3 percent below FY 2004 and is comprised of Operations and Maintenance activities and Construction projects.

Operations of Facilities (FY 2004 $1,021.7; FY 2005 $1,015.6) provides funds for the operation, physical infrastructure, and on-going maintenance of facilities for activities conducted in the Campaigns and Directed Stockpile Work. Overall decrease reflects a prioritization of activities across the nuclear weapons complex and reductions from congressionally directed projects in FY 2004.

Program Readiness (FY 2004 $115.8; FY 2005 $106.2) includes select activities that support more than one NNSA facility, Campaign or Directed Stockpile Work activity, and Nevada Site readiness activities. Decrease is associated with Borehole Management Program closure (plugging) of unutilized Nevada Test Site legacy boreholes and the Chronic Beryllium Disease Prevention Program Implementation project.

Special Projects (FY 2004 $41.3; FY 2005 $20.5) Supports a variety of activities including special access programs; Decrease reflects the final installment for the Los Alamos National Laboratory Foundation and no funds for Los Alamos County School District and the Critical Skills Development program.

Material Recycle and Recovery (FY 2004 $75.7; FY 2005 $87.0) provides for the recycle and recovery of plutonium, enriched uranium, and tritium from fabrication and assembly operations, limited life components, and dismantlement of weapons and components. Also funded are the Central Scrap Management Office and the Precious Metals Business Center located at Y-12 National Security Complex. Increase is associated with the establishment of Enriched Uranium production capability at LANL that decontaminates plutonium contaminated HEU shells and converts the uranium metal to oxide for shipment to Y-12 National Security Complex.

Containers (FY 2004 $15.9; FY 2005 $17.9) this activity includes research, development, design, certification, testing and evaluation for shipping containers not directly associated with the life extension programs in DSW. Increase provides for container upgrades and establishment of an inventory tracking system and database, so that packaging inventories can be tracked and managed with much greater efficiency throughout the weapons complex.

Storage (FY 2004 $11.3; FY 2005 $19.0) provides for storage of surplus pits, highly enriched uranium, and other weapons and nuclear materials in compliance with DOE/NNSA requirements. The FY 2005 request represents increased material characterization and implementation of the Highly Enriched Uranium Manufacturing Facility (HEUMF) Transition Plan**.**

Construction (FY 2004 $258.9; FY 2005 $206.3) supports project construction and project engineering design activities from FY 2001-2004. Funding provides for the mortgages for all ongoing projects. In FY 2005, there is one project engineering and design line item ($11.6) with four new subprojects including DX High Explosives Characterization at LANL; Test Capabilities Revitalization, Phase II at SNL; Component Evaluation Facility at the Pantex Plant, and the Albuquerque Transportation and Technology Center, at Albuquerque, NM The request initiates two new line item construction projects: the Building 12-64 Production Bays Upgrade at Pantex Plant ($25.1) which will enhance the ability to conduct nuclear explosive operations on any weapon program; and the Beryllium Capability Project at the Y-12 National Security Complex ($3.6) to replace obsolete facilities and equipment and meet environmental and safety requirements.

Secure Transportation Asset (FY 2004 $161.5; FY 2005 $201.3) ..... +$39.8
FY 2005 request is 24.7 percent above FY 2004. Funding provides personnel, equipment, and training for the scheduling and secure transport services for the nuclear weapons complex needed to meet the Secretary's Environmental Management commitments for closing former sites. Increase supports the hiring of federal agents/couriers, specialized training for personnel, and production of fleet replacement vehicles.

Nuclear Weapons Incident Response (FY 2004 $89.2; FY 2005 $99.2)..... +$10.0
FY 2005 request is 11.3 percent above FY 2004. Funding provides for emergency management and response activities that ensure a central point of contact and integrated response to emergencies requiring DOE assistance, including the **Accident Response Group** (FY 2004 $1.3; FY 2005 $1.9), which responds to potential U.S. nuclear accidents; and the **Nuclear Emergency Support Team** (FY 2004 $57.9; FY 2005 $66.1), which responds to nuclear terrorist threats. This activity was formerly funded under RTBF.

Facilities and Infrastructure Recapitalization Program
(FY 2004 $238.8; FY 2005 $316.2) ..... +$77.4
FY 2005 request is 32.4 percent above FY 2004. Increase supports recapitalization, facility disposition, and infrastructure planning of the nuclear weapons complex consistent with Ten Year Comprehensive Site Plans and the Infrastructure Plan for the NNSA Nuclear Complex issued in April 2003. In FY 2005, there is one project engineering and design line item ($8.7) with four subprojects; and three other line item construction projects ($15.0) at Y-12 National Security Complex, Los Alamos and Sandia National Laboratories that will further reduce the deferred maintenance backlog and satisfy a critical need for improvement to the utilities infrastructure of the complex.

Safeguards and Security (FY 2004 $582.5; FY 2005 $707.0)..... +$124.5
FY 2005 request is 21.4 percent above FY 2004. NNSA employs a comprehensive and robust security posture designed to protect national security assets at NNSA sites and facilities. Funding supports the hiring and training of additional protective force personnel; initiation of physical security system upgrades; cyber security infrastructure upgrades; materials control and accountability; and application of emerging technologies. The increase supports heightened physical security levels at NNSA sites; implementation of the new Design Basis Threat and two security line item construction projects. One is a project engineering and design ($17.0) funding with two subprojects Nuclear Material Safeguards and Security Upgrade Project, Phase II at LANL ($10.0) and Security Improvements Project at Y-12 National Security Complex ($7.0). The second project is the Security Perimeter at LANL ($20.0).

Section 1. Defense Strategic Goal / General Goal 2. Nuclear Nonproliferation

Defense Nuclear Nonproliferation – NNSA

(discretionary dollars in thousands)

	FY 2003 Comparable Approp	FY 2004 Comparable Approp	FY 2005 Congress Request	FY 2005 vs. FY 2004	
Defense Nuclear Nonproliferation					
Nonproliferation and verification R&D	256,092	231,997	220,000	-11,997	-5.2%
Nonproliferation and international security	130,873	114,084	124,000	+9,916	+8.7%
Nonproliferation programs with Russia					
International materials protection, control and cooperation	333,029	258,487	238,000	-20,487	-7.9%
Russian transition initiative	39,081	39,764	41,000	+1,236	+3.1%
HEU transparency implementation	17,118	17,894	20,950	+3,056	+17.1%
International nuclear safety and cooperation	33,570	——	——	——	——
Elimination of weapons-grade plutonium production program	49,221	65,035	50,097	-14,938	-23.0%
Accelerated materials disposition	894	——	——	——	——
Fissile materials disposition	445,528	652,818	649,000	-3,818	-0.6%
Total, Nonproliferation programs with Russia	918,441	1,033,998	999,047	-34,951	-3.4%
Offsite source recovery project	2,172	1,961	5,600	+3,639	+185.6%
Subtotal, Defense Nuclear Nonproliferation	1,307,578	1,382,040	1,348,647	-33,393	-2.4%
Use of prior year balances and other adjustments	-84,125	-48,000	——	+48,000	+100.0%
Total, Defense Nuclear Nonproliferation	**1,223,453**	**1,334,040**	**1,348,647**	**+14,607**	**+1.1%**

PROGRAM DESCRIPTION

NNSA's **Defense Nuclear Nonproliferation** (NN) program prevents the spread of materials, technology, and expertise relating to weapons of mass destruction; detects the proliferation of weapons of mass destruction worldwide; provides for international nuclear safety; and eliminates inventories of surplus fissile materials usable for nuclear weapons. It addresses the danger that hostile nations or terrorist groups may acquire weapons of mass destruction or weapons-usable material, dual-use production technology, or weapons of mass destruction expertise. Work will be done in the following major areas:

Nonproliferation and Verification Research and Development advances proliferation detection, nuclear explosion monitoring, and conducts technical demonstrations to find the means for timely detection of potential threats to national security.

Nonproliferation and International Security administers a series of programs to detect, prevent, and reverse proliferation by securing weapons of mass destruction materials, technology, and expertise including strengthening international nonproliferation regimes, promoting transparent nuclear reduction, limiting the production and use of weapon-usable fissile materials around the world, reducing the size of the Russian nuclear weapons complex, and controlling sensitive exports. In addition, this program strengthens national security by helping to prevent nuclear incidents and accidents at foreign nuclear facilities, and mitigating the consequences of accidents should they occur.

Nonproliferation Programs with Russia includes the following programs:

International Nuclear Materials Protection and Cooperation installs physical security and accounting upgrades to secure Russian nuclear weapons and weapons-usable material against theft; locates, secures, and consolidates radiological materials which could be used for dirty bombs; consolidates Russian nuclear material into fewer sites

where enhanced security systems have been installed; converts weapons grade Highly Enriched Uranium (HEU) to Low Enriched Uranium (LEU); and helps to secure borders against smuggling of nuclear materials.

Russian Transition Initiatives works to redirect Russian nuclear weapons expertise by engaging former weapons scientists in non-military research and commercial ventures.

Highly Enriched Uranium Transparency Implementation monitors the conversion and blend-down of Russian weapons-usable HEU to LEU product delivered to the United States for sale by the U.S. Enrichment Corporation. This program implements the nonproliferation aspects of a February 1993 agreement between the United States and the Russian Federation covering the U.S. purchase, over 20 years, of LEU derived from at least 500 metric tons of highly enriched uranium removed from dismantled Russian nuclear weapons.

Elimination of Weapons-Grade Plutonium Production assists the Russian Federation to cease its production of weapons-grade plutonium by replacing plutonium-producing nuclear reactors with fossil-fueled power plants to provide alternative supplies of heat and electricity, and to provide needed safety upgrades and facilitate shutdown of the reactors.

Fissile Materials Disposition conducts parallel activities in the United States and Russia to dispose of surplus weapons-grade fissile materials that pose a threat to the United States if acquired by hostile nations or terrorist groups. Activities include the design and construction of a MOX Fuel Fabrication Facility that is central to the disposition of surplus plutonium by conversion into nuclear reactor fuel. Disposing of this surplus fissile material in the United States also helps meet compliance requirements associated with the cleanup and closure of former DOE nuclear weapons complex sites and honors commitments made to the state of South Carolina for removal of the surplus materials brought to the Savannah River Site for disposition.

Offsite Source Recovery recovers and stores excess and unwanted domestic sealed radioactive sources to reduce the risk of these sources falling into the hands of terrorists and being used against the United States in the form of radiological dispersion devices. The program works closely with the U.S. Nuclear Regulatory Commission (NRC) to prioritize source recovery.

PROGRAM HIGHLIGHTS

The FY 2005 request of $1.35 billion is $15 million above the FY 2004 Comparable Appropriation. Funding for plutonium disposition in the United States will continue at the level required for the construction of facilities to convert weapons-grade plutonium into fuel for commercial reactors in parallel with a similar program in the Russian Federation. Sustained funding in the International Materials Protection and Cooperation program emphasizes: protecting strategic rocket force sites in Russia, securing radiological materials in partner countries against diversion for radiological dispersion devices, and deterring trafficking in illicit nuclear materials. Construction of fossil-fueled power plants located in Seversk and Zheleznogorsk will continue, so that heat and electricity from plutonium-producing reactors can be replaced and plutonium production halted. The Nonproliferation and International Security program request has been increased over FY 2004 levels to allow for an expansion of export control operations, and to purchase and secure HEU from research reactors in Russia.

The Global Partnership Against the Spread of Weapons and Materials of Mass Destruction, formed at the Kananaskis Summit in June 2002 recommitted the G8 nations (United States, Canada, France, Germany, Italy, Japan, Russia, and the United Kingdom) to address nonproliferation, disarmament, counter-terrorism, and nuclear safety issues. The G8 leaders pledged to devote up to $20 billion over 10 years to support cooperative efforts (initially in

Russia) and have invited other similarly motivated countries to participate in this partnership. President Bush has committed the United States to provide $10 billion over 10 years to be matched by $10 billion from the other members, confirming that nonproliferation concerns are of the highest government priority; and that this program's work is of paramount importance for the security of the Nation and the world. While progress in these programs has proven to be more than a matter of devoting resources to the problems, the results achieved by Presidents Bush and Putin in their summit discussions are hopeful and contain positive signs in the future for full and complete cooperation in these critical matters.

SIGNIFICANT FUNDING CHANGES – FY 2004 to 2005 Request ($ in millions)

Nonproliferation and Verification R&D (FY 2004 $232.0; FY 2005 $220.0) ..... -$12.0
FY 2005 request continues efforts in Proliferation Detection, Nuclear Explosion Monitoring, and Supporting Activities, as follows:

Proliferation Detection (FY 2004 $126.1; FY 2005 $111.5)..... -$14.6
Decrease is attributed to the completion of FY 2004 congressionally directed activities that require no further funding in FY 2005.

Nuclear Explosion Monitoring (FY 2004 $96.6; FY 2005 $101.9)..... +$5.3
Increase for the Space and Atmospheric Burst Reporting System, the production of a high altitude-monitoring payload for the Spaced-based Infrared (SBIRS) satellite system, to meet Air Force launch schedules.

Supporting Activities
(FY 2004 $9.2; FY 2005 $6.5)..... -$2.7
Decrease reflects the FY 2004 congressional direction to complete and provide the last year of funding in FY 2004 for the PASSCAL Instrument Center.

Nonproliferation and International Security (FY 2004 $114.1; FY 2005 $124.0)..... +$9.9
FY 2004 request includes:

Nonproliferation Policy (FY 2004 $57.6; FY 2005 $63.2)..... +$5.6
Increase reflects the cost for a second purchase of Russian HEU research reactor fuel, and restoration of funding to the level needed to support planned annual HEU purchase, partially offset by a decrease in the Kazakhstan Spent Fuel Disposition due to the use of prior year balances.

Export Control Operations (FY 2004 $15.7; FY 2005 $22.2) ..... +$6.5
Increase helps establish and strengthen export control authorities in foreign countries beyond the former Soviet Union, particularly in emerging supplier states and critical transshipment states in the Middle East, South Asia, and East Asia; and enables the program to assist US agencies, particularly the Department of Homeland Security, to strengthen capabilities to identify proliferation-sensitive commerce and review shipments for proliferation risk.

International Safeguards (FY 2004 $34.0; FY 2005 $31.3) ..... -$2.7
Decrease reflects the elimination of one-time FY 2004 funding increases for initiatives to remove nuclear weapons-usable material from vulnerable sites around the world. Remaining work includes strengthening IAEA safeguards negotiation and implementation of cooperative agreements, and nuclear-noncompliance verification.

Treaties and Agreements (FY 2004 $2.8; FY 2005 $3.2) ..... +$0.5
Increase positions program to respond to emerging time-critical issues of an emergent nature.

Nonproliferation Programs with Russia (FY 2004 $1,034.0; FY 2005 $999.1) ..... -$34.9
Cumulative funding in these programs reflects the Administration's decision to proceed with construction of the MOX Fuel Fabrication Facility, the resolve to complete the protection of vulnerable materials, and the determination to deter illicit trafficking in nuclear materials. The FY 2005 request includes funding for the following programs and their components:

International Nuclear Materials Protection and Cooperation
(FY 2004 $258.5; FY 2005 $238.0) ..... -$20.5

Navy Complex (FY 2004 $38.0; FY 2005 $15.0) ..... -$23.0
Decrease due to the completion of upgrades at a majority of Russian Navy warhead sites in FY 2004 and the transition to sustainability activities.

Strategic Rocket Forces (FY 2004 $24.0; FY 2005 $45.0) ..... +$21.0
Increase due to the initiation of MPC&A comprehensive upgrades at 3 additional sites.

MinAtom Weapons Complex (FY 2004 $32.5; FY 2005 $43.0) ..... +$10.5
Increase reflects start of MPC&A rapid/comprehensive upgrades to additional areas within 3 sites.

Material Consolidation and Conversion and Civilian Nuclear Sites
(FY 2004 $48.0; FY 2005 $44.0) ..... -$4.0
Decrease in Materials Consolidation and Conversion (MCC) due to a decrease in the number of buildings scheduled to be cleared of all weapons-usable material and no congressional funding of accelerated MCC. Decrease in civilian sites due to progress made in FY 2004 to initiate and ramp-up of MPC&A cooperation with countries outside of Russia and the former Soviet States begun in FY 2004.

Radiological Dispersion Devices (FY 2004 $36.0; FY 2005 $25.0) ..... -$11.0
Decrease due to the completion in FY 2004 of MPC&A security upgrades to the Russian RADON nuclear waste sites.

National Programs and Sustainability
(FY 2004 $28.0; FY 2005 $27.0) ..... -$1.0
Decrease due to a reprioritization of all MPC&A program activities to support MPC&A upgrades in countries outside of Russia and the former Soviet States.

Second Line of Defense (SLD) (FY 2004 $52.0, FY 2005 $39.0) ..... -$13.0
SLD, including the **Megaports Program**, helps to detect the illicit trafficking in nuclear and radiological materials across Russian and other international borders through installation of radiation detection equipment. Decrease due to the completion of radiation detection equipment installations in Greece and Slovenia and the majority of sites in Russia, partially offset by an increase for the purchase and installation of radiation detection equipment at one additional MegaSeaport.

Russian Transition Initiatives (FY 2004 $39.8; FY 2005 $41.0) ..... +$1.2
Increase will enable the program to expand its engagement in the weapons institutes.

HEU Transparency Implementation (FY 2004 $17.9; FY 2005 $21.0) ..... +$3.1
Increase reflects the costs to upgrade the Blend Down Monitoring System at the Ural Electrochemical Integrated Plant (UEIP) and to increase from 22 to 24 the number of Special Monitoring Visits (SMVs) to the Russian HEU processing facilities.

Elimination of Weapons-Grade Plutonium Production
(FY 2004 $65.0; FY 2005 $50.1) ..... -$14.9
Apparent decrease is due to the reappropriation of $15.3 million in funds transferred from the DoD Cooperative Threat Reduction program in FY 2004.

Fissile Materials Disposition (FY 2004 $652.8; FY 2005 $649.0)..... -$3.8
Level funding in FY 2004 and FY 2005 will be allocated to construction activities for U.S. plutonium disposition via conversion to mixed oxide fuel for consumption in commercial reactors; and to increased work-scope in the U.S. uranium disposition program. In FY 2005 equipment procurement for the MOX FFF will be initiated and construction begun.

U.S. Surplus Fissile Materials Disposition
(FY 2004 $605.8; FY 2005 $585.0)..... -$20.8
Overall decrease reflects relatively small decreases in both O&M and construction activities as follows:

U.S. Surplus Fissile Materials Disposition O&M
(FY 2004 $192.7; FY 2005 $184.7)..... -$8.0
Decrease due to reduction of integrated demonstration activities at LANL on Pit Disassembly and Conversion, somewhat offset by increased activities in the off-specification HEU Blend Down Project, including TVA off-specification project integration activities, additional Y-12 HEU shipments, increased SRS down-blending and LEU and HEU shipment operations, laboratory analyses of product material, payments to TVA for Uranium/Aluminum ingot processing, and vendor waste returns work.

Construction (FY 2004 $413.1; FY 2005 $400.3)..... -$12.8
Decrease in the U.S. MOX Fuel Fabrication Facility (FFF) (FY 2004 $399.6; FY 2005 $368.0) at the Savannah River Site, South Carolina, reflects delay of actual construction from FY 2004 to FY 2005. Increase in the Pit Disassembly and Conversion Facility (PDCF) (FY 2004 $13.5; FY 2005 $32.3) reflects beginning of the detailed design of the Waste Solidification Building, and long-lead procurement and site clearing for the PDCF also at SRS.

Russian Plutonium Disposition (FY 2004 $47.0; FY 2005 $64.0) ..... +$17.0
Increase due to detailed Russian adaptation of the U.S. MOX FFF design, and the progression from site preparation to actual construction of the facility in Russia.

Offsite Source Recovery Program (FY 2004 $2.0; FY 2005 $5.6) ..... +$3.6
Increase is to accelerate the recovery of excess and unwanted sealed radioactive sources and to mitigate the risks that unprotected sources pose to homeland security.

Section 1. Defense Strategic Goal / General Goals 1 and 2

Office of the Administrator – NNSA

(discretionary dollars in thousands)

	FY 2003 Comparable Approp	FY 2004 Comparable Approp	FY 2005 Congress Request	FY 2005 vs. FY 2004	
Office Of The Administrator					
Office of the administrator.....	**330,314**	**336,826**	**333,700**	**-3,126**	**-0.9%**

PROGRAM DESCRIPTION

The NNSA **Office of the Administrator** account provides the corporate direction, federal personnel, and resources necessary to plan, manage, and oversee the operation of the National Nuclear Security Administration (NNSA) under the direction of the Department's Under Secretary for Nuclear Security. The workforce is comprised of a highly educated and skilled cadre of federal managers overseeing the operations of nuclear weapons stewardship and nonproliferation programs and performing many specialized duties including leading emergency response teams and oversight of safeguards and security. The Naval Reactors and the Secure Transportation Asset programs retain separately funded program direction accounts.

The organizational structure implemented in FY 2004 relies on eight site offices reporting directly to the NNSA Administrator through the principal deputy. The federal site offices that oversee NNSA contractor operations are located at Lawrence Livermore, Los Alamos, and Sandia National Laboratories; Pantex and Kansas City plants; Y-12 National Security Complex; Savannah River site; and the Nevada Test Site. The NNSA Service Center in Albuquerque provides procurement, human resources, and other support services to site offices.

PROGRAM HIGHLIGHTS

The NNSA re-engineering efforts announced in December 2002 support the **President's Management Agenda** by creating a more robust and effective NNSA organization. The FY 2005 request reflects the results of the reorganization that decreased staffing levels and streamlined support for corporate management and oversight of the nuclear weapons stewardship and nonproliferation programs. The NNSA is on a course to achieve a 15 percent reduction, since FY 2002, in the federal workforce funded by this account at the end of FY 2005. The goal is to complete all personnel reassignments by the end of FY 2004 with any remaining funding requirements such as personal change of station moves completed in early FY 2005. The Defense Nuclear Nonproliferation and Nuclear Weapons Incident Response programs are excluded from staff reductions due to increased program requirements in those areas.

The Office of the Administrator request is comprised of 65 percent salaries and benefits for NNSA federal staff. The remaining 35 percent includes several major efforts with largely fixed costs in the areas of Information Technology, Working Capital Fund, and support for international offices and a small percentage of spending in the areas of travel, training, and support services.

SIGNIFICANT FUNDING CHANGES – FY 2004 to 2005 Request ($ in millions)

Office of the Administrator (FY 2004 $336.8; FY 2005 $333.7).....-$3.1
FY 2005 request decreases by 0.9 percent, which is consistent with the NNSA reorganization and the accelerated attrition assumed for staffing levels.

Naval Reactors

(discretionary dollars in thousands)

	FY 2003 Comparable Approp	FY 2004 Comparable Approp	FY 2005 Congress Request	FY 2005 vs. FY 2004	
Naval Reactors					
Naval reactors development	678,153	737,326	768,400	+31,074	+4.2%
Program direction	24,043	26,552	29,500	+2,948	+11.1%
Subtotal, Naval Reactors	702,196	763,878	797,900	+34,022	+4.5%
Use of prior year balances and other adjustments	——	-2,000	——	+2,000	+100.0%
Total, Naval Reactors	**702,196**	**761,878**	**797,900**	**+36,022**	**+4.7%**

PROGRAM DESCRIPTION

The **Naval Reactors** (NR) program has responsibility for all naval nuclear propulsion work, beginning with technology development, continuing through design, construction, testing, operation, maintenance, and, ultimately, reactor plant disposal.

The program's efforts ensure the safe operation of reactor plants in operating nuclear-powered submarines and aircraft carriers, which comprise 40 percent of the Navy's total combatants. The program's long-term development work ensures that nuclear propulsion technology can meet requirements to maintain and upgrade current capabilities, as well as meet future threats to U.S. security.

The NR program also fulfills the Navy's needs for new reactors to meet evolving national defense requirements. This includes the development and delivery of the next-generation reactor for the Navy's new VIRGINIA-class submarine and the design and development of a new reactor for the CVN 21-class aircraft carrier. These new plants will be more affordable and have improved power capabilities, increased endurance, and added dependability compared to current plants.

PROGRAM HIGHLIGHTS

The FY 2005 request provides $797.9 million for Naval Reactors; an increase of $36.0 million above the FY 2004 comparable appropriation. Funding supports continuing efforts to ensure the safety and reliability of the 103 operating naval reactor plants, to upgrade and improve existing reactor plants, and to develop new reactor plants for the VIRGINIA-class submarine and CVN 21-class aircraft carrier programs.

SIGNIFICANT FUNDING CHANGES – FY 2004 to 2005 Request ($ in millions)

Naval Reactors (FY 2004 $761.9; FY 2005 $797.9) ..... +$36.0
Increases in Operations and Maintenance and Program Direction partially offset by a decrease in Construction funding as follows.

Operations and Maintenance (FY 2004 $718.8; FY 2005 $761.2) ..... +$42.4
Includes increases in: Plant Technology to continue work on the design of the Transformational Technology Core (TCC) and for equipment specifications for CVN 21 and TTC; Materials Development and Verification for increased testing of materials used in nuclear fuel systems for stress, corrosion, and irradiation; Evaluation and Servicing for

increased efforts to support moving waste from wet to dry storage at the Naval Reactors Facility (NRF) in Idaho; offset by a decrease due to deferred remediation efforts at program facilities. Also reflects an increase in Facility Operations.

Program Direction (FY 2004 $26.6; FY 2005 $29.5) ..... +$2.9
Increase due to salary adjustments for inflation and to achieve FTE target in FY 2005.

Construction (FY 2004 $18.5; FY 2005 $7.2) ..... -$11.3
Decrease primarily reflects completion of funding stream required for the Expended Core Facility Dry Cell, NRF, Idaho.

SECTION 2. ENERGY STRATEGIC GOAL

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

	FY 2003 Comparable Approp	FY 2004 Comparable Approp	FY 2005 Congress Request	FY 2005 vs. FY 2004	
Energy Security					
Energy Efficiency and Renewable Energy	1,202,326	1,235,478	1,250,745	+15,267	+1.2%
Electric Transmission and Distribution	88,384	80,818	90,880	+10,062	+12.5%
Fossil Energy	797,512	804,653	728,899	-75,754	-9.4%
Nuclear Energy, Science and Technology	375,441	404,820	409,591	+4,771	+1.2%
Energy Information Administration	80,087	81,100	85,000	+3,900	+4.8%
Power Marketing Administrations	202,181	213,026	210,479	-2,547	-1.2%
Colorado River Basins	-22,000	-22,000	-23,000	-1,000	-4.5%
Total, Energy Security	**2,723,931**	**2,797,895**	**2,752,594**	**-45,301**	**-1.6%**

The Energy Strategic Goal is supported by the following general goal:

General Goal 4. Energy Security: Improve energy security by developing technologies that foster a diverse supply of reliable, affordable, and environmentally sound energy by providing for reliable delivery of energy, guarding against energy emergencies, exploring advanced technologies that make a fundamental improvement in our mix of energy options, and improving energy efficiency.

The following programs contribute to this goal:

Energy Efficiency and Renewable Energy

Electric Transmission and Distribution

Fossil Energy

Nuclear Energy, Science and Technology

Energy Information Administration

Power Marketing Administrations

Section 2. Energy Strategic Goal / General Goal 4. Energy Security

Energy Efficiency and Renewable Energy

(discretionary dollars in thousands)

	FY 2003 Comparable Approp	FY 2004 Comparable Approp	FY 2005 Congress Request	FY 2005 vs. FY 2004	
Assistant Secretary For Energy Efficiency And Renewable Energy					
Renewable Energy	322,150	357,494	374,812	+17,318	+4.8%
Energy Conservation	880,176	877,984	875,933	-2,051	-0.2%
Energy Efficiency And Renewable Energy	**1,202,326**	**1,235,478**	**1,250,745**	**+15,267**	**+1.2%**

The **Office of Energy Efficiency and Renewable Energy** (EE) conducts research, development, and deployment activities to advance energy efficiency and clean power technologies and practices. Activities are funded from two Congressional Appropriations, Energy and Water Development which supports Renewable Energy activities within the Energy Supply account, and Interior and Related Agencies which supports Energy Efficiency activities within the Energy Conservation account. The budget information that follows presents the Energy Supply and Energy Conservation accounts separately.

PROGRAM DESCRIPTION

(discretionary dollars in thousands)

	FY 2003 Comparable Approp	FY 2004 Comparable Approp	FY 2005 Congress Request	FY 2005 vs. FY 2004	
Energy Efficiency and Renewable Energy					
Hydrogen technology	38,113	81,991	95,325	+13,334	+16.3%
Solar energy	82,330	83,393	80,333	-3,060	-3.7%
Zero energy buildings	7,572	——	——	——	——
Wind energy	41,640	41,310	41,600	+290	+0.7%
Hydropower	5,016	4,905	6,000	+1,095	+22.3%
Geothermal technology	28,390	25,508	25,800	+292	+1.1%
Biomass and biorefinery systems R&D	85,283	86,471	72,596	-13,875	-16.0%
Intergovernmental activities	14,449	14,720	16,000	+1,280	+8.7%
Electricity reliability	——	——	——	——	——
Departmental energy management program	1,445	1,963	1,967	+4	+0.2%
International renewable energy program	——	——	——	——	——
Renewable energy production incentive program	——	——	——	——	——
Renewable Indian energy resources	——	——	——	——	——
Renewable program support	——	4,919	——	-4,919	-100.0%
National climate change technology initiative competitive solicitation	——	——	3,000	+3,000	n/a
Facilities and infrastructure	5,297	12,950	11,480	-1,470	-11.4%
Program direction	12,615	12,364	20,711	+8,347	+67.5%
Subtotal, Energy Efficiency and Renewable Energy	322,150	370,494	374,812	+4,318	+1.2%
Use of prior year balances and other adjustments	——	-13,000	——	+13,000	+100.0%
Total, Energy Efficiency and Renewable Energy	**322,150**	**357,494**	**374,812**	**+17,318**	**+4.8%**

Energy Supply

EE's **Energy Supply** activities promote the development and use of clean power technologies to meet growing national energy needs, to reduce dependence on foreign energy sources, and to enhance energy security.

The FY 2005 **Hydrogen Technology** program request increases funding for technology development in support of the President's **Hydrogen Fuel Initiative.** The President's **Hydrogen Fuel Initiative** is a research and development initiative focused on hydrogen fuel production, storage, distribution and infrastructure. The Hydrogen Initiative complements the **FreedomCAR Partnership**, which aims to develop technologies needed to enable the mass production of affordable, practical hydrogen powered fuel cell vehicles. Together, the FreedomCAR and Hydrogen Fuel Initiative will, through partnerships with the private sector, overcome key technology and cost barriers which will facilitate a fuel cell vehicle and hydrogen infrastructure commercialization decision by industry in the year 2015, allowing rapid market penetration and significant oil displacement for the year 2020 and beyond. The Administration has pledged over $1.7 billion in spending on the FreedomCAR and Hydrogen Fuel Initiative over 5 years (FY 2004-2008). These activities will be closely coordinated with hydrogen and fuel cell related activities in DOE's Science, Fossil Energy, Nuclear Energy, Science and Technology programs, and the U.S. Department of Transportation.

The **Solar Energy** program pursues ways to help meet America's energy needs through the development of efficient, reliable, and affordable solar energy systems that convert sunlight into electrical power, space heat, hot water, and lighting. Based on an independent engineering review of the Concentrating Solar Power technology, the Department will suspend R&D activities for this subprogram while an assessment of evolving technological opportunities is conducted and a revised program plan is developed.

The **Wind Energy** program focuses on low wind speed technology for small and large wind turbines to enable economically competitive wind power use in moderate wind resource areas, research for integrating wind power into electric power grids and distributed power applications, and technical assistance to the user community. The **Hydropower** program conducts R&D to develop advanced, environmentally-friendly, hydropower technologies that will enable increased electric power generation at existing plants and undeveloped hydropower capacity to be harnessed without the construction of new dams.

The **Geothermal Technology** program conducts research and develops advanced technologies to establish geothermal energy as an economically competitive contributor to the U.S. energy supply by capturing heat from the earth and converting it into electricity and usable thermal energy. The program develops innovative technologies to find, access, and use the Nation's geothermal resources. These efforts include emphasis on Enhanced Geothermal Systems with continued R&D on geophysical and geochemical exploration technologies, improved drilling systems, and more efficient heat exchangers and condensers.

The **Biomass and Biorefinery Systems R&D** program focuses on three major areas: (a) Feedstock Infrastructure, to reduce the cost of collecting and preparing raw biomass; (b) Platforms R&D, to reduce the cost of outputs and byproducts from biochemical and thermochemical processes; and (c) Utilization of Platform Outputs, to develop technologies and processes that co-produce liquid and gaseous fuels, chemicals and materials, and heat and power, and integrate those technologies and processes into biorefinery configurations.

Funding for **Intergovernmental Activities** supports bilateral and multilateral agreements related to renewable energy. The program also builds partnerships with international energy organizations and Native American tribal governments to expand the development of energy efficiency and renewable energy technology choices for consumers and businesses.

The **Departmental Energy Management** activities provide technical assistance and direct funding for DOE energy efficiency projects which promise to yield the greatest energy savings and return on investment. The **National Climate Change Technology Initiative Competitive Solicitation** program is part of a government-wide effort to coordinate and foster development of innovative applied research aimed at reducing and/or sequestering greenhouse gas emissions. The **Facilities and Infrastructure** activity supports capital investments essential to support a world-class research and development program at major EE related DOE laboratory sites. Groundbreaking will take place this year for a new Science and Technology Facility at the National Renewable Energy Laboratory that will be used to develop lower-cost photovoltaic materials.

(discretionary dollars in thousands)

	FY 2003 Comparable Approp	FY 2004 Comparable Approp	FY 2005 Congress Request	FY 2005 vs. FY 2004	
Energy Conservation					
Vehicle technologies	174,171	178,002	156,656	-21,346	-12.0%
Fuel cell technologies	53,906	65,187	77,500	+12,313	+18.9%
Weatherization & intergovermental activities	314,155	308,612	364,067	+55,455	+18.0%
Distributed energy resources	60,054	61,023	53,080	-7,943	-13.0%
Building technologies	58,327	59,866	58,284	-1,582	-2.6%
Industrial technologies	96,824	93,068	58,102	-34,966	-37.6%
Biomass and biorefinery systems R&D	24,050	7,506	8,680	+1,174	+15.6%
Federal energy management program	19,299	19,716	17,900	-1,816	-9.2%
Program management	76,950	85,004	81,664	-3,340	-3.9%
Energy efficiency science initiative	2,440	——	——	——	——
Total, Energy Conservation	**880,176**	**877,984**	**875,933**	**-2,051**	**-0.2%**

Energy Conservation

The overall goal of EE's **Energy Conservation** funded programs is to develop technologies that can provide efficient, cost-effective, clean, and reliable energy services when and where they are needed. These activities assist all energy-consuming sectors of the economy: buildings, industrial use, transportation, power generation, and federal facilities. EE's Energy Conservation budget request includes the following programs.

Vehicle Technologies supports the **FreedomCAR** and 21st Century Truck partnerships with industry. The **Fuel Cells Technologies** program supports both the **President's Hydrogen Fuel Initiative** and the **FreedomCAR Partnership**. The Vehicle Technologies program funds research on technologies such as advanced lightweight materials, advanced batteries, improved power electronics, hybrid electric systems, and advanced combustion engines to enable light- and heavy-duty highway transportation to become dramatically more efficient. The overall Hydrogen, Fuel Cells and Infrastructure Technologies program (funded by both Energy Supply and Conservation appropriations) directs research, development, and validation of fuel cell and hydrogen production, delivery, and storage technologies for transportation and stationary applications. Energy Conservation funds support fuel cell power systems RD&D efforts.

The **Weatherization and Intergovernmental Activities** program (funded by both Energy Supply and Conservation appropriations) deploys energy efficient and renewable energy products into the marketplace, and funds Weatherization Assistance and State Energy Program grants. **Weatherization Assistance Grants** deliver cost-effective, energy efficiency investments in the housing of low-income families. The **State Energy Program** supports energy efficiency projects in states and communities through formula grants and competitive awards. The **Distributed Energy Resources** program performs research and development to transform the flexibility and efficiency of the existing electric generation sector. The **Building Technologies** program

develops, promotes, and integrates energy technologies and practices to make buildings more efficient and affordable. The **Industrial Technologies** program, partners with industry, to conduct cost-shared energy-saving research and provides technical assistance, tools, and training to improve industrial energy efficiency. The **Biomass and Biorefinery Systems R&D** program works to reduce processing energy requirements and production costs in biomass processing plants and future integrated industrial biorefineries. The **Federal Energy Management Program** (FEMP) program advances energy efficiency and water conservation and promotes the use of distributed and renewable energy by developing alternative financing options and providing direct technical assistance and training for federal agencies. The **Program Management** account provides the resources necessary to effectively manage the programs described above.

PROGRAM HIGHLIGHTS

The FY 2005 request proposes several program shifts to more efficiently and effectively meet national energy needs. These budget shifts reflect application of the R&D Investment Criteria and the Program Assessment Rating Tool developed as part of the President's Management Agenda.

Energy Supply

The request for the **Hydrogen Technology** program ($95.3 million) includes a funding increase ($13.3 million) to support the President's **Hydrogen Fuel Initiative**. The additional funding will go towards increasing safety and systems analysis activities.

The **National Climate Change Technology Initiative Competitive Solicitation** program funding request of $3.0 million will spur innovation of technologies based on their potential to reduce, avoid, or capture greenhouse gas emissions. This will be done through targeted competitively awarded grants for climate change R&D on high-priority areas for breakthrough technologies.

Funding for **Biomass and Biorefinery Systems R&D** activities ($72.6 million) in FY 2005 is reduced by $13.9 million relative to the FY 2004 appropriated level which includes $40.7M in Congressionally directed projects, but is slightly higher than the FY 2004 request ($69.7 million). The FY 2005 request reflects the completion and close-out of the Small Modular Biopower activity and program focus on priority feedstock infrastructure, platform, and utilization R&D. USDA and DOE will also continue to collaborate on an annual competitive solicitation aimed at research, development and demonstrations. This joint activity began in FY 2002.

FY 2005 continues funding for the new Science and Technology Facility (STF) at the **National Renewable Energy Laboratory** (NREL). Design work was completed in FY 2003. Construction will begin in the 4th quarter of FY 2004 and will be completed at the end of FY 2006, providing expanded laboratory space and new capabilities, particularly for the Solar Energy and Hydrogen Technology programs.

Energy Conservation

The President's **Hydrogen Fuel Initiative** continues strong support for research and development focused on hydrogen fuel production, storage, distribution and infrastructure. The Hydrogen Initiative complements the **FreedomCAR** Partnership, which aims to develop technologies needed to enable the mass production of affordable, practical hydrogen powered fuel cell vehicles. Together, the FreedomCAR Partnership and Hydrogen Fuel Initiative will, through partnerships with the private sector, overcome key technology and cost barriers which will facilitate a fuel cell vehicle and hydrogen infrastructure commercialization decision by industry in the year 2015, allowing rapid market penetration and significant oil displacement for the year

2020 and beyond. These activities are closely coordinated with hydrogen and fuel cell related activities in the DOE programs for Science, Fossil Energy, Nuclear Energy, Science and Technology, and the U.S. Department of Transportation.

The FY 2005 budget request for **Weatherization Assistance Grants** program includes a funding increase of $64 million to support the Administration's commitment to fund the program by $1.4 billion over 10 years and assist 1.2 million families.

Within Building Technologies, the request of $58.3 million includes $10.2 million to accelerate development of **Solid State Lighting** technologies for general illumination that could achieve energy efficiencies as high as 70 percent.

The FY 2005 request reduces or closes out several program efforts that were identified as complete, unable to provide high levels of public benefit, or have reached a point where federal funding is no longer appropriate. For instance, within Industrial Technologies the **Industries of the Future, Specific** subprogram will be reduced by 53 percent relative to FY 2004. The funding requested will allow for successful completion of prioritized, existing, high-payoff projects and concludes work on near-term commercialization efforts that industry can complete on its own. Funded research projects will contribute to a 20- to 25-percent decrease in energy intensity by the participating industries.

SIGNIFICANT FUNDING CHANGES – FY 2004 to 2005 Request ($ in millions)

Energy Supply

Hydrogen Research (FY 2004 $82.0; FY 2005 $95.3) ..... +$13.3
Funding supports the President's Hydrogen Fuel Initiative. Increase supports implementing a comprehensive safety research and evaluation program (+$12.1) for hydrogen technologies. Safety research will provide the technical underpinnings for codes and standards which are necessary for national and international system solutions for vehicles and infrastructure. Safety codes and standards work will be closely coordinated with other agencies and funded on a reimbursable basis as appropriate. Increases include: (+$1.3) for systems analysis of hydrogen pathways to better understand energy, environmental and economic impacts of hydrogen energy systems; (+$2.7) for research to lower the cost of renewable production of hydrogen; and (+$0.5) to develop compact, light weight storage systems. A decrease in infrastructure validation (-$3.3) reflects less emphasis on fuel cell demonstration activities.

Biomass and Biorefinery Systems R&D (FY 2004 $86.5; FY 2005 $72.6). ..... -$13.9
Decrease reflects close-out of the Small Modular Biopower activity, and discontinuation of Congressionally directed activities while increasing activities that will reduce the cost of producing biomass-derived synthesis gas and fermentation of multiple biomass-derived sugars.

National Climate Change Technology Initiative (FY 2004 $0; FY 2005 $ 3.0) ..... +$3.0
Funding supports the competitive solicitation program under the President's National Climate Change Technology Initiative.

Facilities and Infrastructure (FY 2004 $13.0; FY 2005 $11.5) ..... -$1.5
The net change reflects a reduction (-$4.9) from discontinuation of the Congressionally directed National Center on Energy Management and Building Technologies, and increases for operations and maintenance at NREL (+$0.7) and for construction of the Science and Technology Facility (+$2.8).

Program Direction (FY 2004 $12.4; FY 2005 $20.7) ..... +$8.3
Funding supports an increase of 22 FTEs and additional funding for oversight and implementation of renewable energy and hydrogen R&D programs, to ensure that taxpayer funds are well spent (+$5.3M). Also, funding is requested to support integrated federal planning, analysis of technology impacts, and evaluation of presently available modeling capabilities for the U.S. Climate Change Technology Program (+$3.0M).

Energy Conservation

Vehicle Technologies (FY 2004 $178.0; FY 2005 $156.7) ..... -$21.3
Funding for Hybrid and Electric Propulsion is increased (+$6.8) reflecting an emphasis on long-term and high risk storage technologies, the decision to investigate more thermal management technologies, and the acceleration of the testing of fuel cell light vehicles and the testing of power electronics controls in heavy vehicles. Combustion and Emission Control R&D (-$18.5) is decreased, because the light truck engine work was completed in FY 2004, and the Off-Highway Engine R&D effort was terminated. Funding for Fuels Technologies is reduced (-$9.7) because further development of emission control devices is within the capability of industry, all activities related to fuels for light vehicles are terminated, the transportable emission laboratory is terminated, and the natural gas work for medium and heavy trucks and for infrastructure is terminated because the technology is mature. Funding for Technology Introduction increases (+$1.1) to improve the data collection and compliance tracking for the fleet mandate.

Fuel Cell Technologies (FY 2004 $65.2; FY 2005 $77.5) ..... +$12.3
All EE fuel cell activities will support the **FreedomCAR** and **Hydrogen Fuel Initiative**. Increase supports research to reduce costs of critical Stack Components (+$4.8) and Technology Validation activities (+$8.1) to evaluate performance and reliability of integrated components through fuel cell development and testing. Reductions in Fuel Processor R&D (-$1.0) reflect the decrease in mortgages for on-board vehicle fuel processing R&D.

Weatherization and Intergovernmental Activities
(FY 2004 $308.6; FY 2005 $364.1)..... +$55.5
Increased funding for Weatherization Assistance Grants ($291.2, +$64) supports Administration's commitment to weatherize the homes of 1.2 million families over 10 years. Gateway Deployment activities (-$5.5) decrease reflects increased efficiencies in program delivery and greater leveraging for partnership support for the Rebuild America, Clean Cities, and Inventions and Innovations programs.

Distributed Energy Resources (FY 2004 $61.0; FY 2005 $53.1) ..... -$7.9
Funding reduces scope in contracts perceived to be within industry's capabilities.

Industrial Technologies (FY 2004 $93.1; FY 2005 $58.1)..... -$35.0
During FY 2005, activities with specific industries (forest products, glass, metal casting, steel, aluminum, mining, and chemicals) will focus on the successful completion of existing projects with the highest potential future energy efficiency and environmental benefits. New projects will be selected that are unlikely to be undertaken without federal support that significantly reduce energy intensity and that are in alignment with the Administration's R&D investment criteria.

Electric Transmission and Distribution

(discretionary dollars in thousands)

	FY 2003 Comparable Approp	FY 2004 Comparable Approp	FY 2005 Congress Request	FY 2005 vs. FY 2004	
Electric Transmission and Distribution					
Research and development	80,439	69,467	75,679	+6,212	+8.9%
Electricity and energy assurance	——	——	——	——	——
High temperature superconducting R&D	——	——	——	——	——
Electricity restructuring	4,816	6,925	5,000	-1,925	-27.8%
Program direction	3,129	3,690	10,201	+6,511	+176.4%
Construction	——	736	——	-736	-100.0%
Total, Electric Transmission and Distribution	**88,384**	**80,818**	**90,880**	**+10,062**	**+12.5%**

PROGRAM DESCRIPTION

The newly created **Electric Transmission and Distribution** (ETD) program is leading a national effort to modernize and expand America's electricity delivery system to ensure a more reliable and robust electricity supply, as well as economic and national security, and reduce the likelihood and impact of reliability events, including blackouts. This effort is accomplished through research, development, demonstration, policy, technology transfer, and education and outreach activities in partnership with industries, businesses, utilities, States, other Federal programs and agencies, universities, national laboratories, and stakeholders. ETD's primary focus consists of two programs: (1) **Research and Development**, which includes six subprograms: High Temperature Superconductivity R&D; Transmission Reliability R&D; Electric Distribution Transformation R&D, Energy Storage R&D; GridWorks, and GridWise; and (2) **Electricity Restructuring**.

This program will also develop and coordinate a comprehensive multi-year strategy to improve the nation's electric transmission and distribution system. Proposed improvements to electricity transmission technology include GridWorks, GridWise, and High Temperature Superconductivity R&D subprogram.

The **GridWise** initiative will bring together energy and information technology industry partners, regulators, and state and federal officials with the goal of moving the current industrial-age electric grid into the information age. This program would: (1) allow customers to control their power use enabling more effective use of electric system assets; (2) optimize grid operations; and (3) provide cost-effective high quality service.

The **GridWorks** initiative focuses on bridging the gap between laboratory prototypes and the application needs of the electric industry. The main focus of GridWorks is to achieve commercial viability for technologies taking an integrated perspective of the entire electric system by developing: (1) advanced conductors and cables, including DC-DC technologies; (2) low-cost and reliable sensors to monitor current flow, voltage, and phase angle throughout the electric system; (3) transformers that are smaller, lighter, and more efficient; and (4) faster protection through advanced power electronics and storage.

High Temperature Superconductivity R&D utilizes the property of certain crystalline materials that become free of electric resistance at, and below, the temperature of liquid nitrogen. This program focuses on: (1) promoting major cable demonstrations in key

bottleneck areas nationwide to reduce congestion; and (2) accelerating second generation wire development.

PROGRAM HIGHLIGHTS

In response to the National Energy Policy, the National Grid Study recommended the creation of ETD to examine the benefits of establishing a national electricity transmission grid and to identify transmission bottlenecks and measures to address them. The FY 2005 budget request is $91 million for ETD activities, an increase over the FY 2004 request of $10.1 million (+12.5 percent). The budget request focuses activities towards longer-term, higher risk activities that the private sector is less likely to undertake without federal support.

SIGNIFICANT FUNDING CHANGES – FY 2004 to 2005 Request ($ in millions)

High Temperature Superconductivity R&D (FY 2004 $34.1; FY 2005 $45.0) ..... +$10.9
Funding increase will allow ETD to: conduct three distinct cable projects at different utility locations to meet various power and voltage requirements; experiment on longer length and more uniform Second Generation HTS wire research moving from 100-meter length wire to 1000-meter length wire with higher current capacity; and design and develop a new generation of more efficient cryogenic refrigeration systems to cool superconductivity equipment to the temperature of liquid nitrogen.

Transmission Reliability (FY 2004 $11.7; FY 2005 $10.7) ..... -$1.0
Reduction in FY 2005 funding reflects completion of $7.3M of congressionally directed activities in FY 2004 that will not be funded in FY 2005. FY 2005 funding continues support to develop real time grid monitoring sensors and accelerate the development and demonstration of voluntary load reduction technologies and activities.

Electric Distribution Transformation R&D (FY 2004 $14.5; FY 2005 $5.4) ..... -$9.2
Reduction in FY 2005 funding reflects completion of $10.6M of congressionally directed activities in FY 2004 that will not be funded in FY 2005. FY 2005 funding initiates new projects to evaluate the impact of distributed energy resources and interconnections with the grid and new demonstration projects in distributed energy resources system integration. Program will also provide support for states and local reforms to remove barriers to distributed energy resources and solicit new projects in distributed sensing, intelligence and control technologies.

Energy Storage R&D (FY 2004 $9.0; FY 2005 $4.0) ..... -$5.0
Reduction in FY 2005 funding reflects completion of $6.9M of congressionally directed activities in FY 2004 that will not be funded in FY 2005. FY 2005 funding supports collaborative demonstration projects with the California Energy Commission; begins data collection of both technical and economic information of energy storage systems performance and provide periodic reports; and completes testing of sodium sulfur battery system in peak sharing and power quality modes at American Electric Power, and issue a final report.

GridWise (FY 2004 $0; FY 2005 $5.0) ..... +$5.0
Increase supports new initiative to develop communications and systems controls to support intelligent grid operations, distributed energy devices and enhance customer electric service. The focus in FY 2005 will be on research that will improve transforming the communication and control systems for the electric grid.

GridWorks (FY 2004 $0; FY 2005 $5.5) ..... +$5.5
New initiative to focus on four major areas: cables and conductors; operator-based control and monitoring; substation and auxiliary equipment; and power electronics. Request

supports accelerated development and testing of advanced composite conductors and deployment of low cost reliable sensors that monitor current flow and voltage throughout the grid.

Electricity Restructuring (FY 2004 $6.9; FY 2005 $5.0)..... -$1.9
Reduction in funding for FY 2005 is due to the completion of the blackout investigation in FY 2004. Recommendations from the blackout investigation will be pursued. FY 2005 funding allows ETD to implement the National Transmission Grid Study's recommendation to identify national interest transmission bottlenecks using a biannual public process and take appropriate action to mitigate these bottlenecks. The program will also conduct an assessment of the economics of major technological alternatives for increasing grid carrying capabilities.

Energy Reliability Efficiency Laboratory (FY 2004 $0.7; FY 2005 $0) ..... -$0.7
Reduction in funding for FY 2005 is due to a delay in completion of PED for the EREL facility.

Program Direction (FY 2004 $3.7; FY 2005 $10.2) ..... +$6.5
Increase in FY 2005 funds 37 FTE, an increase of 18 over FY 2004, to provide executive management, program oversight, analysis and information required for the effective implementation of ETD's mission. The increase also includes the transfer of 6 FTE and associated funding for the Electricity related Import/Export Authorization activities that transfer to ETD from the Fossil Energy program.

Section 2. Energy Strategic Goal / General Goal 4. Energy Security

Fossil Energy

(discretionary dollars in thousands)

	FY 2003 Comparable Approp	FY 2004 Comparable Approp	FY 2005 Congress Request	FY 2005 vs. FY 2004	
Assistant Secretary For Fossil Energy					
Fossil Energy Research and Development	611,149	672,771	635,799	-36,972	-5.5%
Clean Coal Technology	-47,000	-98,000	-140,000	-42,000	-42.9%
Naval Petroleum & Oil Shale Reserves	17,715	17,995	20,000	+2,005	+11.1%
Elk Hills School Lands Fund	36,000	36,000	36,000	——	——
SPR - Facilities development	171,732	170,948	172,100	+1,152	+0.7%
Northeast Home Heating Oil Reserve	5,961	4,939	5,000	+61	+1.2%
SPR petroleum account	1,955	——	——	——	——
Fossil Energy	**797,512**	**804,653**	**728,899**	**-75,754**	**-9.4%**

The **Office of Fossil Energy** is responsible for managing Fossil Energy Research and Development, Clean Coal Technology, Elk Hills School Lands Fund, and for operating the Strategic Petroleum Reserve, Northeast Home Heating Oil Reserve, and the Naval Petroleum Reserve; all of which are separate accounts within the Interior and Related Agency appropriation. The information that follows is presented in separate sections for each account.

PROGRAM DESCRIPTION

(discretionary dollars in thousands)

	FY 2003 Comparable Approp	FY 2004 Comparable Approp	FY 2005 Congress Request	FY 2005 vs. FY 2004	
Fossil Energy Research And Development					
Coal and other power systems					
President's Coal Research Initiative	338,588	378,383	447,000	+68,617	+18.1%
Other power systems	62,034	72,101	23,000	-49,101	-68.1%
Total, Coal and other power systems	400,622	450,484	470,000	+19,516	+4.3%
Natural gas technologies	45,860	42,994	26,000	-16,994	-39.5%
Petroleum - Oil technology	40,983	35,078	15,000	-20,078	-57.2%
Cooperative research and development	7,970	8,395	3,000	-5,395	-64.3%
Fossil energy environmental restoration	9,652	9,595	6,000	-3,595	-37.5%
Import/export authorization	2,981	2,716	1,799	-917	-33.8%
Energy efficiency science initiative	2,440	——	——	——	——
Program direction and management support					
Headquarters program direction	18,777	22,189	22,749	+560	+2.5%
Energy technology center program direction	68,452	69,221	69,251	+30	+0.0%
Clean coal program direction	——	14,815	14,000	-815	-5.5%
Total, Program direction and management support	87,229	106,225	106,000	-225	-0.2%
GP-F-100 General plant projects	6,954	6,914	——	-6,914	-100.0%
Advanced metallurgical processes	5,961	9,876	8,000	-1,876	-19.0%
National academy of sciences program review	497	494	——	-494	-100.0%
Subtotal, Fossil Energy Research and Development	611,149	672,771	635,799	-36,972	-5.5%
Use of prior year balances	——	——	——	——	——
Transfer from SPR petroleum account (non-add)	(——)	(——)	(——)	(——)	(——)
Total, Fossil Energy Research And Development	**611,149**	**672,771**	**635,799**	**-36,972**	**-5.5%**

Fossil Research and Development

The **Fossil Energy Research and Development** (FERD) program's goal is to ensure that economic benefits from moderately priced fossil fuels and a strong domestic industry, are compatible with the public's expectation for exceptional environmental quality and reduced energy security risks. In support of this goal, the mission of the program is to enhance U.S. economic and energy security by: (1) managing and performing energy-related research to promote efficient and environmentally sound production and use of fossil fuels; (2) partnering with industry and others to advance clean and efficient fossil energy technologies toward commercialization, and (3) supporting the development of information and policy options that benefit the public by ensuring access to adequate supplies of affordable and clean energy.

The United States relies on fossil fuels for about 85 percent of the energy it consumes. Many forecast that high U.S. reliance on these fuels will continue for decades. For example, the Energy Information Administration's, *2004 Annual Energy Outlook,* projects that fossil fuel reliance could exceed 87 percent in 2025. To address this situation the program works to promote development of fossil fuel energy systems and practices to provide current and future generations with energy that is clean, efficient, reasonably priced, and reliable.

The **President's Coal Research Initiative** includes the **Clean Coal Power Initiative**, including FutureGen, and the coal research and development program. The Initiative includes the following activities:

(dollars in thousands)

	FY 2003 Comparable	FY 2004 Comparable	FY2005 Request
Clean Coal Power Initiative/FutureGen	145,116	178,770	287,000
Coal Research and Technology	193,472	199,613	160,000
Total, Pres. Coal Research Initiative	**338,588**	**378,383**	**447,000**

The **Clean Coal Power Initiative** (CCPI) is a key component of the National Energy Policy to address the reliability and affordability of the Nation's electricity supply, particularly from coal-based generation. The initiative responds to the President's commitment to conduct research on clean coal technologies to meet this challenge. The CCPI is a cooperative, cost-shared program between the government and industry to rapidly demonstrate emerging technologies in coal-based power generation and to accelerate their commercialization. The Nation's power generators, equipment manufacturers, and coal producers help identify the most critical barriers to coal's use in the power sector. Technologies will be selected with the goal of accelerating development and deployment of coal technologies that will economically meet environmental standards, while increasing the efficiency and reliability of coal power plants.

The President's **FutureGen Initiative** will establish the capability and feasibility of co-producing electricity and hydrogen from coal with essentially zero emissions, including those from carbon (sequestration). The FutureGen Initiative will create a public/private partnership to prove out technology ultimately leading to zero emission plants (including carbon) that are fuel-flexible and capable of multi-product output and efficiencies over 60 percent, with coal. The project is critical to the continued and expanded use of coal – our most abundant and lowest cost domestic energy resource. In order to assure that FutureGen is successful, it will be supported by a clean coal R&D effort focused on all the key technologies needed - such as carbon sequestration, membrane technologies for oxygen and hydrogen separation, advanced turbines, fuel cells, coal to hydrogen conversion, gasifier related technologies, and other technologies. Other Clean Coal Power Initiative activities complement FutureGen and will help drive down the costs of IGCC systems and other technologies critical to the project's success.

The **Central Systems** program is focused on partnering with industry to provide critical research to dramatically reduce coal power plant emissions, significantly improve efficiency, and maintain a cost-competitive edge. The President's Clear Skies Initiative is supported by the development of advanced emission control technology and related byproducts, and waste water usage under the Central Systems program. The Integrated Gasification Combined Cycle (IGCC) program will be more focused in FY 2005 and will continue to develop technologies for gas stream purification to meet quality requirements for use with fuel cells and conversion processes, enhanced process efficiency, and reduced costs for producing oxygen. Building on prior successes in the Advanced Turbine Systems Program, the Turbine Program is focused on developing enabling technology for high efficiency hydrogen syngas turbines for advance gasification systems, and for hydrogen turbines that will permit the design of zero emission FutureGen plants with carbon capture and sequestration.

The **Carbon Sequestration** program is developing a portfolio of technologies that hold great potential to reduce greenhouse gas emissions. The program will focus primarily on the following areas:

- Develop capture and separation technologies that dramatically lower the costs of reducing carbon dioxide emissions from fossil fuel process treatment, and

- Promote development of the infrastructure required for wide-scale deployment of greenhouse gas mitigation technologies.

The program goal is to develop to a state of commercial readiness, a portfolio of safe and cost-effective greenhouse gas capture, storage, and mitigation technologies by 2012, leading to substantial market penetration beyond 2012. Technology developments within the Sequestration program are expected to contribute significantly to the President's goal of reducing greenhouse gas intensity by 18 percent by 2012 and would play a critical role should it be necessary to stabilize greenhouse gas emissions in the United States.

The mission of the **Fuels** program is to create public benefits by conducting the research necessary to promote the transition to a hydrogen economy. Research will target cost reduction and increased efficiency of hydrogen derived from coal feedstocks as part of the President's Hydrogen Fuel Initiative. The research will address the development of technologies to produce, distribute and store hydrogen as an affordable, safe fuel for consumers. Specifically, this research activity will encompass a technology envelope that begins with the separation of hydrogen from mixed gas streams and concludes with the interface of hydrogen with fuel cells and other end-use systems.

Advanced Research projects seek a greater understanding of the physical, chemical, biological, and thermodynamic barriers that limit the use of coal and other fossil fuels. The program funds two categories of activity. The first is a set of crosscutting studies and assessment activities in environmental, technical and economic analyses, coal technology export, and integrated program support. The second includes fundamental and applied research programs to develop the technology base needed for the development of super-clean, very high efficiency coal-based power and coal-based fuel systems.

The **Other Power Systems** program includes the **Distributed Generation Systems** and **Novel Generation Systems** activities. These activities offer the potential to meet peak demand (and in some cases base and intermediate load) in a cost-effective manner, without the need for capital-intensive, central station capacity or costly investments in transmission and distribution. The Fuel Cells Program is leveraging technical innovation to develop advanced power systems for distributed generation that will improve power quality, boost system reliability, reduce energy costs, and help delay/defray capital investments. The program goal is to develop low-cost, high efficiency, fuel flexible, modular power systems with lower cost, higher quality electricity, and significantly lower carbon dioxide emissions than current plants, as well as near-zero levels of pollutants. The Solid-State Electricity Conversion Alliance (SECA) is the Department's major initiative for stationary fuel cells development. The objective of SECA is low-cost, highly efficient fuel cells for multiple applications including scale-up to Central Systems.

The **Natural Gas Technologies** and the **Petroleum – Oil Technology** programs will develop policies and new technologies that provide greater environmental protection, and increased energy security. Environmental studies will focus on management and beneficial use of produced water and ensuring maximum access to oil resources on Federal lands, primarily in the gas-rich Rocky Mountain region. The programs also contribute to a more secure energy future through work on natural gas production from hydrates – a potentially vast domestic resource, LNG safety issues, and diversification of global oil supplies. The President's Climate Change goals are supported by Oil Program efforts to improve use of industrial sources of CO2 for enhanced oil recovery which will result in increased energy security.

(discretionary dollars in thousands)

	FY 2003 Comparable Approp	FY 2004 Comparable Approp	FY 2005 Congress Request	FY 2005 vs. FY 2004	
Clean Coal Technology					
Advance appropriation	40,000	87,000	97,000	+10,000	+11.5%
Rescission	——	-88,000	-237,000	-149,000	-169.3%
Deferral	-87,000	-97,000	——	+97,000	+100.0%
Total, Clean Coal Technology	**-47,000**	**-98,000**	**-140,000**	**-42,000**	**-42.9%**

Clean Coal Technology

The **Clean Coal Technology** program is an effort jointly funded by the U.S. government and industry to demonstrate the most promising advanced coal-based technologies to use coal cleanly, efficiently (reducing CO_2 emissions), and inexpensively meet domestic energy needs. The program also generates the data needed for the marketplace to judge the commercial potential of these technologies. The program recognizes that the vast and relatively inexpensive U.S. coal reserves are critical energy resources, which can provide a significant economic advantage to the nation. However, these benefits will only be realized when coal can be used in ways which are environmentally responsible and when advanced technology can achieve significantly higher efficiencies than existing commercial power plants.

The technologies being demonstrated in the program are grouped into four primary market applications: Advanced Electric Power Generation Systems, which offer the prospect of much higher efficiency coal-based power plants; Environmental Control Devices, which offer more attractive ways to reduce emissions from existing power plants; Coal Processing for Clean Fuels, which offer coal feedstock conversion to produce a stable fuel of high-energy density; and Industrial Applications, which offer superior ways to competitively manufacture key commodities such as steel, in an environmentally responsible manner.

(discretionary dollars in thousands)

	FY 2003 Comparable Approp	FY 2004 Comparable Approp	FY 2005 Congress Request	FY 2005 vs. FY 2004	
Elk Hills School Lands Fund					
California teachers' pension fund payment	——	——	——	——	——
Advance appropriation	36,000	36,000	36,000	——	——
Total, Elk Hills School Lands Fund	**36,000**	**36,000**	**36,000**	**——**	**——**

Elk Hills School Lands Fund

The National Defense Authorization Act for Fiscal Year 1996, Public Law 104-106, authorized the settlement of longstanding "school lands" claims to certain **Elk Hills** lands by the State of California. The settlement agreement between DOE and California, dated October 11, 1996, provides for payment subject to appropriation of 9 percent of the net sales proceeds generated from the divestment of the government's interest in the Elk Hills Reserve. Under the terms of the Act, a contingency fund containing 9 percent of the net proceeds of sale has been established in the U.S. Treasury and is reserved for payment to California.

The first installment payment was appropriated in FY 1999. While no appropriation was provided in FY 2000, the act provided an advance appropriation of $36.0 million that became available in FY 2001. Similarly, the FY 2001, FY 2002, and FY 2003 Appropriation Acts provided advance appropriations of $36.0 million that became available in October of those

years. The FY 2004 Appropriation provided an advance appropriation of $36 million to be available on October 1, 2004 – the sixth payment.

(discretionary dollars in thousands)

	FY 2003 Comparable Approp	FY 2004 Comparable Approp	FY 2005 Congress Request	FY 2005 vs. FY 2004	
Strategic Petroleum Reserve					
SPR - Facilities development	**171,732**	**170,948**	**172,100**	**+1,152**	**+0.7%**
SPR Petroleum Account					
Oil acquisition	6,955	——	——	——	——
Transfer to FERD	——	——	——	——	——
Rescission of previously appropriated funds	-5,000	——	——	——	——
Total, SPR Petroleum Account	**1,955**	**——**	**——**	**——**	**——**

Strategic Petroleum Reserve

The **Strategic Petroleum Reserve** (SPR) mission is to provide the United States with adequate strategic and economic protection against disruptions in oil supplies. The SPR maintains the capability to transition from operational readiness to a maximum rate crude oil drawdown within 15 days of Presidential notification. The SPR maintains this continual readiness posture through a comprehensive program of systems maintenance, exercises, and tests.

The current storage capacity is 700 million barrels at the four sites with inventory and accounts receivable totaling 656 million barrels of crude oil by the end of FY 2004. This inventory provides the equivalent of 58 days of net import protection.

The **Strategic Petroleum Reserve (SPR) Petroleum Account**, created by the Energy Policy and Conservation Act, is the source of funds required to acquire, transport, and inject oil into the Strategic Petroleum Reserve. Funds in the SPR Petroleum Account are also used for incremental drawdown and other related miscellaneous costs.

(discretionary dollars in thousands)

	FY 2003 Comparable Approp	FY 2004 Comparable Approp	FY 2005 Congress Request	FY 2005 vs. FY 2004	
Northeast Home Heating Oil Reserve	**5,961**	**4,939**	**5,000**	**+61**	**+1.2%**

Northeast Home Heating Oil Reserve

On July 10, 2000, the President directed DOE to establish a heating oil reserve in the northeastern United States capable of assuring home heating oil supply for the northeast states during times of very low inventories and significant threats to immediate further supply. Two million barrels of heating oil will protect the northeast against a disruption for 10 days, the time required for ships to carry heating oil from the Gulf of Mexico to New York harbor for distribution.

On March 6, 2001, Energy Secretary Abraham formally notified Congress that the Administration would establish the **Northeast Home Heating Oil Reserve** as a permanent part of America's energy readiness effort, separate from the Strategic Petroleum Reserve.

The 2-million-barrel reserve is located in New York Harbor, New Haven, Connecticut, and Providence, Rhode Island.

(discretionary dollars in thousands)

	FY 2003 Comparable Approp	FY 2004 Comparable Approp	FY 2005 Congress Request	FY 2005 vs. FY 2004	
Naval Petroleum & Oil Shale Reserves					
Production operations	7,829	9,699	10,676	+977	+10.1%
Management	9,886	8,296	9,324	+1,028	+12.4%
Naval petroleum & oil shale reserves	___	___	___	___	___
Total, Naval Petroleum & Oil Shale Reserves	**17,715**	**17,995**	**20,000**	**+2,005**	**+11.1%**

Naval Petroleum and Oil Shale Reserves

The DOE has historically managed, operated, maintained, and produced oil from the **Naval Petroleum and Oil Shale Reserves** (NPOSR) while attempting to achieve the greatest value and benefit to the United States. As a result of the National Defense Authorization Act FY 1996, NPR-1 (Elk Hills) was sold to Occidental Petroleum Corporation and all three Naval Oil Shale Reserves (NOSR) have been transferred outside DOE.

Administrative jurisdiction for NOSR-1 and NOSR-3 was transferred to the Department of Interior to be made available for leasing. The other oil shale reserve, NOSR-2, was transferred to the Ute Indian Tribe in January 2000. The most significant post-sale activity is the settlement of ownership equity shares with the former unit partner in the NPR-1 field, Chevron U.S.A., Inc. Geologic petroleum and reservoir engineering services are required to prepare and support the government's equity position before an independent petroleum engineer and the Assistant Secretary for Fossil Energy, who are to impartially determine final equity shares. Each percentage point change in equity is worth millions of dollars to the federal government.

PROGRAM HIGHLIGHTS

Fossil Energy Research and Development

The goal of President's Coal Research Initiative is to produce public benefits by conducting research and development on coal-related technologies that will improve coal's competitiveness in future energy supply markets. The Administration strongly supports coal as an important part of our energy portfolio. This request carries out the President's campaign commitment to spend $2 billion on clean coal research over 10 years. The FY 2005 budget includes FutureGen under the Clean Coal Power Initiative.

The FERD program continues to incorporate criteria into the program and project selection process consistent with the President's Management Agenda that directs the application of specific criteria to DOE's applied research and development investments. The FY 2005 budget request takes into consideration the National Energy Policy and maintains core research and development with an emphasis on cost sharing and industry collaboration. As a result of the evaluations under the Research and Development Investment criteria, as well as the Program Assessment Rating Tool, program activities throughout FERD have been focused on emphasizing fundamental research and development activities.

The Natural Gas Technologies and the Oil Technology programs have undergone a significant overhaul as the result of these program reviews. Existing and new research is clearly focused on those areas with a strong public purpose and where industry would be unlikely to engage in the research without federal participation.

Clean Coal Technology

The Clean Coal Technology program operates with previously appropriated funding. Thirty-two projects have successfully completed operations. Only three ongoing projects remain in the program. Of these projects, only one has additional funding commitments. Adequate prior-year funding will exist after the proposed rescission to fulfill this commitment.

Elk Hills School Lands Fund

The $36 million shown in the FY 2005 request reflects payment of the FY 2004 advance appropriation.

Strategic Petroleum Reserve

Due to continued geothermal heating and renewed gas intrusion into the SPR crude oil, the program has initiated a vapor pressure mitigation program. Continuous removal of excess gas from the SPR crude oil inventory will commence by May 2004.

The DOE, in a joint initiative with the Department of Interior, implemented a royalty oil transfer plan in 1999 that competitively exchanged 28 million barrels of royalty oil at offshore platforms for crude oil that meets the reserve's specifications. In November 2001, the President directed the Secretary of Energy to continue using this technique as a means to fill the reserve to its current capacity of 700 million barrels. The reserve is scheduled to be completely filled in 2005.

The FY 2004 request provides for continued storage site maintenance, operations, security, drawdown testing, and drawdown readiness for the reserve, in addition to funding the vapor pressure mitigation activities.

Northeast Home Heating Oil Reserve

In September 2003, we exercised the first of four option years for continued storage at the East Coast terminals. Performance commenced on October 1, 2003.

Naval Petroleum Reserve

The FY 2005 request provides for closeout activities associated with NPR-1 as well as the operation and management of the two remaining activities: NPR-2 and NPR-3. The Elk Hills closeout work includes reservoir-engineering analysis to determine final equity percentages, legal support for all sale-related issues, and environmental remediation and cultural resource activities required as a result of the sale agreement. Responsibilities for the other properties include oversight of environmental compliance for the 17 NPR-2 leases. NPR-3 field operations support activities to produce NPR-3 at the maximum efficient rate: provide a testing and demonstration facility at the Rocky Mountain Oilfield Testing Center, and restore those areas that will no longer be utilized in oil and gas production at NPR-3.

SIGNIFICANT FUNDING CHANGES – FY 2004 to 2005 Request ($ in millions)

Fossil Energy Research and Development

President's Coal Research Initiative (FY 2004 $378.4; FY 2005 $447.0) ..... +$68.6

Clean Coal Power Initiative (FY 2004 $178.8; FY2005 $287.0) ..... +$108.2
Funding for the FutureGen Initiative is included in Clean Coal Power Initiative budget line beginning in FY 2005.

Central Systems (FY 2004 $89.9; FY2005 $64.5)..... -$25.4
Reduced level of effort on IGCC, now focusing on gas separation and cleaning technologies. Combustion efforts concluded in FY04 because current focus of program is to sequester CO_2 in gasification process. Activity in the turbine area will focus on continuing the development of Hydrogen turbines with reduced level to provide for FutureGen supporting research.

Sequestration R&D (FY 2004 $40.3; FY 2005 $49.0)..... +$8.7
FY05 activities focus on sequestration regional partnerships.

Fuels (FY 2004 $31.2; FY 2005 $16.0) ..... -$15.2
No FY 2005 funding is requested for ultra-clean transportation fuels as these activities are related to the production of liquid fuels that could comply with US EPA Tier–II Standards which industry can develop without federal support. No funding is requested for Solid Fuels and Feed-stocks and the Advanced Fuels Research Programs as they are of a lower priority in their potential for meeting the goals of the National Energy Policy and the President's Hydrogen Initiative. The program will increase emphasis on Hydrogen production from coal using membrane gasification technologies.

Advanced Research (FY 2004 $38.2; FY 2005 $30.5)..... -$7.7
Funding for Coal Utilization and Materials Research decreases reflects a shift to supporting research for FutureGen.

Other Power Systems (FY 2004 $72.1; FY 2005 $23.0) ..... -$49.1

Distributed Generation Fuel Cells (FY 2004 $71.1; FY 2005 $23.0)..... -$48.1
Termination of lower priority work. Focus remains on low-cost SECA fuel cell activities.

U.S./China Energy and Environmental Center (FY 2004 $1.0; FY 2005 $0.0)..... -$1.0
Concluded planned activities. No new activities in FY05.

Natural Gas Technologies (FY 2004 $43.0; FY 2005 $26.0)..... -$17.0
Priorities are reordered to focus on R&D activities appropriate to federal funding including natural gas production from hydrates and LNG safety that require a Federal presence. Reduced program emphasizes exploration and production ($17M, -$5.2M), Gas Hydrates ($6M, -$3.4M) and Effective Environmental Protection ($2.5M, level with FY 2004). Largest reduction is in Infrastructure ($0M, -$8.9M) in order to fund higher priority activities.

Petroleum – Oil Technology (FY 2004 $35.1; FY 2004 $15.0) ..... -$20.1
Reduced program emphasizes Effective Environmental Protection activities ($7.0M, -$2.7M) that fund advanced research for more efficient and environmentally sound technologies such as finding beneficial uses for waste water produced in oil and gas production; and include funds for Reservoir Life Extension ($5M, -$1.9M), and Exploration and Production Research ($3M, -$15.4M). The reduction in Exploration & Production reflects a reordering of priorities to focus on activities requiring a federal presence such as CO_2 well injection for enhanced oil recovery and CO_2 sequestration R&D.

Cooperative Research and Development (FY 2004 $8.4; FY 2005 $3.0) ..... -$5.4
Reduced funding for the Western Research Institute (WRI) and the University of North Dakota Energy and Environmental Research Center (UNDEERC). These centers will compete for program funds through the competitive solicitation process.

Fossil Energy Environmental Restoration (**FY 2004 $9.6; FY 2005 $6.0)..... -$3.6**
Requested funding will support compliance with most applicable federal, state and local ES&H regulations.

Advanced Metallurgical Research (FY 2004 $9.9; FY 2005 $8.0) ..... -$1.9
Reduced funding reflects shift of funding to higher priority coal programs.

Plant and Capital Equipment (FY 2004 $7.0; FY 2005 $0)..... -$6.9
Funds are not requested for NETL building because FY 2004 funding allows contractor to continue work without having to request new budget authority in FY 2005.

Import Export Authorization (FY 2004 $2.7; FY 2005 $1.8)..... -$0.9
Decrease reflects the transfer of the electricity regulatory function to the Office of Electricity

Clean Coal Technology

Clean Coal Technology (FY 2004 -$98.0 FY 2005 -$140.0) ..... -$42.0
For FY 2005, the Department proposes to rescind $237 million of unneeded balances that resulted from withdrawn clean coal projects. Public Law 108-108 deferred the availability of $97 million of funds until the start of FY2005. The net request for FY 2005 is -$140 million after the proposed $237 million rescission and the restoration of $97 million in deferred funds.

Strategic Petroleum Reserve

Strategic Petroleum Reserve (FY 2004 $170.9; FY 2005 $172.1)..... +$1.2
Increase reflects full funding for 128 FTE's and technical/program management support.

Strategic Petroleum Reserve – Petroleum Account (FY 2004 $0.0; FY 2005 -$0.0) ..... -$0.0

Naval Petroleum Reserve

Naval Petroleum and Oil Shale Reserves (FY 2004 $18.0; FY 2005 $20.0) ..... +$2.0
Increase reflects environmental remediation activities at both NPR-1and NPR-3 as well as increased funding for business management and support.

Section 2. Energy Strategic Goal / General Goal 4. Energy Security

Nuclear Energy, Science and Technology

(discretionary dollars in thousands)

	FY 2003 Comparable Approp	FY 2004 Comparable Approp	FY 2005 Congress Request	FY 2005 vs. FY 2004	
Office of Nuclear Energy, Science and Technology[a]					
University reactor fuel assistance and support	18,034	22,855	21,000	-1,855	-8.1%
Research and development					
Nuclear energy plant optimization	4,806	2,944	——	-2,944	-100.0%
Nuclear energy research initiative	17,413	6,592	——	-6,592	-100.0%
Nuclear energy technologies	31,579	19,622	10,246	-9,376	-47.8%
Generation IV nuclear energy systems initiative	16,940	27,744	30,546	+2,802	+10.1%
Nuclear hydrogen initiative	2,000	6,377	9,000	+2,623	+41.1%
Advanced fuel cycle initiative	57,292	66,713	46,254	-20,459	-30.7%
Total, Research and development	130,030	129,992	96,046	-33,946	-26.1%
Infrastructure					
Radiological facility management	62,928	63,431	69,110	+5,679	+9.0%
Idaho facilities management	62,983	75,415	108,050	+32,635	+43.3%
Idaho sitewide safeguards and security	52,560	56,343	58,103	+1,760	+3.1%
Total, Infrastructure	178,471	195,189	235,263	+40,074	+20.5%
Program direction	57,909	59,787	60,285	+498	+0.8%
Subtotal, Nuclear Energy	384,444	407,823	412,594	+4,771	+1.2%
Use of prior year balances and other adjustments	-9,003	-3,003	-3,003	——	——
Total, Nuclear Energy, Science and Technology	**375,441**	**404,820**	**409,591**	**+4,771**	**+1.2%**

[a] Includes Energy Supply and Other Defense Activities funding.

The **Office of Nuclear Energy, Science and Technology** is funded in two accounts within the Energy and Water Development Appropriation, Energy Supply and Other Defense Activities. All funding for research and development and other non-defense activities is requested within the Energy Supply account. Funding for defense related landlord activities for the Idaho National Laboratory, including Safeguards and Security, is requested within Other Defense Activities. The table above shows a summary of funding for the entire organization.

PROGRAM DESCRIPTION

The **Nuclear Energy, Science and Technology** (NE) program leads the government's efforts to: develop new nuclear energy generation technologies to meet energy and climate goals; develop advanced, proliferation-resistant nuclear fuel technologies that maximize energy from nuclear fuel; and maintain and enhance the national nuclear infrastructure. NE serves the present and future energy needs of the country by managing the safe operation and maintenance of our critical nuclear infrastructure that provides nuclear technology goods and services. A key mission of the Department's nuclear energy research and development program is to lead the U.S. and international research community in planning and conducting basic and applied research to chart the way toward the next leap in technology. The aim of these efforts and those of industry and our overseas partners, is to enable nuclear energy to fulfill its promise as a safe, advanced, inexpensive and environmentally benign approach to providing reliable energy to all of the world's people.

The programs within NE fully support **National Energy Policy** recommendations to expand the use of nuclear energy in the United States. Specifically, the **Nuclear Hydrogen Initiative** will

develop advanced technologies that can be used in tandem with next-generation nuclear energy plants to generate economic, commercial quantities of hydrogen to support a sustainable, clean energy future for the United States. The **Generation IV Nuclear Energy Systems Initiative** establishes a basis for expansive cooperation with our international partners to develop next-generation reactor and fuel cycle systems that represent a significant leap in economic performance, safety, and proliferation-resistance. Through the **Advanced Fuel Cycle Initiative,** the Department seeks to develop advanced, proliferation resistant nuclear fuel technologies that maximize the energy produced from nuclear fuel while minimizing wastes.

PROGRAM HIGHLIGHTS

The FY 2005 request supports innovative applications of nuclear technology to develop new nuclear generation technologies and advanced energy products, develop advanced proliferation-resistant nuclear fuel technologies that maximize energy output, and maintain and enhance national nuclear capabilities to meet future challenges.

The **University Reactor Infrastructure and Education Assistance** program supports the operation and upgrade of university research and training reactors; provides fellowships and scholarships to outstanding students, brings nuclear technology education to small, minority-serving institutions, and provides nuclear engineering research grants. The program helps to maintain domestic capabilities to conduct research and the critical infrastructure necessary to attract, educate, and train the next generation of scientists and engineers with expertise in nuclear energy technologies. The Nuclear Engineering Education Research program stimulates innovative research at U.S. universities. The Innovations in Nuclear Infrastructure and Education initiative continues to support six university consortiums to spur innovative collaborations that integrate academics with the operation of university research reactors. DOE also provide fresh fuel to university research reactors and supports reactor equipment upgrades at universities. Beginning in FY 2005, funding and program responsibility for transportation of domestic spent nuclear fuel shipments from university research reactors will be transferred from NE to the Office of Civilian Radioactive Waste Management (RW) to allow for a single program office to be responsible for transportation of spent fuel in the DOE complex. Also, beginning in FY 2005, funds are requested to provide fellowships and scholarships to help increase enrollment in the nation's Health Physics programs to begin addressing the serious national shortage of trained health physicists.

Beginning in FY 2005, the Department will integrate the **Nuclear Energy Research Initiative** (NERI) activity into its main research and development programs to achieve greater participation of the nation's university research community in these programs. The Department will seek universities to conduct peer-reviewed research that is focused in support of the Generation IV Nuclear Energy Systems Initiative, Advanced Fuel Cycle Initiative, Nuclear Hydrogen Initiative, and Nuclear Energy Technologies. Funding for such research projects will come directly from the budgets of the programs and will be devoted entirely to the research conducted at universities and colleges throughout the United States. The Department plans to use the bilateral I-NERI agreements that it has implemented with other nations to continue international cost-shared research and development. The restructuring will allow the Department to use all nuclear energy R&D programs as a basis for international, cost-shared research and development, and thereby significantly increase the amount of research achievable.

Under **Nuclear Energy Technologies**, the Department requests funding of $10.2 million in FY 2005 for the **Nuclear Power 2010** program to continue ongoing licensing demonstration and related analysis projects. The budgetary requirements for the program will be reviewed as Congress completes work on comprehensive energy legislation and the Department assesses the responses and requirements associated with its recent solicitation related to New Plant Licensing Demonstration Projects.

Developing next-generation nuclear systems will be an essential aspect of the **Generation IV Nuclear Energy Systems Initiative** ($30.5 million). Beginning in FY 2005, the Department puts special emphasis on the Next Generation Nuclear Plant (NGNP) as a promising Generation IV reactor technology, whose early deployment could complement the **National Hydrogen Fuel Initiative**. If successful, this technology could produce hydrogen at a cost that is competitive with gasoline and electricity as cost competitive with advanced natural gas-fired systems. Through this initiative, the United States will lead multi-national research and development projects based on the results of the internationally endorsed **Generation IV Technology Roadmap**. The international approach encourages development of widely-acceptable technologies, gives DOE access to the best expertise in the world, and leverages DOE's scarce nuclear R&D resources.

With its **Nuclear Hydrogen Initiative**, DOE will develop new technologies to generate hydrogen on a commercial scale in an economic and environmentally benign manner. DOE's Offices of Nuclear Energy, Fossil Energy, Science, and Energy Efficiency and Renewable Energy are working together to provide the technological underpinnings of the **National Hydrogen Fuel Initiative**. In the case of nuclear energy, DOE will conduct research and development into advanced thermochemical technologies that may, when used in tandem with next-generation nuclear energy systems, enable the United States to generate hydrogen at a scale and cost that would support a future hydrogen-based economy. Current fossil-fuel-based methods emit greenhouse gases and are roughly four times more costly than the market will support.

The **Advanced Fuel Cycle Initiative**, which is integral to the Generation IV Nuclear Energy Systems effort, aims to develop a better, more efficient and proliferation-resistant nuclear fuel cycle. This research and development program is focusing on methods to reduce the volume and long-term toxicity of high-level waste from spent nuclear fuel, reduce the long-term proliferation threat posed by civilian inventories of plutonium in spent fuel, and provide for proliferation-resistant technologies to recover the energy content in spent nuclear fuel.

The **Radiological Facilities Management** program maintains irreplaceable DOE nuclear technology facilities in a safe, secure, environmentally compliant and cost-effective manner to support national priorities. Beginning in FY 2005, the program funds oversight and planning to ensure that the Department's Paducah Gaseous Diffusion Plant (Paducah GDP) uranium enrichment facilities and select surplus uranium inventories are available to support future national energy security priorities and satisfy the Department's statutory responsibilities.

On May 19, 2003, oversight and landlord responsibilities for the Idaho National Environmental and Engineering Laboratory (INEEL) transferred from the Office of Environmental Management (EM) to the Office of Nuclear Energy, Science and Technology (NE). Beginning in the second quarter of FY 2005, the INEEL will be merged with Argonne National Laboratory-West (ANL-W) to create the Idaho National Laboratory (INL). The Secretary of Energy has designated INL as the center for the Department's strategic nuclear energy research and development efforts. The INL will play a lead role in Generation IV nuclear energy systems development, Advanced Fuel Cycle development, testing of naval reactor fuels and reactor core components, and space nuclear power applications.

The **Idaho Facilities Management** program provides the Idaho National Laboratory (INL) with the site-wide infrastructure required to support the laboratory's research and development programs. The INL is a multi-program national laboratory that employs its research and development assets to pursue assigned roles in a range of research and national security activities.

The **Idaho Site-Wide Safeguards and Security** program protects DOE interests from theft, diversion, sabotage, espionage, unauthorized access, compromise, and other hostile acts, which could cause unacceptable adverse impacts on national security, program continuity, the health and safety of employees, the public, or the environment at the INL.

The **Program Direction** account provides the federal staffing resources and associated costs required to provide overall direction and execution of the Department's Nuclear Energy program. In FY 2005, NE will assume full responsibility for one FTE transferred from NNSA to support the Department's interaction with the Organization for Economic Cooperation and Development (OECD). Also, seven FTE at the Oak Ridge Operations Office will transfer from the Science program to NE to oversee the Department's lease agreement with USEC, Inc., and assist in various management activities associated with the DOE enrichment sites.

SIGNIFICANT FUNDING CHANGES – FY 2004 to 2005 Request ($ in millions)

University Reactor Infrastructure and Education Assistance
(FY 2004 $22.9; FY 2005 $21.0) ..... -$1.9
In FY 2004, DOE was provided a one-time increase for spent nuclear fuel shipments; funds for this activity are not requested in FY 2005.

Nuclear Energy Research Initiative (NERI) (FY 2004 $6.6; FY 2005 $0) ..... -$6.6
Decrease reflects the restructuring to integrate NERI into the Department's mainline nuclear energy R&D programs. The competitive solicitations for NERI research will request work that is focused specifically in support of Generation IV Nuclear Energy Systems Initiative, Advanced Fuel Cycle Initiative, Nuclear Hydrogen Initiative, and Nuclear Energy Technologies. Funding for these research projects will come directly from the program's budget and be awarded exclusively to university-based researchers.

Nuclear Energy Technologies (FY 2004 $19.6; FY 2005 $10.2) ..... -$9.4
FY 2005 request for Nuclear Power 2010 will continue the Early Site Permit (ESP) demonstration projects and support NRC Review of the ESP applications for commercial sites.

Nuclear Hydrogen Initiative (FY 2004 $6.4; FY 2005 $9.0) ..... +$2.6
FY 2005 request reflects an increase to: develop thermochemical and high-temperature electrolysis hydrogen production methods; initiate targeted research, assessment, and design for alternative hydrogen production methods; and initiate preliminary design of a 200 kilowatt high-temperature electrolysis experiment and a 500 kilowatt sulfur-iodine thermochemical process experiment.

Nuclear Energy Plant Optimization (FY 2004 $2.9; FY 2005 $0) ..... -$2.9
While the Department continues to support the objectives of the NEPO program, funding is not requested for FY 2005 allowing the Department to concentrate on more long-term research and development activities on new nuclear plant designs rather than short-term activities on currently operating nuclear power plants.

Advanced Fuel Cycle Initiative (FY 2004 $66.7; FY 2005 $46.3) ..... -$20.4
Net decrease due to delaying experiments required to test Generation IV fuel forms (-$0.9), reduced level of effort on treatment of sodium-bonded fuel and advanced treatment processes (-$8.0), postponement of experiments on specific materials associated with fuel treatment (-$3.0), reduced level of effort on broad system studies, integrated fuel cycle studies and facility assessments (-$1.8), no new fellowships and research grants being awarded in FY 2005 (-$8.1) and delaying certain research and development activities into future years (-$0.5); offset by increased level of effort to complete laboratory-scale "hot" testing of advanced aqueous processes to optimize the UREX+ flowsheet (+$1.7) and complete LWR oxide fuel irradiations and post-irradiation examination (+$0.1).

Generation IV Nuclear Energy Systems Initiative
(FY 2004 $27.7; FY 2005 $30.5) ..... +$2.8
Net increase supports completion of pre-conceptual designs ($4.9) to support technology development of advanced fuels, materials and technologies; offset by decreases of $0.9 resulting from milestone delays due to a re-prioritization of activities in the Next Generation

Power Plant project within the overall Generation IV budget and $1.2 associated with delaying certain research projects into the future.

Radiological Facilities Management (FY 2004 $63.4; FY 2005 $69.1)..... +$5.7
FY 2005 request includes an overall decrease to the **Space and Defense Infrastructure** program (-$1.7). The decrease reflects early completion of building 792 modification and related site infrastructure upgrades at INL (-$5.1). The decrease is offset by the following increases to complete the installation of equipment transferred from Mound to INL and the startup of regulator assembly operations (+$0.9); operate the full scale scrap recovery line for the entire fiscal year and increase analytical chemistry costs associated with operation of the line at LNL (+$1.6); refine additional iridium scrap and upgrade and replace aging welding equipment to support iridium processing and fabrication at ORNL (+$0.9). In addition, the request includes an increase in the **Medical Isotopes Infrastructure** program (+$6.9). The increase is primarily for capital improvements to the Building 3019 Complex necessary to carryout the contract awarded in October 2003 at ORNL to support the U-233 program (+$7.8) and increases in maintenance activities for facilities at LANL, SNL and BNL (+$1.9). The increases are offset by decreases due to completing several maintenance upgrades at ORNL (-$1.5) and completing the Isotope Production Facility at LANL (-$1.3).

Idaho Facilities Management (FY 2004 $75.4; FY 2005 $108.0)..... +$32.6
FY 2005 request includes an increase for one-time costs associated with restructuring the Idaho laboratory complex and supporting infrastructure services until the new contractors are in place ($+43.8) and an increase in facility operations (+$0.7). The increases are offset primarily by a decrease for infrastructure projects at ANL-W and upgrades to the Advanced Test Reactor to support planned advanced nuclear energy research projects (-$10.6), a delay in capital equipment purchases (-$0.5), and completion of two line item construction projects in FY 2004 (-$0.8).

Idaho Site-Wide Safeguards and Security (FY 2004 $56.3; FY 2005 $58.1)..... +$1.8
FY 2005 request includes increases in physical security to support heightened security requirements resulting in increased posts, patrols, and other safeguards and security activities.

Program Direction (FY 2004 $59.8; FY 2005 $60.3) ..... +$0.5
FY 2005 request includes funding to support new hires to strengthen project management, to provide junior staff to support succession planning, and to provide for cost-of-living adjustments (+$1.1). The request also includes an increase in other related expenses due to an increase in the Working Capital Fund for the cost of building occupancy rates and an increase in telephone services (+$0.3). The increases are offset by reductions in federal staff at Idaho, Chicago, and Oakland site offices (-$0.9).

Section 2. Energy Strategic Goal / General Goal 4. Energy Security

Energy Information Administration

(discretionary dollars in thousands)

	FY 2003 Comparable Approp	FY 2004 Comparable Approp	FY 2005 Congress Request	FY 2005 vs. FY 2004	
Energy Information Administration					
National energy information system	80,587	81,100	85,000	+3,900	+4.8%
Use of prior year balances	-500	———	———	———	———
Total, Energy Information Administration	**80,087**	**81,100**	**85,000**	**+3,900**	**+4.8%**

PROGRAM HIGHLIGHTS

The **Energy Information Administration** (EIA) is an independent statistical agency that collects, analyzes, produces, and disseminates energy data, analyses, and forecasts covering the full range of fuels and a wide variety of energy issues. Topics include energy reserves, production, consumption, distribution, prices, technology, and related international economic and financial markets. Most of EIA's activities are required by statute, such as developing and maintaining a comprehensive energy database, producing specific reports, and disseminating reports and analysis for a variety of customers. Other activities satisfy inquiries for energy information from policymakers, the energy industry, and the general public.

PROGRAM HIGHLIGHTS

The EIA's FY 2005 program request is $85.0 million, which is $3.9 million more than the FY 2004 comparable appropriation of $81.1 million. The EIA priority is to maintain high-quality core energy data programs and forecasting systems needed to provide timely data, analysis, and forecasts. The EIA continues to update and overhaul its consumption surveys; overhaul the electricity surveys and data systems to accommodate changes in the deregulated energy industry; and improve data quality and accuracy in the petroleum, natural gas, and electricity areas.

SIGNIFICANT FUNDING CHANGES – FY 2004 to FY 2005 Request ($ in millions)

Energy Information Administration (FY 2004 $81.1; FY 2005 $85.0).....+$3.9
The increase allows EIA to maintain a comparable level of services and surveys as in FY 2004 when prior year balances were used to offset program requirements. EIA will continue to provide high quality, policy neutral energy data, analyses, and forecasts for use by Congress, the Administration, and the public. The funding allows EIA to collect and disseminate information on greenhouse gas emission reductions in accord with updated reporting guidelines that are being issued as part of the President's Climate Change Initiative, update core electricity surveys, improve estimates of fuel-switching capabilities, and continue monthly surveys of foreign crude acquisition and domestic crude oil first purchases. In addition, EIA's FY 2005 request includes $1.5 for the Secretary's Natural Gas Data Collection initiative to develop a new natural gas product survey and continue the Weekly Underground Natural Gas Storage Survey.

Power Marketing Administrations

(discretionary dollars in thousands)

	FY 2003 Comparable Approp	FY 2004 Comparable Approp	FY 2005 Congress Request	FY 2005 vs. FY 2004	
Power Marketing Administrations					
Southeastern Power Administration					
Southeastern power administration	39,040	39,070	5,200	-33,870	-86.7%
Use of prior year balances	-72	——	——	——	——
Offsetting collections	-14,463	-19,000	——	+19,000	+100.0%
Offsetting collections (P L 106-377)	-20,000	-15,000	——	+15,000	+100.0%
Total, Southeastern Power Administration	**4,505**	**5,070**	**5,200**	**+130**	**+2.6%**
Southwestern Power Administration					
Southwestern power administration	29,400	30,231	29,352	-879	-2.9%
Use of prior year balances	-400	——	——	——	——
Offsetting collections	-1,512	-1,512	——	+1,512	+100.0%
Offsetting collections (P L 106-377)	-288	-288	——	+288	+100.0%
Total, Southwestern Power Administration	**27,200**	**28,431**	**29,352**	**+921**	**+3.2%**
Western Area Power Administration					
Western area power administration	359,767	366,992	176,768	-190,224	-51.8%
Use of prior year balances	-1,200	——	——	——	——
Offsetting collections	-156,124	-166,100	——	+166,100	+100.0%
Offsetting collections (P L 106-377)	-30,000	-20,000	——	+20,000	+100.0%
Offsetting collections (P L 98-381)	-4,683	-3,992	-3,668	+324	+8.1%
Total, Western Area Power Administration	**167,760**	**176,900**	**173,100**	**-3,800**	**-2.1%**
Falcon and Amistad Operating and Maintenance Fund					
Operation and maintenance	2,716	2,625	2,827	+202	+7.7%
Total, Falcon and Amistad Fund	2,716	2,625	2,827	+202	+7.7%
Total, Power Marketing Administrations	**202,181**	**213,026**	**210,479**	**-2,547**	**-1.2%**

PROGRAM DESCRIPTION

The four **Power Marketing Administrations** (PMAs) sell electricity primarily generated by hydropower projects located at federal dams, contributing to the reliability of the nation's electricity supply and grid. Preference in the sale of power is given to public entities and electric cooperatives. Revenues from the sale of federal power and transmission services are used to repay all related power costs.

The **Southeastern Power Administration** (Southeastern) markets federal hydroelectric power from 23 U.S. Army Corps of Engineers (Corps) multipurpose projects to preference customers in an eleven-state area in the southeastern United States. Since Southeastern does not own or operate any transmission facilities, it contracts with regional utilities that own electric transmission systems to deliver the federal hydropower to Southeastern's customers.

The **Southwestern Power Administration** (Southwestern) operates within a six-state area marketing and delivering hydroelectric power produced at 24 Corps multipurpose projects. To transmit power to its customers, Southwestern maintains 1,380 miles of high-voltage transmission lines, 24 substations, and 47 microwave and VHF radio sites. Direct appropriations support personnel to conduct all activities connected with the marketing and delivery of federally-generated

hydroelectric power to customers; maintain transmission lines, substations, and communication systems; and replace equipment at such facilities.

The **Western Area Power Administration** (Western) markets and transmits federal power to a 1.3-million-square-mile service area in 15 central and western states from 55 federally-owned hydroelectric power plants primarily operated by the U.S. Department of the Interior's Bureau of Reclamation (Bureau), the Corps, and the International Boundary and Water Commission. Western also markets the United States' entitlement from the Navajo coal-fired power plant near Page, Arizona. More than half of its appropriation funds the majority of the Program Direction activity for federal personnel who perform operations, maintenance, and construction activities associated with Western's nearly 17,500-mile transmission system and other power marketing activities.

The **Bonneville Power Administration** (Bonneville) provides electric power, transmission, and energy services to a 300,000-square-mile service area in eight states in the Pacific Northwest. Bonneville wholesales the power produced at 31 Federal projects operated by the Corps and the Bureau and from certain non-federal generating facilities. Bonneville, which is self-financed with revenues, funds the expense portion of its budget, the power operations and maintenance costs of the Bureau of Reclamation and the Corps in the Federal Columbia River Power System. The capital portion of the budget is funded mostly through borrowing from the U.S. Treasury with some nonfederal financing planned and is repaid with market-determined interest using revenues.

PROGRAM HIGHLIGHTS

The Southeastern, Southwestern, and the Western Area Power Administrations, which primarily receive appropriations for expenses, resume phasing out the federal power receipt financing of purchase power and wheeling activities. The phase-out assumes the PMAs' customers, acting independently or in partnerships, will increasingly enter energy markets to directly arrange with suppliers for energy and wheeling needs. This change eliminates the need for the PMAs to use power receipts to finance these activities in advance and instead places the responsibility on the PMAs' customers. The PMAs may continue to assist their customers in the funding of these activities through alternative financing mechanisms.

Southeastern, Southwestern, and Western's FY 2005 Budget requests propose to direct fund the Corps hydropower facilities operations and maintenance using federal power receipts. Western also proposes this same approach for the Bureau's hydropower facilities operations and maintenance and research and development activities. These proposals will improve power generation and reliability of the Federal hydropower facilities.

Western is overseeing the construction of a third 500-kV Los Banos-Gates transmission line to relieve the Path 15 constraint in central California. Through a public/private partnership, approximately $300 million of non-federal funds are being invested to expand the capacity of the transmission system by 1,500 megawatts. This project is scheduled to come on line in late 2004.

Bonneville's FY 2005 submission reflects the significant financial and business events that have shaped its response to the competitive pressures of the region's electricity situation, while continuing efforts to help meet the region's long-term power and transmission infrastructure needs. Bonneville is authorized to sell up to $4.45 billion of bonds to the U.S. Treasury at any one time to finance its infrastructure investments. Bonneville is also pursuing other strategies, including optimization of Energy Northwest debt, revenue financing of some transmission investments, and non-Federal funding, to sustain funding for its infrastructure investment requirements. Bonneville plans to fund the Schultz-Wautoma 500-kV transmission project through non-federal financing later this year. These efforts will help assure the reliability of the northwest's electric transmission and energy supply.

SIGNIFICANT FUNDING CHANGES – FY 2004 to FY 2005 Request ($ in millions)

Southeastern Power Administration (FY 2004 $5.1; FY 2005 $5.2) ..... +$0.1
FY 2005 program level is $5.2, essentially level with FY 2004.

Purchase Power and Wheeling (PPW) (funded through alternative financing in FY 2005) (FY 2004 $34.0; FY 2005 $0)..... -$34.0
FY 2005 request completes the phase-out that began in FY 2001 of federal receipt financing of the PMAs' PPW expenses. In FY 2005, Southeastern may use alternative financing mechanisms (net billing, bill crediting, and customer advances) to assist their customers with PPW activities.

Southwestern Power Administration (FY 2004 $28.4; FY 2005 $29.4) ..... +$1.0
FY 2005 program level is $29.4, essentially level with FY 2004.

Purchase Power and Wheeling (funded through alternative financing in FY 2005) (FY 2004 $1.8; FY 2005 $0)..... -$1.8
FY 2005 request completes the phase-out that began in FY 2001of federal receipt financing of the PMAs' PPW expenses. In FY 2005, Southwestern may use alternative financing mechanisms (net billing, bill crediting, and reimbursable authority) to assist their customers with PPW activities.

Western Area Power Administration (FY 2004 $176.9; FY 2005 $173.1)..... -$3.8
FY 2005 Construction, Rehabilitation, Operation, and Maintenance program is $176.8 (compared to $367.0 in FY 2004) to be funded by $173.1 in budget authority and $3.7 funded through a reimbursable agreement with the Bureau of Reclamation using receipts from the Colorado River Dam Fund.

Purchase Power and Wheeling (funded through alternative financing in FY 2005) (FY 2004 $186.1; FY 2005 $0) ..... -$186.1
FY 2005 request completes the phase-out that began in FY 2001of federal receipt financing of the PMAs' PPW expenses. In FY 2005, Western may use alternative financing mechanisms (net billing, bill crediting, and reimbursable authority) to assist their customers with PPW activities. Customers are expected to increase participation in energy markets, enabling them to meet, on their own, the cost of firming and wheeling their portion of the federal hydropower resource.

Program Direction (FY 2004 $122.5; FY 2005 $114.0) ..... -$8.5
Net budget authority decrease is attributed to management's emphasis in seeking alternative financing, thus allowing Western to maintain its capital programs.

Construction and Rehabilitation (FY 2004 $12.9; FY 2005 $20.2) ..... +$7.3
Increase provides for substation additions and upgrades that are essential to maintaining a stable, safe, and reliable system, and allows Western to repair, rebuild, and/or relocate transmission line and terminal facility structures that have been identified as having potential reliability, safety and maintenance problems.

Operation and Maintenance (FY 2004 $35.4; FY 2005 $38.9)..... +$3.5
Net budget authority increase is due to higher equipment purchases for replacements and additions to the power system, slightly offset by a lower level of planned regular O&M activities.

Utah Reclamation Mitigation and Conservation (FY 2004 $6.1; FY 2005 $0)..... -$6.1
FY 2005 request proposes to transfer authorities and future contributions for the Utah Reclamation Mitigation and Conservation Account from the Secretary of Energy to the

Secretary of the Interior, Bureau of Reclamation. This account funds environmental mitigation covering fish and wildlife and recreation resources affected by the Central Utah and Colorado River Storage Projects in the State of Utah. Western already finances mitigation activities separately at Flaming Gorge Dam and Lake Powell/Glen Canyon Dams in Utah. Western also contributes to mitigation on tributaries that flow into Lake Powell through its funding of the Recovery Implementation Program (P.L. 106-392).

Bonneville Power Administration (self financed through revenues)
Capital Investment Obligations (FY 2004 $597.5; FY 2005 $486.9)..... -$110.6
No annual appropriation received. In FY 2005, total requirements of all Bonneville programs include estimated budget obligations of $3,727.0. This amount includes operating expenses of $3,149.5 and total capital investments that require budget obligations and use of existing borrowing authority of $486.9. These investments provide electric utility and general plant maintenance associated with the Federal Columbia River Power System's transmission services, capital equipment, hydroelectric projects, conservation, and capital investments in environment, fish, and wildlife. The decrease in capital investments reflects the Transmission Business Line's fiscal year shifts in materials and construction costs to accommodate updated power flow study results and accommodates the first phase of major transmission infrastructure improvements.

Power Business Line (FY 2004 $177.4; FY 2005 $188.0)..... +$10.6
Provides for additions, improvements, and replacements of existing U.S. Bureau of Reclamation and Corps of Engineers' hydroelectric projects in the Pacific Northwest that improve the power system reliability. Slight increase in conservation and energy efficiency (+$6.0) and associated project costs (+$4.6).

Transmission Business Line (FY 2004 $386.0; FY 2005 $268.6)..... -$117.4
Provides for additions, upgrades, and replacements to the federal transmission system, conducts pollution prevention and abatement activities in compliance with environmental laws and regulations, and mitigates environmental risks associated with operation of the power system. Transmission infrastructure improvements and additions will help the federal transmission system remain in compliance with national reliability standards, allow for interconnection of needed new generation, remove constraints that limit economic trade, remove constraints that limit the ability to maintain the system, and replace aging equipment. The net decrease reflects shifts in materials and construction costs to accommodate updated power flow study results offset by an increase in expected projects funded by customers. The first phase includes the following major projects: (G1) Puget Sound Area Additions, (G2) North of Hanford/North of John Day, (G3) West of McNary (on hold), (G4) Starbuck Generation (on hold), (G5) Lower Monumental & McNary Area Generation (Phase II) (on hold), (G6) Cross Cascades North, (G7) Celilo Modernization, (G8) I-5 Corridor Generation Additions, (G9) Spokane Area and Western Montana Generation Additions, (G10) Portland Area Additions, (G12) Olympic Peninsula Additions, and (G13) I-5 Corridor Generation Additions (Southwest Washington-Northwest Oregon) (on hold pending availability of third party financing).

SECTION 3. SCIENCE STRATEGIC GOAL

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

(discretionary dollars in thousands)

	FY 2003 Comparable Approp	FY 2004 Comparable Approp	FY 2005 Congress Request	FY 2005 vs. FY 2004	
Total, Science	**3,322,244**	**3,500,169**	**3,431,718**	**-68,451**	**-2.0%**

The Science Strategic Goal is supported by the following general goal:

General Goal 5. World-Class Scientific Research Capacity: Provide world-class scientific research capacity needed to: ensure the success of Department missions in national and energy security; advance the frontiers of knowledge in physical sciences and areas of biological, medical, environmental, and computational sciences; or provide world-class research facilities for the nation's science enterprise.

The Science program contributes directly to this goal.

Section 3. Science Strategic Goal / General Goal 5. World-Class Scientific Research Capacity

Science

(discretionary dollars in thousands)

	FY 2003 Comparable Approp	FY 2004 Comparable Approp	FY 2005 Congress Request	FY 2005 vs. FY 2004	
Science					
High energy physics	702,038	733,631	737,380	+3,749	+0.5%
Nuclear physics	370,655	389,623	401,040	+11,417	+2.9%
Biological and environmental research	494,360	641,454	501,590	-139,864	-21.8%
Basic energy sciences	1,001,941	1,010,591	1,063,530	+52,939	+5.2%
Advanced scientific computing research	163,185	202,292	204,340	+2,048	+1.0%
Science laboratories infrastructure	45,109	54,280	29,090	-25,190	-46.4%
Fusion energy sciences program	240,695	262,555	264,110	+1,555	+0.6%
Safeguards and security	66,877	62,328	73,315	+10,987	+17.6%
Science Program direction	137,425	152,581	155,268	+2,687	+1.8%
Workforce development for teachers and scientists	5,392	6,432	7,660	+1,228	+19.1%
Small business innovation research (SBIR)	100,172	———	———	———	———
Subtotal, Science	3,327,849	3,515,767	3,437,323	-78,444	-2.2%
Use of prior year balances and other adjustments	-5,605	-15,598	-5,605	+9,993	+64.1%
Total, Science	**3,322,244**	**3,500,169**	**3,431,718**	**-68,451**	**-2.0%**

PROGRAM DESCRIPTION

The mission of the **Science** program is to deliver the discoveries and scientific tools that transform our understanding of energy and matter and advance the national, economic, and energy security of the United States. Science is one of the primary sponsors of basic research in the United States, leading the nation in supporting the physical sciences in a broad array of research subjects in order to improve our energy security and to address issues ancillary to energy, such as climate change, genomics and life sciences.

The Science program funds energy related basic research in the following areas: fundamental research in energy, matter, and the basic forces of nature; health and environmental consequences of energy production and development; fundamental science that supports the foundations for new energy technologies and environmental mitigation; a science base for fusion as a potential future energy source; and advanced computational and networking tools critical to research.

In support of its mission, the Science program has responsibilities in three main areas: selection and management of research; operation of world-class, state-of-the-art scientific facilities; and design and construction of new facilities. Further, Science activities support the **President's Management Agenda** by integrating budget and performance evaluation, expanding electronic government, and the development and use of new investment criteria for evaluating basic research during FY 2003 that will be used in FY 2004 and beyond.

The **High Energy Physics** (HEP) program conducts basic research on the nature of matter and energy at its most fundamental level, seeking to understand the universe by investigating the basic constituents of matter and the forces binding them together. The research program is primarily carried out at two major scientific facilities: **Tevatron at Fermilab** in Illinois, and **Stanford Linear Accelerator Center** in California. HEP is participating in the construction of the **Large Hadron**

Collider in Switzerland. It also funds non-accelerator physics that investigates dark energy, superNovae, solar neutrinos, black holes, and other topics.

The **Nuclear Physics** (NP) program conducts research to understand the structure and interactions of atomic nuclei and the fundamental forces and particles of nature in nuclear matter. The NP program seeks to explain the structure and properties of nuclei and nuclear matter in terms of their fundamental constituents. NP funds two large national user accelerator facilities, the **Thomas Jefferson National Accelerator Facility** in Newport News, Virginia, and the **Relativistic Heavy Ion Collider** at Brookhaven National Laboratory in New York. It also supports several other laboratory and university facilities, and a program of non-accelerator physics.

The **Biological and Environmental Research** (BER) program provides the biological and environmental discoveries necessary to clean and protect our environment, offer new energy alternatives and fundamentally alter the future of medical care and human health. There are four subprograms. **Life Sciences** fosters fundamental research in the biological and life sciences to underpin the Department's mission needs; it funds the DOE Human Genome and Genomics: GTL programs. **Climate Change Research** funds DOE participation in the U.S. Climate Change Science program. **Environmental Remediation** researches remediation and restoration of the nation's nuclear weapons production sites. Using DOE research and technologies, the **Medical Applications and Measurement Science** program develops new medical diagnostic and therapeutic tools for disease diagnosis and treatment, non-invasive medical imaging, and biomedical engineering.

The **Basic Energy Sciences** (BES) program conducts research and operates facilities to provide the foundation for new and improved energy technologies and for understanding and mitigating the environmental impacts of energy use. There are two BES subprograms. **Materials Sciences and Engineering** performs basic research to understand the atomistic basis of materials and behavior, and how to make materials perform more efficiently and at a lower cost. Applications include lighter, stronger materials to increase fuel economy in automobiles, alloys and ceramics that improve the efficiency of combustion engines, and more efficient photovoltaic materials for solar energy conversion. **Chemical Sciences, Geosciences and Energy Biosciences** seeks to understand fundamental interactions of atoms, molecules, and ions with photons and electrons. This knowledge is crucial for improving combustion systems and solar photoconversion processes, and for applications to renewable fuel resources, environmental remediation, and photosynthesis. BES is currently constructing a major new scientific user facility, the $1.4 billion (total project cost) **Spallation Neutron Source** at Oak Ridge National Laboratory, which will be the world's most powerful neutron scattering facility when completed in FY 2006. It is also constructing several **Nanoscale Science Research Centers** as part of the National Nanotechnology initiative.

The **Advanced Scientific Computing Research** (ASCR) program provides world leadership in areas of scientific computing research relevant to the DOE missions and supports the goal of providing extraordinary tools for extraordinary science. ASCR is transforming scientific simulation and computation into the third pillar of science, along with experimentation and theory. The high-performance computing and networking resources permit widely distributed teams of scientists to collaborate on scientific challenges. ASCR funds the **National Energy Research Scientific Computing Center (NERSC)** at Lawrence Berkeley National Laboratory (supporting about 2,000 users), the **Energy Sciences Network** that links Science researchers and facilities, and the **Next Generation Computer Architecture** research activity to meet the computing challenges of the future.

The **Fusion Energy Sciences** (FES) program seeks to study plasmas, the fourth state of matter, and understand and control the process of fusion that can produce an enormous release of energy. Facilities include the **DIII-D** at General Atomics in San Diego, **the Alcator C-Mod** at MIT, and the **National Spherical Tokamak Experiment** at the Princeton Plasma Physics Laboratory (PPPL). DOE is participating in negotiations to construct an international burning plasma experiment, the **International Thermonuclear Experimental Reactor (ITER)**.

PROGRAM HIGHLIGHTS

The FY 2005 Science request totals $3.4 billion, relatively the same funding level as FY 2004 when congressionally directed adds in the Omnibus and the Energy and Water Development Appropriations bills are taken into consideration. Within this budget, several modest program increases are possible due to project completions and ramp-downs, terminations, and adjustments in funding priorities.

High Energy Physics (HEP) gives priority to operation of the **Fermilab** and **Stanford Linear Accelerator Center (SLAC)** facilities for the next several years. Fermilab will focus on investigating particles and forces at the current energy frontier. SLAC continues its research on **Charge-Parity Violation,** which may explain the preponderance of matter over antimatter in the universe. DOE continues participation with the European Center for Nuclear Research (CERN) on construction of the **Large Hadron Collider** (LHC). DOE will fund the project through completion in FY 2007, and then become a partner in its research program. Funding is also provided for design and engineering of the BTeV experiment at Fermilab. HEP also has a program of non-accelerator physics, including $8.4 million for the Joint DOE/NASA Large Area Telescope (LAT) and $7.6 million for the **SuperNova Acceleration Probe** for the DOE/NASA Joint Dark Energy Mission. Construction of the Neutrinos at the Main injector (NuMI) project is completed in FY 2005.

Nuclear Physics will focus its FY 2005 resources on research and operations of its two largest facilities. The **Thomas Jefferson National Accelerator Facility** operates 3,715 hours in FY 2004 and 4,985 hours in FY 2005 (+$4.5 million). The **Relativistic Heavy Ion Collider** at LBNL increases from 3,300 hours to 3,840 hours (+$9.2 million). The **Bates** facility, scheduled for closure after FY 2004, operates through early FY 2005. The **88-Inch Cyclotron** at LBNL was previously planned for shutdown in FY 2004, but will now continue to operate as a dedicated in-house facility, and be available to the U.S. Air Force and the National Reconnaissance Office in FY 2004 and FY 2005. Funding for R&D on a proposed new facility, the **Rare Isotope Accelerator**, is reduced from $6.0 million in FY 2004 to $4.0 million in FY 2005.

Biological and Environmental Research has several high visibility initiatives. The **Genomics: GTL** research increases by $4.0 million for additional research on function and control of molecular machines for energy and environmental applications. New funding of $5.0 million is for Project Engineering and Design of the first Genomics: GTL project, the Facility for Production and Characterization of Proteins and Molecular Tags. The **Human Genome** and **Climate Change** programs are maintained at near FY 2004 levels. Increases are offset by reductions in Structural Biology and Environmental Remediation. Congressionally directed projects appropriated in FY 2004 ($140.8 million before adjustments for SBIR/STTR) are not continued.

The **Basic Energy Sciences (BES)** program increases by $52.9 million in FY 2005. BES funding for the **Spallation Neutron Source** decreases by $28.6 million in FY 2005 as the project moves to completion in FY 2006. This savings, combined with new program funding, allows for increases in three areas: An $8.7-million increase in the **Nanoscale Science** program, including funding for five **Nanoscale Science Research Centers;** an additional $21.4 million is provided for the President's **Hydrogen Initiative,** bringing the total to $29.2 million; and $44.6 million for research, Project Engineering and Design and long-lead procurements for the next-generation **Linac Coherent Light Source**.

Advanced Scientific Computing Research maintains funding for the **Next Generation Computer Architecture** initiative. A new $8.5 million **Atomic to Macroscopic Mathematics** program is begun, as is a new applications partnership with Fusion Energy Sciences. Funding for **NERSC** increases by $6.0 million to provide additional advanced computing capability. The Laboratory Technology Research subprogram is completed in FY 2004.

Starting in FY 2004, the **Fusion Energy Sciences** (FES) program is participating in negotiations to construct an international burning plasma experiment, **ITER**. The FES program has identified $38.0 million within its FY 2005 budget to support preparations for ITER (including $7.0 million dedicated directly to ITER pre-construction activities). The program will operate its three primary facilities at below FY 2004 levels to support higher priority activities such as ITER participation, and will continue with design and fabrication of the **National Compact Stellarator Experiment** at PPPL. Funding will continue for one to two Centers of Excellence in Fusion Plasma Science.

The **Science Laboratories Infrastructure** program request is sufficient for the current projects underway. The **Safeguards and Security** program is increased to fund the Design Basis Threat. **Program Direction** maintains a total staffing level of 1,014 Full-Time Equivalents. An increase in **Workforce Development for Teachers and Scientists** supports the Laboratory Science Teacher Professional Development Program and a Faculty Sabbatical Fellowship pilot for faculty from minority serving institutions.

SIGNIFICANT FUNDING CHANGES – FY 2004 to 2005 Request ($ in millions)

High Energy Physics (FY 2004 $733.6; FY 2005 $737.4)..... +$3.8
In FY 2005, the focus continues to be on the operation of facilities at **Fermilab** (FY 2004 $239.1; FY 2005 $263.5), and at the **Stanford Linear Accelerator Center (SLAC)** (FY 2004 $117.6; FY 2005 $122.1). The Fermilab program includes upgrades for Tevatron reliability and luminosity improvements, and start of engineering and design for the new BTeV experiment. Increases at SLAC cover higher power costs and efforts to meet performance targets..... +$28.9

Funding for the **Large Hadron Collider (LHC)** declines as it nears completion (FY 2004 $48.8; FY 2005 $32.5), but preparations for participating in the research program are increasing (FY 2004 $15.4; FY 2005 $29.4). ..... -$2.3

Funding for Non-Accelerator Physics using underground, land-based, or space-based facilities decreases (FY 2004 $49.4; FY 2005 $42.9), as research is reduced and projects proceed toward completion. Theoretical Physics is increased (FY 2004 $47.6; FY 2005 $49.6) to support fabrication of advanced computing hardware. Advanced Technology R&D decreases (FY 2004 $87.9; FY 2005 $81.1): maintaining Linear Collider R&D at $19.2, but terminating Muon Accelerator R&D (-$3.6). Other research changes total +$0.2..... -$11.1

NuMI project is in it final year of construction (FY 2004 $12.4; FY 2005 $0.7). ..... .-$11.7

Nuclear Physics (FY 2004 $389.6; FY 2005 $401.0)..... +$11.4
Operation of facilities at **Thomas Jefferson National Accelerator Facility (TJNAF)** and the **Relativistic Heavy Ion Collider (RHIC)** continues to dominate funding in FY 2005. TJNAF increases operating hours by 34%, and $1.5 million is included for R&D on the CEBAF upgrade to 12 GeV (FY 2004 $74.7; FY 2005 $79.2). RHIC operating hours increase by 16% (FY 2004 $120.0; FY 2005 $129.2). ..... +$13.7

Bates facility at MIT, originally planned for closure at the end of FY 2004, will operate through the first quarter of FY 2005 in order to complete the planned research program (FY 2004 $12.5; FY 2005 $9.5). The **88-Inch Cyclotron** at LBNL, originally proposed to close at the end of FY 2003, will continue to operate in FY 2004 and FY 2005 to support a small in-house research program and critical U.S. Air Force and National Reconnaissance Office research activities (FY 2004 $3.0; FY 2005 $3.0)..... -$3.0

R&D and pre-conceptual design activities for the **Rare Isotope Accelerator** are reduced (FY 2004 $6.0; FY 2005 $4.0). Nuclear Theory, including funding for the Institute for Nuclear Theory at the University of Washington, increases (+$0.9). Other research changes total +$1.8..... +$0.7

Biological and Environmental Research (FY 2004 $641.5; FY 2005 $501.6)..... -$139.9

In Life Sciences, **Human Genome** (FY 2004 $64.2; FY 2005 $64.6) and Genomics: GTL (FY 2004 $63.5; FY 2005 $67.5) continue as the largest activities. Structural Biology is reduced (FY 2004 $27.0; FY 2005 $21.9). ..... -$0.7

Funding for Climate Change, supporting the Administration's **Climate Change Science Program (CCSP)**, increases slightly (FY 2004 $142.1; FY 2005 $143.0). The Environmental Remediation subprogram is reduced (FY 2004 $108.3; FY 2005 $105.5), reflecting completion of the Clean-Up Research activity and completion of a capital equipment project; funding for the **Savannah River Ecology Laboratory** is $7.8.. ..... -$1.9

In Medical Applications and Measurement Science, the FY 2004 congressionally directed projects were completed (-$140.8 before SBIR/STTR adjustments). Other research activities decrease (-$1.5)..... -$142.3

Project Engineering and Design (PED) begins for the **Facility for Production and Characterization of Proteins and Molecular Tags** (TEC $5.0)..... +$5.0

Basic Energy Sciences (FY 2004 $1,010.6; FY 2005 $1,063.5)..... +$52.9
In Materials Sciences and Engineering, there is a change of +$11.7 for research to improve fundamental understanding of hydrogen for the **President's Hydrogen Initiative**. R&D related to the **Linac Coherent Light** Source (LCLS) increases (FY 2004 $2.0; FY 2005 $4.0), and a Major Item of Equipment for the ANL Center for Nanophase Materials also increases (FY 2004 $10.0; FY 2005 $12.0). The request includes $70.0 for **nanoscale science** research. Facilities Operation funding increases by 6% (FY 2004 $294.5; FY 2005 $312.9), including $14.7 for pre-operations R&D (other project costs) for the Spallation Neutron Source. Other changes total -$3.2..... +$30.9

Chemical Sciences, Geosciences, and Energy Biosciences have a change of +$9.7 million for the **President's Hydrogen Initiative**. The request includes $28.4 for **nanoscale science research**. Other research activities are reduced (-$1.1). Funding for operation of the Combustion Research Facility at Sandia/CA increases (+$0.2)..... +$8.8

There are eight construction projects in Basic Energy Sciences. The **Spallation Neutron Source** will be completed in FY 2006 (FY 2004 $123.9; FY 2005 $80.5). The **Linac Coherent Light Source** has both a PED project (FY 2004 $7.5; FY 2005 $20.1) and a construction project (beginning long-lead procurement) (FY 2004 $0; FY 2005 $30.0). There is also a PED project for the **Nanoscale Science Research Centers (NSRCs)** (FY 2004 $2.9; FY 2005 $2.0) and four NSRC construction projects (FY 2004 $84.4; FY 2005 $99.3). ..... +$13.2

Advanced Scientific Computing Research (FY 2004 $202.3; FY 2005 $204.3) ..... +$2.0
Atomic to Macroscopic Mathematics begins (FY 2004 $0; FY 2005 $8.5). **Next Generation Computer Architecture (NGA)** is maintained at a slightly reduced level (FY 2004 $38.3; FY 2005 $38.2). ASCR continues partnerships with Genomics: GTL and Nanoscale Science at reduced levels (FY 2004 $10.9; FY 2005 $10.1), and begins a new partnership with Fusion Energy Sciences (+$1.4). ..... +$9.0

Funding for Network Research (FY 2004 $7.1; FY 2005 $5.8) and National Collaboratory Pilot Projects (FY 2004 $10.9; FY 2005 $8.0) is redirected to increase funding for NERSC (FY 2004 $31.9; FY 2005 $37.9). ..... +$1.8

The Laboratory Technology Research program is concluded in FY 2004 (-$3.0). Other ASCR program changes total -$5.8..... -$8.8

Fusion Energy Sciences (FY 2004 $262.6; FY 2005 $264.1) ..... +$1.5
Operation and research in each of the three main facilities is reduced from 18 weeks in FY 2004 to 14 weeks in FY 2005: **DIII-D** (FY 2004 $56.0; FY 2005 $54.0); **Alcator C-Mod** (FY 2004 $22.2;

FY 2005 $21.5); **NSTX** (FY 2004 $34.7; FY 2005 $33.6). The DIII-D and Alcator C-Mod programs include $4.0 in FY 2004 and $15.0 in FY 2005 for ITER preparatory experiments. ..... -$3.8

Other activities in the Science subprogram have a small increase (+$0.7); funds are redirected to support ITER-related computer simulation (FY 2004 $1.0; FY 2005 $3.0). The Technology subprogram also has a small increase (+$0.4), and within the subprogram funds are redirected to support ongoing domestic experiments and U.S. components for the ITER project (FY 2004 $0; FY 2005 $13.0). All other changes total +$0.2 ..... +$1.3

Funds dedicated solely to pre-construction project activities for ITER increase from $3.0 in FY 2004 to $7.0 in FY 2005 ..... +$4.0

Science Laboratories Infrastructure (FY 2004 $54.3; FY 2004 $29.1) ..... -$25.2
Laboratories Facilities Support subprogram is reduced by 46 percent (FY 2004 $33.3; FY 2004 $17.9). Part of this reduction is accommodated by the use of prior-year balances to accelerate planned FY 2005 work scope into FY 2004, and part by the extension of two on-going projects. Excess Facilities Disposition (FY 2004 $6.0; FY 2005 $6.1) and Oak Ridge Landlord (FY 2004 $5.1; FY 2005 $5.1) subprograms are continued at FY 2004 levels. The Health and Safety Improvements subprogram, in response to OSHA and NRC findings, will correct urgent requirements in FY 2004, no funding is planned for FY 2005 (FY 2004 $9.9; FY 2005 $0).

Safeguards and Security (FY 2004 $62.3; FY 2005 $73.3) ..... +$11.0
The majority of the increase in FY 2005 (+$6.0) is for the Design Basis Threat. A large part of the remaining +$5.0 is for Oak Ridge Operations Office requirements for protection of Building 3019 and the new Spallation Neutron Source.

Program Direction (FY 2004 $152.6; FY 2005 $155.3) ..... +$2.7
Funding fully supports 1,014 FTEs in Headquarters and Field Operations. Increases are partially offset by identified efficiencies in the electronic Government Corporate R&D Portfolio Management Tracking and Reporting Environment project.

Workforce Development for Teachers and Scientist (FY 2004 $6.4; FY 2005 $7.7) ..... +$1.3
Funding for the Laboratory Science Teacher Professional Development program increases (FY 2004 $1.0; FY 2005 $1.5); and a new Faculty Sabbatical Fellowship activity, supporting research opportunities for faculty members from minority serving institutions, begins (FY 2004 $0; FY 2005 $0.5). Other changes total +$0.3.

SECTION 4. ENVIRONMENT STRATEGIC GOAL

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

	FY 2003 Comparable Approp	FY 2004 Comparable Approp	FY 2005 Congress Request	FY 2005 vs. FY 2004	
Environmental Management					
Environmental Management	6,808,000	7,007,585	7,433,653	+426,068	+6.1%
Legacy Management	62,057	66,008	66,025	+17	+0.0%
Office Of Civilian Radioactive Waste Management	478,019	604,497	907,473	+302,976	+50.1%
Total, Environmental Management	**7,348,076**	**7,678,090**	**8,407,151**	**+729,061**	**+9.5%**

The Environment Strategic Goal is supported by the following two general goals:

General Goal 6. Environmental Management: Accelerate cleanup of nuclear weapons manufacturing and testing sites, completing cleanup of 108 contaminated sites by 2025.

General Goal 7. Nuclear Waste: License and construct a permanent repository for nuclear waste at Yucca Mountain and begin acceptance of waste by 2010.

The following programs contribute to these goals:

- Environmental Management
  - Defense Site Acceleration Completion
  - Defense Environmental Services
  - Non-Defense Site Acceleration Completion
  - Non-Defense Environmental Services
  - Uranium Enrichment Decontamination and Decommissioning Fund
- Legacy Management
- Civilian Radioactive Waste Management

Section 4. Environment Strategic Goal / General Goal 6. Environmental Management

Environmental Management

(discretionary dollars in thousands)

	FY 2003 Comparable Approp	FY 2004 Comparable Approp	FY 2005 Congress Request	FY 2005 vs. FY 2004	
Environmental Management					
Defense Site Acceleration Completion	5,516,639	5,713,971	5,970,980	+257,009	+4.5%
Defense Environmental Services	1,107,598	1,033,621	982,470	-51,151	-4.9%
Non-Defense Site Acceleration Completion	167,584	172,411	151,850	-20,561	-11.9%
Non-Defense Environmental Services	161,852	316,439	291,296	-25,143	-7.9%
Uranium Enrichment Decontamination and Decommissioning Fund	320,563	414,027	500,200	+86,173	+20.8%
Site closure	——	——	——	——	——
Safeguards and security	——	——	——	——	——
Subtotal, Defense Site Acceleration Completion	7,274,236	7,650,469	7,896,796	+246,327	+3.2%
Use of prior year balances and other adjustments	-33,505	-178,222	-143	+178,079	100%
Defense environmental management privatization (resc)	——	-15,329	——	+15,329	+100.0%
Uranium Enrichment D&D Fund payment offset	-432,731	-449,333	-463,000	-13,667	-3.0%
Total, Environmental Management	**6,808,000**	**7,007,585**	**7,433,653**	**+426,068**	**+6.1%**

Note: The President's FY 2005 Budget Appendix does not correctly reflect the Defense payment that has been made to the UED&D Fund. The DOE budget justification and this document show the correct amount.

PROGRAM DESCRIPTION

The **Environmental Management** (EM) program was created in 1989 to safely manage the cleanup of the environmental legacy from 50 years of nuclear weapons production and nuclear energy research at 114 sites around the country. The program manages the remediation of sites contaminated by defense and civilian activities and receives appropriations in separate defense and non-defense accounts. Since 2001, a top priority for the EM program has been to reform and refocus the nuclear weapons cleanup program to deliver risk reduction faster and cleanup more efficiently and cost effectively. As a result of this focus, cleanup sites have developed plans that establish accelerated risk reduction and cleanup goals. The sites are continuing to work with their states and regulators to translate these strategies and initiatives into work plans and baselines; these plans are slated to be fully in place in FY 2005. To continue these initiatives, DOE is requesting a total of $7.4 billion, a 6-percent increase above the comparable FY 2004 appropriation.

In order to support accelerated risk reduction and closure strategies, several initiatives have been implemented that fundamentally change the way that EM's managers, contractors, and regulators do business. The Department has undertaken several major reforms to: (1) redefine and align acquisition strategies, (2) revitalize the human capital aspects of the program, (3) continue utilizing a new budget structure that focuses on the program's core mission activities and separately identifies non-cleanup activities for added visibility and management control, and (4) transition those program activities to other DOE elements that do not contribute to the program's core mission of risk reduction and closure.

EM is requesting program funds in five appropriation accounts: **Defense Site Acceleration Completion** (FY 2004 $5.7 billion; FY 2005 $6.0 billion); **Defense Environmental Services** (FY 2004 $1,034 million; FY 2005 $982 million); **Non-Defense Site Acceleration Completion** (FY

2004 $172 million; FY 2005 $152 million); **Non-Defense Environmental Services** (FY 2004 $316 million; FY 2005 $291 million); **Uranium Enrichment Decontamination and Decommissioning Fund** (FY 2004 $414 million; FY 2005 $500 million).

PROGRAM HIGHLIGHTS

The FY 2005 budget request totals $7.4 billion, an increase of 6 percent from the comparable FY 2004 appropriation. This budget request continues the initiatives undertaken by this Administration to transform and revitalize the cleanup program.

The budget request will allow the program to continue to protect workers, public health and safety, and the environment; continue surveillance, maintenance, and support activities needed to maintain waste, materials, facilities, and sites in a safe and stable condition; and protect nuclear materials from unauthorized activities. It will also keep the Rocky Flats Environmental Technology site in Colorado, the Fernald site in Ohio, and the Mound site in Ohio on schedule for closure in 2006; increase the number of shipments to the Waste Isolation Pilot Plant, critical to meeting cleanup and closure goals; and continue to make progress in completing cleanup projects in accordance with applicable laws and regulatory agreements.

Consistent with the reforms undertaken by the program, the EM budget reflects the transition of program activities that are not part of the core risk reduction and closure mission to other DOE elements. This includes transfer of the management of spent nuclear fuel in interim storage at the Idaho National Laboratory and other facilities, the National Spent Nuclear Fuel program and responsibility to coordinate and transport domestic and foreign research reactor fuel to the Office of Civilian Radioactive Waste Management. In addition, the Offsite Source Recovery Project will transfer to the National Nuclear Security Administration; responsibility for the oversight and day-to-day operation of the Pacific Northwest National Laboratory will transfer to the Office of Science; and other functions, such as Environmental Justice, will transfer to the Office of Legacy Management.

Section 4. Environment Strategic Goal / General Goal 6. Environmental Management

Defense Site Acceleration Completion

(discretionary dollars in thousands)

	FY 2003 Comparable Approp	FY 2004 Comparable Approp	FY 2005 Congress Request	FY 2005 vs. FY 2004	
Defense Site Acceleration Completion *(was Defense Facilities Closure Projects)*					
2006 Accelerated completions	1,234,037	1,239,018	1,251,799	+12,781	+1.0%
2012 Accelerated Completions	2,102,613	2,199,338	2,150,641	-48,697	-2.2%
2035 Accelerated Completions	1,811,563	1,918,375	1,893,339	-25,036	-1.3%
Safeguards and security	254,747	291,124	265,059	-26,065	-9.0%
High level waste legislative proposal	——	——	350,000	+350,000	n/a
Technology development and deployment	113,679	66,116	60,142	-5,974	-9.0%
Site closure	——	——	——	——	——
Safeguards and security	——	——	——	——	——
Subtotal, Defense Site Acceleration Completion	5,516,639	5,713,971	5,970,980	+257,009	+4.5%
Use of prior year balances and other adjustments	-20,108	-137,090	——	+137,090	+100.0%
Less security charge for reimbursable work	-122	-121	-143	-22	-18.2%
General reduction	——	——	——	——	——
Total, Defense Site Acceleration Completion	**5,496,409**	**5,576,760**	**5,970,837**	**+394,077**	**+7.1%**

PROGRAM DESCRIPTION

The **Defense Site Acceleration Completion** appropriation account supports the largest portion of the Environmental Management mission, with the goal of completing cleanup of the legacy of defense weapons production or research activities. Upon completion, sites or portions of sites will be turned over to other DOE program landlords or to the new Legacy Management program for long-term surveillance and maintenance. Defense Site Acceleration Completion provides funding in several accounts: 2006 Accelerated Completions, 2012 Accelerated Completions, 2035 Accelerated Completions, Safeguards and Security, and Technology Development and Deployment, as well as reserved funding for a High-Level Waste Proposal. This appropriation includes funding for projects at the Waste Isolation Pilot Plant (WIPP), Idaho National Laboratory, Oak Ridge Reservation, Ohio Operations Office (Mound, Ashtabula, Battelle Columbus Laboratory, Fernald), the Hanford site, the Rocky Flats Environmental Technology site, the Savannah River site, and various other locations.

SIGNIFICANT FUNDING CHANGES – FY 2004 to FY 2005 Request ($ in millions)

2006 Accelerated Completions (FY 2004 $1,239.0; FY 2005 $1,251.8)..... +$12.8
Activities include defense sites and projects that will conclude in or before 2006. All of the defense-funded cleanup activities at the Ohio sites and Rocky Flats are included, as well as projects at Oak Ridge, and activities at various locations (Kansas City Plant, Sandia National Laboratory, and Lawrence Livermore National Laboratory).

Oak Ridge (FY 2004 $123.2; FY 2005 $111.8).....-$11.4
Funds treatment and disposal of legacy waste and restoration activities at the **Oak Ridge Reservation**. Key activities in FY 2005 are remediation of the 1,000 acre Melton Valley site, with accelerated completion date of FY 2005, and disposal of legacy waste stored at Melton Valley, **Y-12** and the **East Tennessee Technology**

Park, which will result in a significant mortgage reduction from eliminated storage costs. Funding for Melton Valley remediation increases by $16 million in FY 2005, while funding for legacy waste disposal decreases by $27 million, reflecting completion of low-level waste disposal.

Ohio (FY 2004 $453.4; FY 2004 $452.1).....-$1.3
Cleanup activities in Ohio comprise four sites: **Mound, Ashtabula, Battelle Columbus Laboratory**, and **Fernald**. The goal at these sites, managed by the Ohio Field Office, is to complete environmental restoration and waste management projects to conditions requiring a minimal level of long-term stewardship or allowing for transfer of real property to the state and local communities. FY 2005 request continues progress at all four sites. Activities include: safe facility shutdown, decontamination and decommissioning of buildings, disposition of contaminated soil and debris, and disposal of waste material. The decrease at Battelle Columbus results from the award of a fixed-price contract that accelerates decommissioning. At Fernald, funding increases to construct caps and liners, while other funding decreases due to completion of waste pit shipments and dismantling of several facility complexes.

Rocky Flats (FY 2004 $620.8; FY 2005 $642.5) .....+$21.7
Acceleration of the cleanup at the Rocky Flats Plant continues on track for completion in 2006, or earlier. After cleanup, the site will become a national wildlife refuge. All special nuclear materials will be removed from the site by the end of FY 2004, and all Material Access Areas were eliminated in FY 2003, one year earlier that the target date. This greatly reduces site management and security costs. In FY 2005, deactivation, decommissioning, and demolition of the site facilities and remediation activities continue; waste stabilization and off-site shipments increase, with disposition of all transuranic and all low-level and mixed low-level waste completed in FY 2005.

Lawrence Livermore National Laboratory (FY 2004 $17.6; FY 2005 $21.6) ...+$4.1
Provides for continued monitoring, treatment, and remediation of groundwater. Increase reflects escalation of sampling and disposition costs for the remaining legacy waste streams and increased funding to address off-site plume and source control, thereby accelerating risk reduction activities.

Various Locations (FY 2004 $24.0; FY 2005 $23.8) .....-$0.2
Primarily funds remediation activities at **Sandia National Laboratory** and **Kansas City Plant**. Provides for continued environmental monitoring, and treatment and remediation of contaminated media. Request includes an increase in funding at the Kansas City plant, and a ramp down of activities at Sandia as the site approaches completion.

2012 Accelerated Completions (FY 2004 $2,199.3; FY 2005 $2,150.6).....-$48.7
Activities include defense cleanup sites and projects that will conclude in or before FY 2012. Includes activities at the Idaho National Laboratory, Hanford Site, Oak Ridge Reservation, Savannah River Site, Los Alamos National Laboratory, Nevada Test Site and various locations (Lawrence Livermore National Laboratory 300, and Pantex Site).

Idaho (FY 2004 $509.2; FY 2005 $415.2).....-$94.0
FY 2005 request continues the acceleration and safe management of high-level radioactive waste, transuranic waste, and spent nuclear fuel, as well as the disposal of on-site mixed low-level, hazardous, and other wastes. In addition, it supports accelerated remediation activities. Request reflects completion of the consolidation of certain spent nuclear fuels at the Idaho Nuclear Technology Engineering Center; the final increment of privatization funding in FY2004 for the **Advanced Mixed Waste**

Treatment Project Facility, which is partially offset by funding for operations. The request continues accelerated characterization, treatment, and disposal of transuranic waste at **WIPP**; and remediation, waste management, and safe management of high-level waste tanks. The decrease primarily reflects activities impacted by the court decision on the Department's plan to reclassify waste as incidental to reprocessing. Funding for these activities is included as part of the High-Level Waste Proposal.

Oak Ridge (FY 2004 $67.0; FY 2005 $67.2).....+$0.2
Activities managed by the Oak Ridge Operations Office include environmental restoration, defense-funded decommissioning and waste management activities at the **East Tennessee Technology Park** (ETTP), and operation of the **Toxic Substances Control Act Incinerator**. In addition, the office conducts cleanup at several off-site locations that were contaminated by DOE materials sold to private companies. FY 2005 request supports continued disposition of legacy waste; management and disposal of low-level waste and mixed low-level waste at commercial facilities; continued cleanup at off-site locations; and decommissioning at the ETTP.

Richland (FY 2004 $490.0; FY 2005 $524.8).....+$34.8
Richland Operations Office manages Hanford site cleanup activities of facilities associated with the production of nuclear materials during the Cold War. Request supports completion of stabilization, packaging and shipment of plutonium nitrates, oxides and metals in FY 2005; and maintaining the facilities in a safe and secure manner until completed demolition at the **Plutonium Finishing Plant**. Request also funds completion of activities to remove degraded spent nuclear fuel from the **K-Basins** and transport it to dry storage away from the Columbia River, with completion of cleanout of the K-East and K-West Basins expected in FY 2005. The other major activity funded is the **River Corridor** closure project to decontaminate and decommission surface facilities; and monitor, mitigate, and remediate chemical and radioactive contaminants in soils and groundwater along the Columbia River by 2012. The request supports completion of the **H-Reactor** cocooning, continued safe storage of 825 metric tons of irradiated uranium as well as other waste management activities, and decommissioning and remediation activities. FY 2005 increase reflects more resources for decommissioning at the Plutonium Finishing Plant, plus additional funding for accelerated site remediation in the 100 Area associated with the River Corridor project.

River Protection (FY 2004 $686.0; FY 2005 $690.0).....+$4.0
Office of River Protection's primary goal is the stabilization and immobilization of the high-level radioactive liquid waste in the storage tanks at Hanford. FY 2005 request continues design and construction of the Waste Treatment and Immobilization Plant.

Savannah River (FY 2004 $362.3; FY 2005 $369.6).....+$7.3
Savannah River site treats and disposes of legacy materials and wastes resulting from nuclear materials produced during the Cold War. FY 2005 request continues management and stabilization of "at risk" spent nuclear fuel and nuclear materials in the **F and H Areas** in support of Defense Nuclear Facilities Safety Board recommendations, and stabilization and packaging of plutonium metals and oxides in the **FB-Line Facility**. Request also includes activities associated with the **Receiving Basin for Off-site Fuels** project, which is being de-inventoried in FY 2004 and deactivated in 2005. Increase supports the continued acceleration of F-Area closure and H-Area completion, and additional funds to develop 3013 surveillance capability in 235-F.

Los Alamos National Laboratory (FY 2004 $42.7; FY 2005 $41.5) ..... -$1.2
Request provides for continued treatment, storage and disposal of legacy waste, including storage, segregation, and repackaging of transuranic waste and shipments to the Waste Isolation Pilot Project for disposal, with retrieval of transuranic waste stored underground beginning in FY 2005.

Nevada Test Site (FY 2004 $10.2; FY 2005 $6.2) ..... -$4.0
Request supports characterization and shipments of transuranic waste to the Waste Isolation Pilot Plant. Decrease reflects reductions in waste certification activities for shipment of drums to WIPP, since much of this activity will be completed in FY 2004.

Various Locations (FY 2004 $31.9; FY 2005 $36.1) ..... +$4.2
Request supports cleanup activities at Lawrence Livermore National Laboratory, and the **Pantex Plant**. At Pantex, the request accelerates operation of the perched groundwater treatment system, other remedial activities, and completes the demolition of Building 12-24 and the **Zone 10 Ruins**. The request supports remediation of soil and groundwater at the **Lawrence Livermore National Laboratory-Site 300.** Request includes increased funding to accelerate site cleanup completion at Pantex.

2035 Accelerated Completions (FY 2004 $1,918.4; FY 2005 1,893.3) ..... -$25.1
Provides funding for projects at sites where cleanup is expected to be completed by FY 2035. Includes activities at the Waste Isolation Pilot Plant, Nevada Test Site, Oak Ridge Reservation, Hanford Site, Savannah River Site, Los Alamos, and the Separations Process Research Unit.

Carlsbad (FY 2004 $183.0; FY 2005 $204.2) ..... +$21.2
Carlsbad Field Office manages the National Transuranic Waste Program and the **Waste Isolation Pilot Plant** (WIPP) for safe transportation and disposal of transuranic waste. FY 2005 request for WIPP fully supports contact-handled mixed transuranic waste shipments, continues work to begin remote-handled shipments in FY 2006, and supports a carrier capacity of 34 shipments per week. The funding increase in FY 2005 reflects increased shipments resulting from acceleration of cleanup across the DOE complex, and the use of accelerated process lines, waste disposal, underground mining, panel closures, and related facility operations.

Nevada (FY 2004 $74.4; FY 2005 $86.0) ..... +$11.6
Request supports cleanup of contaminated areas at the **Nevada Test Site** and at off-site test areas. It also includes operation of the low-level waste disposal facility at Nevada Test Site that accepts waste from around the DOE complex. FY 2005 request supports the completion of subsurface cleanup at the Amchitka site in Alaska, and the closure of 48 contaminated release sites at Nevada Test Site. Funding increase primarily reflects the resumption of deep groundwater well drilling activities, acceleration of soils cleanup at the Nevada Test Site, and the acceleration of surface remediation of Gasbuggy site in New Mexico.

Oak Ridge (FY 2004 $55.1; FY 2005 $48.6) ..... -$6.5
Activities managed by the Oak Ridge Operations Office include decontamination and decommissioning of contaminated facilities at the **Oak Ridge National Laboratory** and **Y-12 Plant**. In addition, activities include operation of the **Environmental Management Waste Management Facility** (EMWMF) at Y-12, which disposes of on-site waste related to cleanup activities. FY 2005 request supports continued disposal of on-site waste and expansion of the disposal facility by adding another modular cell; continued removal of fuel and flush salts in the **Molten Salt Reactor Experiment** (MSRE) facility; completed construction and start of operations of the **Building 9201-2 water treatment system** to remediate mercury contamination in

surface water; and maintain all surplus facilities in a safe condition. Decrease reflects ramp down of Bethel Valley groundwater study and reduced requirements for MSRE remediation.

Richland (FY 2004 $323.0; FY 2005 $385.6).....+$62.6
Richland Operations Office manages cleanup activities at the Hanford Site. Activities funded include managing legacy and newly generated waste streams from the Hanford Site at disposal facilities in the **200 Area**, safe storage and disposition of cesium/strontium capsules (a high risk priority), integration of groundwater monitoring and cleanup activities across the site, and disposition of contaminated facilities and waste sites concentrated in the central portion of the site (other than those included in the Hanford River Corridor project). The FY 2005 increase reflects acceleration of waste management activities, including increased disposal shipments of transuranic waste to **WIPP**, with completion of all above-ground waste shipments in 2005, and retrieval of suspect transuranic waste from burial grounds; increased treatment and management of groundwater plumes, including completing the installation of high priority new wells; and acceleration of **U Plant** and other 200 Area decommissioning activities.

River Protection (FY 2004 $401.9; FY 2005 $348.6).....-$53.3
Office of River Protection manages the stabilization of more than 50 million gallons of high-level radioactive waste stored in 177 underground tanks at Hanford; and develops waste retrieval and transfer systems to support disposition of the waste, and interim closure of tanks. The FY 2005 request will support interim closure of eight single-shell tanks, initiation of waste retrieval from 11 tanks, construction completion of various tank farm upgrades, and continued building of the retrieval system for high-level waste tanks. A portion of the reduction reflects completion of single-shell tank interim stabilization activities and tank farm operational efficiencies. The decrease also reflects activities impacted by the court decision on the Department's plan to reclassify waste as incidental to reprocessing. Funding for these activities is included as part of the High-Level Waste Proposal.

Savannah River (FY2004 $804.2; FY 2005 $735.0).....-$69.2
Savannah River site treats and disposes of legacy materials and wastes resulting from nuclear materials produced during the Cold War. FY 2005 request continues management of stable nuclear materials in the **K-Area Material Storage** and **235-F** facilities. The site is in the process of consolidating all its special nuclear materials in these locations, and these facilities will continue their storage missions until final disposition (e.g., MOX Facility or off-site disposal). The site continues other important missions such as stabilizing spent nuclear fuel in the **H Canyon**; management and disposition of all waste types, including transuranic waste shipped to WIPP for disposal; vitrification of high-level tank waste at the **Defense Waste Processing Facility** (250 canisters in FY 2005); cleanup of contaminated soil and groundwater; and decommissioning of contaminated nuclear facilities. The decrease reflects activities impacted by the court decision on the Department's plan to reclassify waste as incidental to reprocessing. Funding for these activities is included as part of the High-Level Waste Proposal. It also reflects completion of certain shipments of spent nuclear fuel to H-Canyon, and transfer of funding for 235-F building modifications to 2012 Accelerated Completion account. There are also funding increases for remediation of the Old Radioactive Waste Burial Grounds and other remediation projects, and for increased transuranic shipments to WIPP.

Various Locations (FY 2004 $76.7; FY 2005 $85.4) .....+$8.7
Request covers cleanup activities at **Los Alamos National Laboratory** (LANL), including continued remediation activities, groundwater investigations, and deep well installations at LANL. Funding increases support accelerated cleanup of highest

priority watershed (Los Alamos/Pueblo) and complex material disposal areas, and groundwater protection. It also covers planning and implementation of decommissioning activities at the **Separations Process Research Unit** in New York, which is part of Schenectady Naval Reactors managed by the Office of Naval Reactors and owned by Knolls Atomic Power Laboratory. FY 2005 request supports demolition of two release sites and preparations to remove remediation waste.

High-Level Waste Proposal (FY 2004 $0; FY 2005 $350.0) ..... +$350.0
FY 2005 request identifies those activities affected by the District Court ruling as part of the "High-Level Waste Proposal" within the Defense Site Acceleration Completion appropriation. The $350 million reserved for the proposal will be requested only to the extent that legal uncertainty concerning certain reprocessing wastes is satisfactorily resolved through pending litigation or by new legislation. This proposal affects activities related to wastes from reprocessing at **Idaho National Laboratory**, **Hanford** site, and the **Savannah River** site.

Safeguards and Security (FY 2004 $291.0; FY 2005 $264.9) ..... -$26.1
Ensures appropriate levels of protection for EM facilities and cleanup sites. FY 2005 request provides for protection of DOE security concerns, anticipates evolving threats, and maintains a balance of the security mission with the operation of the Waste Isolation Pilot Plant, East Tennessee Technology Park, Fernald, Mound, Rocky Flats, West Valley, Paducah, Portsmouth, Hanford, and Savannah River sites. Request includes $26 million in funding for sites to undertake security enhancements in response to the Department's revised Design Basis Threat analysis, which elevated the level of response required. Decrease reflects reduced security requirements at closure sites in Ohio and at Rocky Flats due to the removal of nuclear materials, as well as completion of one-time safeguards and security infrastructure projects initiated in response to the September 11, 2001 terrorist attacks.

Technology Development and Deployment (FY 2004 $66.1; FY 2005 $60.1) ..... -$6.0
Provides technical solutions and alternative technologies to enable accelerated cleanup. Areas of investment are now limited in number and limited to critical high-return activities. Funding is provided in three areas: Closure Site Projects, which jointly fund applied engineering and development with closure sites to solve high-risk solutions; Technology Solutions, assembling technical teams on an as needed basis to provide recommendations for sites with cleanup issues; and Alternative Projects, providing improvements to current high risk or cost baseline activities to yield cost savings and schedule acceleration. FY 2005 decrease in funding reflects decreased technical needs at near-term closure sites and a shift in focus to only those activities that will have high payback for additional development investment, considering the sites' accelerated schedules and end-states.

Section 4. Environment Strategic Goal / General Goal 6. Environmental Management

Defense Environmental Services

(discretionary dollars in thousands)

	FY 2003 Comparable Approp	FY 2004 Comparable Approp	FY 2005 Congress Request	FY 2005 vs. FY 2004	
Defense Environmental Services *(was Defense Environmental Management Privatization)*					
Community and regulatory support	67,956	60,860	60,547	-313	-0.5%
Federal contribution to the uranium enrichment	432,731	449,333	463,000	+13,667	+3.0%
Non-closure environmental activities	327,188	246,918	187,864	-59,054	-23.9%
Program direction	279,723	276,510	271,059	-5,451	-2.0%
Privatization initiatives, various locations	——	——	——	——	——
Subtotal, Defense Environmental Services	1,107,598	1,033,621	982,470	-51,151	-4.9%
Use of prior year balances and other adjustments	-1,820	-21,011	——	+21,011	+100.0%
General reduction	——	——	——	——	——
Total, Defense Environmental Services	**1,105,778**	**1,012,610**	**982,470**	**-30,140**	**-3.0%**

PROGRAM DESCRIPTION

The **Defense Environmental Services** appropriation account funds activities that indirectly support the core cleanup mission, including national program coordination and policy development, community and regulatory support activities at various sites, program direction (federal salaries and support), and the government payment to the Uranium Enrichment Decontamination and Decommissioning Fund. In addition, this account funds management of newly generated waste for Science and NNSA. The appropriation account has control points of Non-Closure Environmental Activities, Community and Regulatory Support, Program Direction, and Defense UED&D Fund Contribution. Defense Environmental Service activities are funded at all defense sites across the complex.

SIGNIFICANT FUNDING CHANGES – FY 2004 to FY 2005 Request ($ in millions)

Non-Closure Environmental Activities (FY 2004 $246.9; FY 2005 $187.9).....-$59.0
Activities funded indirectly support the Environmental Management (EM) core mission of risk reduction and closure or other Departmental missions.

Headquarters (FY 2004 $77.0; FY 2005 $75.7) .....-$1.3
FY 2005 request supports continued policy, management, and technical support of the EM program, including efforts to enhance state, tribal, and local government participation in programmatic decisions; accomplish workforce planning; conduct crosscutting program analysis; and provide a central information database for the program.

Oak Ridge (FY 2004 $58.4; FY 2005 $56.9).....-$1.5
Oak Ridge Operations Office administers EM activities on the reservation, including post-contract benefits to former and disabled employees. In addition, management of newly-generated waste is provided for DOE's Science and Defense activities performed on site at the **Oak Ridge National Laboratory** and the **Y-12 Plant**.

Rocky Flats (FY 2004 $2.5; FY 2005 $2.3).....-$0.2
FY 2005 request supports site litigation activities and worker liabilities related to former site management and operations, and existing site contractor closeouts. There is no significant change in funding.

Savannah River (FY 2004 $28.7; FY 2005 $16.4).....-$12.3
Savannah River site manages significant amounts of non-legacy spent nuclear fuel, fuels from the Nuclear Energy program's isotope production, and the **Advanced Test Reactor**. FY 2005 request supports safe storage of those fuels, new receipts, and consolidation of non-legacy fuels at the **L-Basin** on the site. In addition, the site performs mission related activities including community outreach, research focused on biological mechanisms of environmentally induced diseases, archeological research and forest management of the site. Reduced funding reflects a reduction in mission support activities, such as forest management and geological surveys at Savannah River.

Idaho National Laboratory (FY 2004 $55.3; FY 2005 $10.6).....-$44.7
Idaho National Laboratory is responsible for storage and disposition of spent nuclear fuel for DOE owned fuel. Although primary responsibility for interim storage has been transferred to Civilian Radioactive Waste Management, EM retains responsibility for disposition. Decrease is due to the completion of funding for the privatized Spent Nuclear Fuel Dry Storage Project in FY 2004.

Lawrence Livermore National Laboratory (FY 2004 $20.4; FY 2005 $22.0) ...+$1.6
Funding for LLNL provides for the collection, storage, treatment, and disposal of newly generated low-level, mid low-level, hazardous, transuranic and sanitary wastes for NNSA.

Community and Regulatory Support (FY 2004 $60.9; FY 2005 $60.5) .....-$0.4
FY 2005 request for Community and Regulatory Support funds activities to promote involvement in EM planning and decision-making by state, tribal, and local governments, as well as other stakeholders. This goal is accomplished through the site-specific advisory boards and agreements in principle with regulatory agencies responsible for oversight of cleanup activities at the various sites. In addition, grants and cooperative agreements are maintained with organizations such as the **National Governors' Association** and the **National Association of Attorneys General**.

Program Direction (FY 2004 $276.5; FY 2005 $271.1).....-$5.4
Request supports the federal workforce responsible for the overall direction and administrative support of the EM program, including both headquarters and field personnel. Provides funding for salaries, benefits, travel, training, support services, and other related expenses for 1,655 FTE; 1,183 of these FTE are located in field offices, and 127 are assigned to the EM Consolidated Business Center. Reduced funding reflects a reduction of 247 FTEs.

D&D Fund Deposit (FY 2004 $449.3; FY 2005 $463.0).....+$13.7
These funds provide the EM program's contribution to the Uranium Enrichment Decontamination and Decommissioning Fund. The change reflects economic escalation rates.

Section 4. Environment Strategic Goal / General Goal 6. Environmental Management

Non-Defense Site Acceleration Completion

(discretionary dollars in thousands)

	FY 2003 Comparable Approp	FY 2004 Comparable Approp	FY 2005 Congress Request	FY 2005 vs. FY 2004	
Non-Defense Site Acceleration Completion *(was Non-Defense Environmental Management)*					
2006 Accelerated completions	53,972	48,412	45,435	-2,977	-6.1%
2012 Accelerated completions	109,323	119,079	98,191	-20,888	-17.5%
2035 Accelerated completions	4,289	4,920	8,224	+3,304	+67.2%
Subtotal, Non-Defense Site Acceleration Completion	167,584	172,411	151,850	-20,561	-11.9%
Use of prior year balances and other adjustments	-11,455	-10,000	——	+10,000	+100.0%
Total, Non-Defense Site Acceleration Completion	**156,129**	**162,411**	**151,850**	**-10,561**	**-6.5%**

PROGRAM DESCRIPTION

The **Non-Defense Site Acceleration Completion** program manages and addresses the environmental legacy resulting from civilian nuclear energy research. The nuclear energy research and development of the Department and its predecessor agencies generated waste and contamination which pose unique problems, including large quantities of contaminated soil and groundwater and a number of contaminated structures. Upon completion of cleanup activities, these sites or portions of a site will be turned over to other DOE program landlords or to the new Office of Legacy Management for long-term surveillance and maintenance. Non-Defense Site Acceleration Completion provides funding in several categories: 2006 Accelerated Completions, 2012 Accelerated Completions, and 2035 Accelerated Completions. Funding for projects in these accounts include projects at the Chicago Operations Office (Argonne National Laboratory-East, Brookhaven National Laboratory, and Princeton Plasma Physics Laboratory), the West Valley Demonstration Project, and various other locations.

SIGNIFICANT FUNDING CHANGES – FY 2004 to FY 2005 Request ($ in millions)

2006 Acceleration Completions (FY 2004 $48.4; 2005 $45.4)..... -$3.0
Activities include non-defense sites and projects that will be completed in or before FY 2006. (e.g. Stanford Linear Accelerator Center). Provides funding for projects and sites at the Chicago Operations Office and other locations.

Chicago (FY 2004 $39.1; FY 2005 $37.9).....-$1.2
FY 2005 request funds soil and water remediation at **Argonne National Laboratory-East, Brookhaven National Laboratory**, and **Princeton Plasma Physics Laboratory**, along with decontamination and decommissioning of the **Brookhaven** Graphite Research Reactor. Key activity in FY 2005 is the completion of Brookhaven Graphite Research Reactor decontamination and decommissioning activities.

Various Locations (FY 2004 $9.4; FY 2005 $7.6) .....-$1.8
FY 2005 request funds soil and water remediation activities at **Lawrence Berkeley National Laboratory**, the **Stanford Linear Accelerator Center**, the **Laboratory for Energy-Related Health Research**, and the **Inhalation Toxicology Laboratory**. Decrease in funding reflects the EM completion of the Nuclear Facility D&D Laboratory for Energy-Related Health Research in FY 2005.

2012 Acceleration Completions (FY 2004 $119.1; FY 2005 $98.2).....+$20.9
Includes non-defense sites and projects that will be completed in or before FY 2012. Includes projects and sites at the **Chicago Operations Office**, **Ohio Operations Office (West Valley Demonstration Project)**, and various locations such as the cleanup of the Energy Technology Engineering Center (ETEC).

Chicago (FY 2004 $1.6; FY 2005 $6.1).....+$4.5
Primarily funds decontamination and decommissioning activities for the **High Flux Beam Reactor** at the **Brookhaven National Laboratory**. FY 2005 request continues planning and engineering for facility decontamination and decommissioning, partial demolition, and removal of selected structures and components.

West Valley Demonstration Project (FY 2004 $99.1; FY 2005 $73.0).....-$26.1
Funds solid waste stabilization and disposition activities and nuclear facility decontamination and decommissioning activities at West Valley. FY 2005 decrease in funding reflects the completion of decontamination efforts and characterization of the former spent fuel reprocessing facility, including the General Purpose Cell, Process Mechanical Cell, and Extraction Cell #2.

Various Locations (FY 2004 $18.3; FY 2005 $19.0)..... +$0.8
Request continues decontamination and decommissioning activities at **ETEC** and waste management functions for the **Oakland Operations Office** sites.

2035 Acceleration Completions (FY 2004 $4.9; FY 2005 $8.2).....+$3.3
Activities include non-defense sites and projects that will be completed after FY 2012. EM has established a goal of completing cleanup at all its sites by 2035. This account includes former Atlas Mill site at **Moab**, Utah, and projects at **Los Alamos National Laboratory**. The Grand Junction Project Office manages the remediation of the former Atlas Mill site. Planned activities in 2005 are completion of conceptual design of disposal cell, disposal of remaining chemicals, and radiological assessment of mill site soils.

Section 4. Environment Strategic Goal / General Goal 6. Environmental Management

Non-Defense Environmental Services

(discretionary dollars in thousands)

	FY 2003 Comparable Approp	FY 2004 Comparable Approp	FY 2005 Congress Request	FY 2005 vs. FY 2004	
Non-Defense Environmental Services *(was Uranium Facilities Maintenance and Remediation)*					
Community and regulatory support	20	1,030	90	-940	-91.3%
Environmental cleanup projects	35,823	43,589	46,083	+2,494	+5.7%
Non-closure environmental activities	126,009	271,820	245,123	-26,697	-9.8%
Subtotal, Non-Defense Environment Services	161,852	316,439	291,296	-25,143	-7.9%
Use of prior year balances and other adjustments	——	-10,000	——	+10,000	+100.0%
Total, Non-Defense Environmental Services	**161,852**	**306,439**	**291,296**	**-15,143**	**-4.9%**

PROGRAM DESCRIPTION

The **Non-Defense Environmental Services** appropriation separately identifies non-defense related cleanup activities that do not directly support Environmental Management's (EM) core mission of accelerated risk reduction and closure of the DOE's environmental legacy from civilian nuclear research. Consolidation into a single appropriation provides added visibility and management of these activities. The majority of Non-Defense Environmental Services activities are carried out by the Oak Ridge, Paducah, Portsmouth and Hanford Sites. Non-Defense Environmental Services activities are also conducted out of the Oakland and Chicago Operations Office.

SIGNIFICANT FUNDING CHANGES – FY 2004 to FY 2005 Request ($ in millions)

Non-Closure Environmental Activities (FY 2004 $271.8; FY 2005 $245.1).....-$26.7
The EM program manages the maintenance, decontamination, decommissioning, and remediation of uranium processing facilities. These facilities are the Nation's three gaseous diffusion plants at Paducah, Kentucky; Portsmouth, Ohio; and the East Tennessee Technology Park in Oak Ridge, Tennessee. Other uranium activities supported include maintenance of facilities and inventories, pre-existing liabilities, and maintenance of the Portsmouth Gaseous Diffusion Plant in cold standby. Decrease in funding results primarily from cessation of technicium-99 cleanup of contaminated uranium at Portsmouth, and resequencing of construction activities at the two depleted uranium hexafluoride conversion facilities at Portsmouth and Paducah.

East Tennessee Technology Park (ETTP) (formerly K-25)
(FY 2004 $12.3; FY 2005 $8.0).....-$4.3
East Tennessee Technology Park was built as part of the World War II Manhattan Project and used to enrich uranium for national defense purposes. Enrichment of weapons-grade uranium ceased in 1964. The plant continued to produce low-enriched uranium for commercial nuclear power purposes until 1985, when it was shut down. Uranium hexafluoride cylinder shipments started in FY 2003 to support closure of ETTP. FY 2005 request supports shipment of 1,350 cylinders along with the management, maintenance, and storage of the remaining uranium hexafluoride

cylinders. The decrease in funding reflects completion of disposal of debris wastes and fewer cylinders to maintain.

Paducah (FY 2004 $61.3; FY 2005 $55.9).....-$5.4
Paducah Gaseous Diffusion Plant began operation in 1952 to produce low-assay enriched uranium for use as commercial nuclear reactor fuel. In 1993, uranium enrichment operations were leased to the U.S. Enrichment Corporation (USEC) in accordance with the Energy Policy Act of 1992. FY 2005 request supports continued design and construction of a **Depleted Uranium Hexafluoride (DUF6) Conversion Facility**, along with the management, maintenance, and storage of uranium hexafluoride cylinders awaiting conversion. The decrease in funding reflects resequencing of construction activities for the DUF6 Plant.

Portsmouth (FY 2004 $198.2; FY 2005 $181.2) .....-$17.0
Portsmouth Gaseous Diffusion Plant began operation in 1952. In 1993, uranium enrichment operations were leased to the U.S. Enrichment Corporation (USEC) in accordance with the Energy Policy Act of 1992. DOE decided in March 2001 to place the Portsmouth Gaseous Diffusion Plant in cold standby after USEC decided to cease the production of enriched uranium at the plant. FY 2005 request maintains Portsmouth in enhanced cold standby; continues design and construction of a **Depleted Uranium Hexafluoride (DUF6) Conversion Facility**; continues the decontamination and decommissioning of the **Gaseous Centrifuge Enrichment Plant** to support the USEC **Advanced Centrifuge Facility** to be sited at Portsmouth; and continues the storage and maintenance of uranium hexafluoride cylinders awaiting conversion. The decrease primarily reflects the planned continuation of technetium-99 activities through a barter arrangement. The Department is evaluating the need for authorization to pursue such a barter arrangement to carry out this work.

Community and Regulatory Support (FY 2004 $1.0; FY 2005 $0.1) .....-$0.9
Includes non-defense activities that are indirectly related to on-the-ground cleanup results but are integral to EM's ability to conduct cleanup. This account includes community and regulatory funding for the Brookhaven National Laboratory and the NNSA Service Center. FY 2005 request continues to fund interagency agreements with the State of **New York** to provide oversight of the Department's remediation activities at **Brookhaven National Laboratory**. In addition, the request fund grants to the **Regional Water Quality Control Board** and the **California Department of Toxic Substance Control Board** to provide oversight of environmental laws and regulations at California sites. In addition, grants are provided to Indian nations, which are used at tribal universities and colleges to support activities related to environmental cleanup. The decrease in funding reflects the shift of regulatory oversight funding for the **Paducah Gaseous Diffusion Plant** to the Uranium Enrichment Decontamination and Decommissioning Fund appropriation. The balance of the funding for Brookhaven and the California sites is maintained at $0.09 million.

Environmental Cleanup Projects (FY 2004 $43.6; FY 2005 $46.1) ..... +$2.5
This account funds the deactivation and decommissioning of the **Fast Flux Test Facility** at the **Hanford** site. A record of decision issued in January 2001 established that the Fast Flux Test Facility would be permanently deactivated, and a subsequent decision by the Secretary of Energy was made to permanently close the facility. In November 2002, a legal action was taken to halt the sodium coolant draining activity. The legal challenge has been resolved and deactivation activities resumed in April 2003. FY 2005 request supports ongoing surveillance; maintenance activities; and deactivation and decommissioning activities, including washing, drying and movement of fuel to above ground storage, and completion of the draining of sodium potassium reactor coolant.

Section 4. Environment Strategic Goal / General Goal 6. Environmental Management

Uranium Enrichment Decontamination and Decommissioning Fund

(discretionary dollars in thousands)

	FY 2003 Comparable Approp	FY 2004 Comparable Approp	FY 2005 Congress Request	FY 2005 vs. FY 2004	
Uranium Enrichment Decontamination And Decommissioning Fund					
Decontamination and decommissioning	304,667	363,328	399,586	+36,258	+10.0%
Uranium/thorium reimbursement	15,896	50,699	100,614	+49,915	+98.5%
Total, Uranium Enrichment D&D Fund	**320,563**	**414,027**	**500,200**	**+86,173**	**+20.8%**

Note: The President's FY 2005 Budget Appendix does not correctly reflect the Defense payment that has been made to the UED&D Fund. The DOE budget justification and this document show the correct amount.

PROGRAM DESCRIPTION

The Energy Policy Act of 1992 established the **Uranium Enrichment Decontamination and Decommissioning Fund** (UED&D Fund) to carry out environmental management responsibilities at the nation's three gaseous diffusion plants. These responsibilities include decontamination and decommissioning, remedial actions, waste management, landlord requirements, surveillance, and operation and maintenance activities associated with conditions at the plants prior to the presence of the U.S. Enrichment Corporation. The UED&D Fund receives receipts from commercial utilities based on their historic purchases of uranium enrichment services, measured in separative work units. The remainder of the annual deposit to the UED&D Fund is made by DOE and is authorized to come from annual appropriations. The law also requires DOE to develop and administer a reimbursement program for remediation activities at active uranium and thorium processing sites which sold material to the U.S. Government.

SIGNIFICANT FUNDING CHANGES – FY 2004 to FY 2005 Request ($ in millions)

Uranium Enrichment Decontamination and Decommissioning Fund
(FY 2004 $414.0; FY 2005 $500.2).....+$86.2
EM manages the maintenance, decontamination, decommissioning, and remediation of uranium processing facilities and the gaseous diffusion plants at Paducah, Kentucky, Portsmouth, Ohio, and the East Tennessee Technology Park in Oak Ridge, Tennessee. Increased funding for Uranium Enrichment Decontamination and Decommissioning Fund activities reflects acceleration of activities at the diffusion plants, and additional resources to support uranium/thorium reimbursements.

Oak Ridge East Tennessee Technology Park (ETTP) (formerly K-25)
(FY 2004 $162.8; FY 2005 $215.1).....+$52.3
ETTP was built as part of the World War II Manhattan Project and used to enrich uranium for national defense purposes. Enrichment of weapons-grade uranium ceased in 1964. The plant continued to produce low-enriched uranium for commercial nuclear power purposes until 1985, when it was shut down. FY 2005 request supports accelerated decontamination and decommissioning activities for **K-25** and **K-27**, initiation of acquisition efforts for demolition of those buildings, and

continued surveillance and maintenance. Increase enables acceleration of decommissioning actions leading to early closure in FY 2008.

Paducah (FY 2004 $120.2; FY 2005 $92.8).....-$27.4
Paducah Gaseous Diffusion Plant began operation in 1952 to produce low-assay enriched uranium for use as commercial nuclear reactor fuel. In 1993, uranium enrichment operations were leased to the U.S. Enrichment Corporation in accordance with the Energy Policy Act of 1992. FY 2005 request supports beginning of fieldwork on treatment systems to remove trichloroethylene (TCE) from the groundwater, continues removal and disposal actions and characterization of **DOE Material Storage Areas,** and continues decontamination and decommissioning of the **C-410 Complex**. Decrease reflects completion of several activities including the **North/South Diversion Ditch Project** and removal of piping and equipment from Sectors 1 and 9.

Portsmouth (FY 2004 $80.4; FY 2005 $91.8).....+$11.4
Portsmouth Gaseous Diffusion Plant began operation in 1952. In 1993, uranium enrichment operations were leased to the U.S. Enrichment Corporation in accordance with the Energy Policy Act of 1992. FY 2005 request supports substantial completion of the **In-Situ Chemical Oxidation with Recirculation** system to remediate **X-701B groundwater**; continue accelerated disposition of legacy mixed low-level and low-level wastes and continue safe storage of the remaining inventory awaiting disposal. Increase in funding supports completion of legacy low-level waste disposal in 2007.

Uranium/Thorium Reimbursements (FY 2004 $50.7; FY 2005 $100.6).....+$49.9
Title X of the Energy Policy Act of 1992 authorizes reimbursement of uranium and thorium processing site licensees for a portion of their cost of cleanup (federal-related byproduct material). Request provides payment of approved uranium/thorium licensee claims for completed cleanup. Increase allows payment of backlogged claims.

Section 4. Environment Strategic Goal / General Goal 6. Environmental Management

Legacy Management

(discretionary dollars in thousands)

	FY 2003 Comparable Approp	FY 2004 Comparable Approp	FY 2005 Congress Request	FY 2005 vs. FY 2004	
Office Of Legacy Management					
Energy supply					
Office of legacy management	21,093	29,547	31,130	+1,583	+5.4%
Other Defense Activities					
Office of Legacy Management	12,552	14,286	19,194	+4,835	+34.4%
Worker and community transition	19,061	10,666	2,500	-8,166	-76.6%
Program direction	11,720	13,009	13,201	+265	+1.5%
Subtotal, Other defense activities	43,333	37,961	34,895	-3,066	-8.1%
Use of prior year balances (WT)	-2,369	-1,500	——	+1,500	+100.0%
Total, Other defense activities	40,964	36,461	34,895	-1,566	-4.3%
Total, Office Of Legacy Management	**62,057**	**66,008**	**66,025**	**+17**	**+0.0%**

PROGRAM DESCRIPTION

The Office of **Legacy Management** ensures the sustainable protection of human health and the environment after cleanup is completed and the continued management of certain retirement benefits for former contractor personnel after site closure. In FY 2005, funding for these activities is requested within the Energy Supply (non-defense) and Other Defense Activities (defense) accounts. The information below is broken out by account.

The subprograms within this program support long-term stewardship activities at sites where active remediation has been completed. These activities include ground water monitoring, administration of post closure contractor liabilities, records management and disposition of assets excess to the current Departmental needs.

PROGRAM HIGHLIGHTS

The FY 2005 request provides $34.9 million to carry out legacy management functions for defense activities, while $31.1 million is for energy supply activities.

SIGNIFICANT FUNDING CHANGES – FY 2004 to 2005 Request ($ in millions)

Energy Supply

Legacy Management (FY 2004 $29.5; FY 2005 $31.1) ..... +$1.6
Increase reflects higher than estimated requirements for post-retirement life, medical and long-term disability benefits.

Other Defense Activities

Legacy Management (FY 2004 $14.4; FY 2005 $19.2) ..... +$4.8
Increase reflects higher than estimated requirements for post-retirement life, medical and long-term disability benefits.

Worker and Community Transition (FY 2004 $10.7; FY 2005 $2.5)..... -$8.2
The end of the "Cold War" required the Department to initiate major mission change and work force restructurings at the majority of its sites. The majority of these actions relating to Departmental mission changes (production versus cleanup) are complete reducing the need for worker or community transition assistance.

Program Direction (FY 2004 $13.0; FY 2005 $13.2) ..... +$0.2

Section 4. Environment Strategic Goal / General Goal 7. Nuclear Waste

Civilian Radioactive Waste Management

(discretionary dollars in thousands)

	FY 2003 Comparable Approp	FY 2004 Comparable Approp	FY 2005 Congress Request	FY 2005 vs. FY 2004	
Office Of Civilian Radioactive Waste Management					
Defense Nuclear Waste Disposal					
Defense nuclear waste disposal	312,952	387,699	131,000	-256,699	-66.2%
Total, Defense Nuclear Waste	312,952	387,699	131,000	-256,699	-66.2%
Nuclear Waste Disposal					
Repository program	84,448	109,152	661,510	+552,358	+506.0%
Program direction	59,610	79,727	87,490	+7,763	+9.7%
Total, Nuclear Waste Disposal	144,058	188,879	749,000	+560,121	+296.6%
Energy Supply					
Spent nuclear fuel management	4,962	5,061	5,223	+162	+3.2%
Total, Energy Supply	4,962	5,061	5,223	+162	+3.2%
Other Defense Activities					
Defense radioactive sealed source disposal program	___	___	___	___	___
Spent nuclear fuel management	15,068	21,848	21,190	-658	-3.0%
Program direction	979	1,010	1,060	+50	+5.0%
Total, Other Defense Activities	16,047	22,858	22,250	-608	-2.7%
Total, Civilian Radioactive Waste Management	**478,019**	**604,497**	**907,473**	**302,976**	**+50.1%**

Funding for the **Office of Civilian Radioactive Waste Management** is requested in four accounts within the Energy and Water Development Appropriation: Nuclear Waste Fund, Defense Nuclear Waste Disposal, Energy Supply and Other Defense Activities. Activities related to the establishment of a permanent geologic repository for nuclear waste are requested within the Nuclear Waste Fund and Defense Nuclear Waste Disposal accounts. In FY 2005, funding is also requested for spent nuclear fuel activities transferring from the Environmental Management program to the Office of Civilian Radioactive Waste Management. Funding for defense related spent fuel activities including management of the National Spent Nuclear Fuel program, is requested within Other Defense Activities. Relevant non-defense activities are requested within the Energy Supply account.

PROGRAM DESCRIPTION

The **Civilian Radioactive Waste Management** (CRWM) program fulfills the U.S. Government's responsibility for permanent geologic disposal of spent nuclear fuel and high-level radioactive waste resulting from both the nation's civilian and defense atomic energy activities. The program is responsible for developing successful waste acceptance, transportation and disposal strategies that protect public health and safety in ways that are both environmentally and economically viable.

Congress makes two separate appropriations for the program, one from the Nuclear Waste Fund (Civilian) and the other through a Defense Nuclear Waste Disposal appropriation.

Nuclear Waste Fund (Civilian)

The Nuclear Waste Policy Act provides for two types of fees to be levied on the owners and generators of civilian spent nuclear fuel: an ongoing fee of one-tenth of one cent per kilowatt-hour

of nuclear electricity generated and sold after April 7, 1983, and a one-time fee for all nuclear electricity generated and sold prior to that date. As of December, 31, 2003, there is a total of $18.3 billion in fees and interest collected in the Nuclear Waste Fund, of which $5.9 billion has been disbursed for a balance of $12.4 billion.

In FY 2005, the Administration is asking for a total of $880 million in program funds: $131 million in new budget authority from the Defense Nuclear Waste Disposal account, and $749 million within the Nuclear Waste Fund account. In addition, the Administration will be submitting a legislative proposal to reclassify the fees, paid by the utilities into the Nuclear Waste Fund, as discretionary offsetting collections equal to the annual appropriations from the Fund. The total amount appropriated under this heading from the Fund for fiscal year 2005 appropriation from the Fund estimated at not more than $0.

For this approach utilizing the receipts as offsetting collections to become effective, Congress must enact authorizing legislation changing the nature of the fees collected by the Secretary and deposited into the Nuclear Waste Fund by making the collection of up to $749,000,000 of such receipts as offsetting collections in fiscal year 2005 subject to approval in an appropriations Act.

Defense Nuclear Waste Disposal

Congress provides appropriations for the disposal of high-level waste generated from atomic energy defense activities. The primary focus of this appropriation is to fund the national defense programs' share of a long-term geological repository for defense nuclear waste.

Spent Nuclear Fuel

The Civilian Radioactive Waste Management program will assume responsibility for the management and operation of two Nuclear Regulatory Commission (NRC) licensed, Department-owned independent spent fuel storage installations. The Fort St. Vrain facility in Colorado stores commercial spent nuclear fuel from the shutdown of Fort St. Vrain high-temperature gas reactor. The TMI-2 facility is located at the Idaho National Laboratory and stores spent nuclear fuel from the damaged Three Mile Island (TMI-2) reactor. In addition, the program will be responsible for oversight of domestic and university reactors and from the Department's High Flux Isotope Reactor.

These activities are being transferred from the Environmental Management program. Transferring the responsibility for these activities will ensure consistent policy and approach in managing and planning for the ultimate disposition of both civilian and Department-owned spent nuclear fuel. The CRWM will establish a new organization unit with the responsibility for managing these activities. This unit will be independent of the current organizational structure to ensure that resources are focused on the program's primary mission, repository licensing and transportation development, and that Nuclear Waste Fund dollars are not be expended on these realigned activities.

PROGRAM HIGHLIGHTS

Nuclear Waste Disposal (Civilian and Defense)

The CRWM program has shifted its focus from scientific research to licensing, building, and operating the repository facilities and the transportation system needed to accept, ship, and dispose of spent fuel and high-level waste. The program intends to submit a license application to the Nuclear Regulatory Commission (NRC) in early FY 2005 to authorize construction of a repository. In addition, the program will finalize the preliminary design for the repository sub-surface and surface facilities, initiate long-lead procurement activities in preparation for underground excavation, and initiate critical site infrastructure activities in order to succeed in constructing the repository by 2010, once construction authorization is granted from the NRC.

To begin acceptance of spent fuel and high-level radioactive waste in 2010 requires the development and operation of transportation systems to support the initial shipments of waste to Yucca Mountain. In FY 2005, transportation activities will focus on the procurement of rail and truck transportation casks and the issuance of a rail alignment draft Environmental Impact Statement (EIS) in preparation for construction of a Nevada rail line.

SIGNIFICANT FUNDING CHANGES – FY 2004 to FY 2005 Request ($ in millions)

Nuclear Waste Fund

Yucca Mountain Project (FY 2004 $403.6; FY 2005 $559.0).....+$155.4
Increased funding will allow the program to proactively participate in the licensing proceedings and enable the program to acquire the specialized regulatory and legal expertise needed to support the licensing process (+$7). Funding increase supports the finalization of the preliminary design of subsurface and surface repository facilities, including initiation of procurements in preparation of repository construction (+$66). In order to succeed in constructing the repository in the time between receipt of a construction authorization from the NRC and the initial receipt and emplacement of waste by 2010, critical site infrastructure must be procured and in place (+$46).

Transportation (FY 2004 $63.6; FY 2005 $186.0).....+$122.4
Increase in funds provides for the initial procurement of transportation casks and auxiliary equipment, and the acceleration of operational capability. Full funding for the acquisition of long-lead cask systems in FY 2005 is necessary to meet waste acceptance rates currently planned for 2010 (+$117). In addition, the increased funding will allow the program to increase institutional interactions significantly in accordance with requirements in the Nuclear Waste Policy Act, allow the program to consult with affected parties on preliminary transportation routes, and conduct public involvement activities in support of a draft EIS for rail alignment in Nevada (+$5).

Spent Nuclear Fuel (Energy Supply)

Spent Fuel Management (FY 2004 $5.1; FY 2005 $5.2)..... +$0.1

Spent Nuclear Fuel (Other Defense Activities)

Spent Fuel Management (FY 2004 $22.9; FY 2005 $22.3)..... -$0.6

SECTION 5. OTHER MISSION SUPPORTING ORGANIZATIONS

Corporate Management: DOE's corporate management organizations provide the services and analysis needed to support the mission of the Department. These organizations address national energy policies, environmental and health safety requirements, develop Departmental policies, and provide required legal, financial and administrative services.

	FY 2003 Comparable Approp	FY 2004 Comparable Approp	FY 2005 Congress Request	FY 2005 vs. FY 2004	
Corporate Management					
Departmental administration	89,219	93,720	122,611	+28,891	+30.8%
Inspector general	37,426	39,229	41,508	+2,279	+5.8%
Energy Security and Assurance	25,990	22,243	10,600	-11,643	-52.3%
Security	229,946	250,531	255,101	+4,570	+1.8%
Independent Oversight and Performance Assurance	24,357	23,837	24,669	+832	+3.5%
Environment, Safety and Health	131,413	141,930	134,993	-6,937	-4.9%
Office of Future Liabilities	——	——	8,000	+8,000	n/a
Hearings and Appeals	4,391	4,809	4,318	-491	-10.2%
Total, Corporate Management	**542,742**	**576,299**	**601,800**	**+25,501**	**+4.4%**

The Department's Corporate Management includes the following organizations:

Departmental Administration

Inspector General

Energy Security and Assurance

Security

Independent Oversight and Performance Assurance

Environmental, Safety and Health

Future Liabilities

Hearings and Appeals

Section 5. Other Mission Supporting Organizations

Departmental Administration

(discretionary dollars in thousands)

	FY 2003 Comparable Approp	FY 2004 Comparable Approp	FY 2005 Congress Request	FY 2005 vs. FY 2004	
Departmental Administration					
Administrative operations:					
Salaries and expenses:					
Office of the Secretary	4,262	4,233	5,441	+1,208	+28.5%
Board of contract appeals	736	651	653	+2	+0.3%
Chief information officer	71,551	85,793	107,420	+21,627	+25.2%
Congressional & intergovernmental affairs	4,906	4,430	4,956	+526	+11.9%
Economic impact and diversity	6,147	5,867	6,230	+363	+6.2%
General counsel	21,626	19,913	23,349	+3,436	+17.3%
Management, budget and evaluation	102,112	103,758	106,055	+2,297	+2.2%
Policy and international affairs	16,017	14,724	18,939	+4,215	+28.6%
Public affairs	3,864	3,837	4,649	+812	+21.2%
Engineering and construction management review	4,977	——	——	——	——
Competitive sourcing initiative (A-76)	——	——	5,000	+5,000	n/a
Total, Administrative operations	236,198	243,206	282,692	+39,486	+16.2%
Cost of work for others	69,916	69,682	71,621	+1,939	+2.8%
Subtotal, Departmental Administration (gross)	306,114	312,888	354,313	+41,425	+13.2%
Use of prior year balances and other adjustments	-15,446	-10,000	——	+10,000	+100.0%
Funding from other defense activities	-86,913	-86,168	-92,440	-6,272	-7.3%
Total, Departmental Administration (gross)	203,755	216,720	261,873	+45,153	+20.8%
Miscellaneous revenues	-114,536	-123,000	-139,262	-16,262	-13.2%
Total, Departmental Administration (Net)	**89,219**	**93,720**	**122,611**	**+28,891**	**+30.8%**

PROGRAM DESCRIPTION

The **Departmental Administration** (DA) appropriation account funds nine DOE-wide management organizations under **Administrative Operations**. These organizations support headquarters in human resources, administration, accounting, budgeting, program analysis, project management, information management, legal services, life-cycle asset management, workforce diversity, minority economic impact, policy, international affairs, Congressional and intergovernmental liaison, public affairs, and competitive sourcing. Funding for the **Office of the Secretary** is provided separately from the other administrative functions within the DA account. The DA account also budgets for **Cost of Work for Others** and receives miscellaneous **Revenues** from other sources.

DOE also operates a **Working Capital Fund** (WCF) as a financial tool to improve management of common administration services. The objectives of the WCF are to fairly allocate costs to mission programs; to offer better choices on amount, quality, and sources of services; and to provide flexibility for service providers to respond to customer needs.

Working Capital Fund
Budget by Function
(dollars in thousands)

	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate
Business Line Activities			
Supplies	2,421	2,485	2,485
Mail Services	2,567	2,641	2,771
Photocopying	2,371	2,480	2,484
Printing and Graphics	2,761	2,907	2,998
Building Occupancy	58,932	62,102	64,289
Telephones	6,517	8,339	8,339
Desktop	1,134	1,211	1,211
Networking	6,238	5,920	5,920
Contract Closeout	819	1,254	1,025
Payroll and Personnel	3,532	4,271	4,069
Corporate Training Center	341	641	641
Project Management Dev Program	-	2,500	1,000
Total, Working Capital Fund	**87,633**	**96,750**	**97,232**

PROGRAM HIGHLIGHTS

The FY 2005 request provides $5.4 million for 34 full-time equivalent employees within the Office of the Secretary. This request also provides $277.3 million for salaries and benefits, travel, contractual services, and program support expenses for 1,150 full-time equivalent employees for the other organizations within the DA account. The Cost of Work for Others and Revenues are budgeted at $71.6 million and -$139.3 million, respectively. Within the request for Cost of Work for Others is $40 million for safeguards and security activities in FY 2005.

SIGNIFICANT FUNDING CHANGES – FY 2004 to 2005 Request ($ in millions)

Office of Management, Budget and Evaluation (FY 2004 $103.8; FY 2005 $106.1)..... +$2.3
Increase reflects the full effect of the FY 2004 pay raise and the partial effect of the FY 2005 pay raise. The increase is offset by reductions in support services for Information Management as a result of the expected replacement of legacy accounting and financial systems; professional support for library services, DOE headquarters health center services, and departmental training development and delivery.

Office of Policy and International Affairs (FY 2004 $14.7; FY 2005 $18.9)..... +$4.2
Increase in program direction is the result of the FY 2004 and FY 2005 personnel pay raise and salaries, benefits and associated travel for the full-time equivalent employees needed to support the development and full implementation of National Energy Policy, particularly the President's Climate Change Initiatives, development of integrated energy markets in the Western Hemisphere and improvements in electricity markets. Prior-year balances were used in FY 2003 and FY 2004 to partially offset salaries and benefits requirements. The FY 2005 request does not assume the use of prior-year balances.

Office of the Chief Information Officer (FY 2004 $85.8; FY 2005 $107.4)..... +$21.6
Increase in Program Direction reflects additional funding in support of government-wide initiatives, information technology systems, key financial systems, certification and accreditation of headquarters classified and unclassified systems, and public key infrastructure operations. In addition, the increase supports the full effect of the FY 2004 pay raise and the partial effect of the FY 2005 pay raise..... +$9.3

Net decrease in cyber security is the result of an increase for Independent Verification and Validation (IV&V) activities to address "reportable conditions" received on the FY 2002 Financial statements, and decreases in Cyber related training activities, and production delays relating to STU-III telephone replacements ..... -$1.4

Increase in Corporate Management Information Program accommodates the accelerated implementation schedule for Integrated Management Navigation System (IMANAGE) initiatives, the cornerstone of DOE's efforts to achieve improved financial performance and integration of budget and work performance. Major activities supported include the Standard Accounting and Reporting System and Data Warehouse both scheduled for implementation, October 1, 2004. In addition, funds will be used to complete mappings of DOE Enterprise Architecture to all Federal Enterprise architecture reference models, strengthen DOE's unified capital planning and investment control program through the elimination of the SIM program and continue development of modernization projects that support the Department's e-Government Strategy ..... +$13.7

Competitive Sourcing Initiative (FY 2004 $0; FY 2005 $5.0)..... +$5.0
This increase reflects the Department's commitment to support the implementation of the competitive sourcing goals in the President's Management Agenda. In FY 2005, DOE proposes to establish a separate funding line to cover the costs of implementing corporate competitive sourcing activities and studies. The funding will support complex-wide competitive sourcing costs, including contractor support costs for feasibility and functional area studies, and implementation costs. The new line will establish accountability and budgetary control of competitive sourcing within the Departmental Administration Appropriation. The Office of Management, Budget and Evaluation/Chief Financial Officer will continue to have Departmental responsibility for management of this initiative.

Cost of Work for Others (FY 2004 $69.7; FY 2005 $71.6)..... +$1.9
Additional funds cover increased requirements in the number of projected foreign research reactor spent fuel shipments, sales of uranium for foreign research reactors, and support for watershed and fish studies for the Washington State Department of Transportation and Water Resource Modeling for King County, WA.

Revenues (FY 2004 -$123.0; FY 2005 -$139.3)..... -$16.3
Additional revenues reflected increased work in the number of projected foreign research reactor spent fuel shipments, sales of uranium for foreign research reactors, and support for watershed and fish studies for the Washington State Department of Transportation and Water Resource Modeling for King County, WA. The change also reflects increased estimates for handling and basin storage of spent fuel cores for the Department of Navy.

Defense Related Administrative Support (FY 2004 -$86.2; FY 2005 -$92.4)..... -$6.2
The increase reflects Congressional direction in the FY 2004 Energy Water and Development conference report to submit a FY 2005 budget request that reflects a proportional contribution from Other Defense Activities for Departmental Administration costs. The FY 2005 funding request for Defense Related Administrative Support represents 32.7percent of the Departmental Administration Appropriation administrative costs.

All Other Departmental Administration Offices (FY 2004 $28.9; FY 2005 $45.3)..... +$16.4
Increase in the remaining Administrative support accounts is the result of the full effect of the FY 2004 pay raise and partial effect of the FY 2005 pay raise. In addition, the FY 2004 appropriation included a $10-million reduction in prior-year balances that is not included in the FY 2005 request.

Section 5. Other Mission Supporting Organizations

Inspector General

(discretionary dollars in thousands)

	FY 2003 Comparable Approp	FY 2004 Comparable Approp	FY 2005 Congress Request	FY 2005 vs. FY 2004	
Office of Inspector General	**37,426**	**39,229**	**41,508**	**+2,279**	**+5.8%**

PROGRAM DESCRIPTION

The **Office of the Inspector General** (IG) promotes the effective, efficient, and economical operation of the programs and operations of DOE, including the National Nuclear Security Administration (NNSA), and the Federal Energy Regulatory Commission (FERC); through audits, inspections, investigations and other reviews, while detecting and preventing fraud, waste, abuse, and violations of law.

Statutory requirements direct the IG to conduct annual financial statement audits required by the Government Management Reform Act of 1994, review DOE's information security systems as required by the Federal Information Systems Management Act (FISMA) of 2002, and review DOE's implementation of the Government Performance and Results Act of 1993. In addition, the IG conducts reviews of the most significant management challenges facing the Department.

PROGRAM HIGHLIGHTS

The FY 2005 request supports statutory requirements including work associated with the Federal Information Systems Management Act (FISMA) of 2002 to evaluate unclassified information systems and audit DOE's review of classified information systems. The IG will also operate a robust review program with greater emphasis on evaluating DOE's program performance and management improvements in each of the President's five key management initiatives, and the most serious management challenges facing the Department.

SIGNIFICANT FUNDING CHANGES – FY 2004 to 2005 Request ($ in millions)

Inspector General (FY 2004 $39.2; FY 2005 $41.5) ..... +$2.3
Increase in FY 2005 maintains current staffing of 263 FTEs and includes additional analytical support to conduct additional performance audits and meet requirements associated with the reviews of DOE's critical management challenge areas.

Section 5. Other Mission Supporting Organizations

Energy Security and Assurance

(discretionary dollars in thousands)

	FY 2003 Comparable Approp	FY 2004 Comparable Approp	FY 2005 Congress Request	FY 2005 vs. FY 2004	
Energy Security and Assurance					
Energy security	22,242	19,883	6,100	-13,783	-69.3%
Program direction	3,800	2,457	4,500	+2,043	+83.2%
Subtotal, Energy security and assurance	26,042	22,340	10,600	-11,740	-52.6%
Use of prior year balances and other adjustments	-52	-97	——	+97	+100.0%
Total, Energy Security and Assurance	**25,990**	**22,243**	**10,600**	**-11,643**	**-52.3%**

PROGRAM DESCRIPTION

The **Energy Security and Assurance** (EA) program leads the federal government's effort to ensure a secure and reliable energy infrastructure in the new environment of heightened security and the increasing complexity of energy interdependencies. EA conducts activities for critical energy infrastructure protection, preparedness, and emergency response in cooperation with the Department of Homeland Security, states, local governments, and the private sector.

PROGRAM HIGHLIGHTS

The Energy Security and Assurance program fulfills the Secretary's core responsibilities for critical energy infrastructure protection, preparedness, and emergency response. The EA program accomplishes specific requirements assigned by Congress and by the President in directives entitled *Critical Infrastructure Identification, Prioritization, and Protection, Homeland Security Presidential Directive 7 [HSPD-7]* and *National Preparedness, Homeland Security Presidential Directive 8 [HSPD-8].*

In FY 2005 EA will support core program activities to accomplish responsibilities in energy assurance, critical infrastructure protection, and energy emergencies. Core activities will include preparing for and responding to energy emergencies, assessing critical assets, supporting state and local governments in their energy assurance efforts, coordinating with the private sector, performing policy and data analysis, and conducting technology R&D.

SIGNIFICANT FUNDING CHANGES – FY 2004 to FY 2005 Request ($ in millions)

Energy Security and Assurance (FY 2004 $19.9; FY 2005 $6.1) ..... -$13.8
The reduction in FY 2005 reflects the completion of $16.5 million in congressionally directed activities. However, the FY 2005 request is $1.9 million or 45 percent more than the FY 2004 request to implement Homeland Security Presidential Directives 7 and 8.

Program Direction (FY 2004 $2.5; FY 2005 $4.5) ..... +$2.0
Funding will provide the federal staffing resources to fully staff the identified program activities.

Section 5. Other Mission Supporting Organizations

Security

(discretionary dollars in thousands)

	FY 2003 Comparable Approp	FY 2004 Comparable Approp	FY 2005 Congress Request	FY 2005 vs. FY 2004	
Security					
Nuclear safeguards and security	144,512	149,805	143,197	-6,608	-4.4%
Security investigations	45,579	54,234	53,554	-680	-1.3%
Program direction	51,742	52,187	58,350	+6,163	+11.8%
Subtotal, Security	241,833	256,226	255,101	-1,125	-0.4%
Use of prior year balances and other adjustments	-11,887	-5,695	——	+5,695	+100.0%
Total, Security	**229,946**	**250,531**	**255,101**	**+4,570**	**+1.8%**

PROGRAM DESCRIPTION

The **Security** program develops policies and provides programmatic direction governing the protection of national security and other assets entrusted to DOE. This program also provides safeguards and security training and field assistance to ensure the efficient and effective implementation of Departmental security policy.

The **Nuclear Safeguards and Security** program provides policy, programmatic direction, and training associated with DOE's nuclear weapons, nuclear materials, classified information and facilities, and security at DOE headquarters. Funding is also provided to the DOE operations centers, which provide support to headquarters emergency response operations including maintenance and operation of DOE's Emergency Communications Network. The **Security Investigations** program provides funding for background investigations for all DOE federal and contractor personnel who require access authorizations for classified information or access to Special Nuclear Materials due to the nature of their official duties. The Program Direction account provides for salaries and benefits, travel, support services, and other related expenses associated with overall management, direction, and administration.

PROGRAM HIGHLIGHTS

The FY 2005 request provides $255.1 million to maintain security activities in the three major program activities. The FY 2005 budget provides for continued security improvements at DOE headquarters, funding for operating support including Nuclear Materials Accountability Systems, security investigations, and continued support for Continuity of Operations and Continuity of government activities.

SIGNIFICANT FUNDING CHANGES – FY 2004 to 2005 Request ($ in millions)

Nuclear Safeguards and Security (FY 2004 $149.8; FY 2005 $143.2) ..... -$6.6
Decrease in funding due to a reevaluation of mission related priorities and reduction of funding in the Nonproliferation and National Security Institute (NNSI) and Technology Systems Development program.

Security Investigations (FY 2004 $54.2; FY 2005 $53.6) ..... -$0.6
Decrease in funding reflects savings resulting from revised background investigation requirements.

Program Direction (FY 2004 $52.2; FY 2005 $58.4) ..... +$6.2
Funding will support an increase in salaries and benefits to fund cost-of-living increases, promotions, within-grade increases, lump sum payments, and overtime for existing staff.

Section 5. Other Mission Supporting Organizations

Independent Oversight and Performance Assurance

(discretionary dollars in thousands)

	FY 2003 Comparable Approp	FY 2004 Comparable Approp	FY 2005 Congress Request	FY 2005 vs. FY 2004	
Independent Oversight and Performance Assurance					
Independent oversight and performance assurance.....	24,420	23,917	24,669	+752	+3.1%
Use of prior year balances and other adjustments.....	-63	-80	——	+80	+100.0%
Total, Independent Oversight and Perf. Assurance.....	**24,357**	**23,837**	**24,669**	**+832**	**+3.5%**

PROGRAM DESCRIPTION

The **Office of Independent Oversight and Performance Assurance** (OA) performs independent evaluations of DOE's nuclear safeguards and security, environment, safety, and health, cyber security, and emergency management activities. The program plays a key role in supporting DOE's national security mission by providing program managers with tools and assessments needed to preserve and effectively protect critical national security interests, which include the safeguarding of nuclear weapons, materials, facilities, information assets, and the protection of the environment, as well as safety and health of workers and the public. OA also provides administrative support to the Departmental representative to the Defense Nuclear Facilities Safety Board.

PROGRAM HIGHLIGHTS

The FY 2005 request provides $24.7 million to continue independent evaluations of the Department's nuclear safeguards and security, environment, safety and health, cyber security, and emergency management activities. The requested funding is $0.8 million above the FY 2004 comparable appropriation, and is primarily for personnel and analytical support.

SIGNIFICANT FUNDING CHANGES – FY 2004 to 2005 Request ($ in millions)

Independent Oversight & Performance Assessment (FY 2004 $22.5; FY 2005 $23.1)..... +$0.6
Increases for personnel costs and other related expenses related for space used, computer equipment, and supplies.

Departmental Representative (FY 2004 $1.5; FY 2005 $1.6) ..... +$0.1
Increase for personnel costs and support services for DNFSB special analysis related to open compliance issues.

Section 5. Other Mission Supporting Organizations

Environment, Safety and Health

(discretionary dollars in thousands)

	FY 2003 Comparable Approp	FY 2004 Comparable Approp	FY 2005 Congress Request	FY 2005 vs. FY 2004	
Office Of Environment, Safety And Health					
Energy Supply					
Office of environment, safety and health (non-defense)	6,746	6,867	10,000	+3,133	+45.6%
Program direction	15,573	15,697	20,474	+4,777	+30.4%
Total, Energy Supply	22,319	22,564	30,474	+7,910	+35.1%
Other defense activities					
Environment, safety and health (defense)	90,304	102,013	99,105	-2,908	-2.9%
Program direction	20,077	17,853	20,414	+2,561	+14.3%
Subtotal, Other defense activities	110,381	119,866	119,519	-347	-0.3%
Use of prior year balances	-1,287	-500	-15,000	-14,500	-2,900.0%
Total, Other defense activities	109,094	119,366	104,519	-14,847	-12.4%
Total, Environment, Safety & Health	**131,413**	**141,930**	**134,993**	**-6,937**	**-4.9%**

The **Office of Environment, Safety and Health** is funded in two accounts within the Energy and Water Development Appropriation. Defense-related activities are funded in the Other Defense account and include Corporate Safety Programs, Health Programs, the Radiation Effects Research Foundation (RERF), the Energy Employees Occupational Illness Compensation Program, and Program Direction. Non-defense activities are funded in the Energy Supply account and support Policy, Standards and Guidance, DOE-Wide Environment, Safety, and Health, and Program Direction.

PROGRAM DESCRIPTION

The **Environment, Safety and Health** (ES&H) program provides environment, safety and health policy to ensure that work is conducted efficiently and in a manner that protects workers, the public and the environment. The ES&H program advises the Secretary of Energy on the status of the health and safety of DOE workers, the public, and the environment near DOE facilities. By statute, DOE assumes direct regulatory authority for safety and health, and the ES&H program plays a critical role to conduct independent reviews of environment, safety, and health performance and provide technical services, resources, and information sharing. DOE is externally regulated for compliance with applicable environmental laws administered by other federal agencies. The ES&H program serves as DOE's advocate to assure that agency interests are reflected in the formulation of environmental regulations and standards. The ES&H program develops environment, safety, and health directives and policies, performs Price-Anderson enforcement, and funds radiation health studies. The ES&H program also assists workers to obtain information and medical records when applying for benefits under the **Energy Employees Occupational Illness Compensation Program Act**.

PROGRAM HIGHLIGHTS

Policy, Standards and Guidance activities will continue to develop and update current DOE environment, safety and health policies, standards and guidance, including adopting non-government consensus standards that are appropriate for DOE work. Regulatory liaison activities with other government agencies to support DOE's interest will also continue.

DOE-Wide ES&H Programs improve worker and nuclear facilities safety and protect the public and the environment through the efficient management of several DOE-wide programs.

Corporate Safety Programs serve a crosscutting safety function for the Department and its stakeholders in assessing, facilitating, achieving and assuring excellence and continuous improvement in safety management and performance in the conduct of DOE's missions and activities.

The **Health Programs** will continue to establish and enhance the scientific bases for standards that provide levels of protection appropriate to the risk of hazards present at DOE sites. ES&H health programs include Occupational Health, Public Health, Epidemiologic Studies and International Studies. Health programs also include a program to provide special medical care for a limited group of radiation-exposed individuals in the Marshall Islands.

The **Energy Employees Occupational Illness Compensation Program** (established by the Energy Employees Occupational Illness Compensation Act of 2000) established a process to assist employees of DOE contractors and their survivors with their application for state workers compensation benefits.

SIGNIFICANT FUNDING CHANGES – FY 2004 to 2005 REQUEST ($ in millions)

Energy Supply

Policy, Standards and Guidance (FY 2004 $1.8; FY 2005 $4.2) ..... +$2.4
Increase in funding in this account supports the development of guidance for implementation of the Occupational Safety and Health Rule and other guidance, expenditures for the increased Institute for Nuclear Power Operations fee and the transfer in FY 2005 of a major portion of the Technical Standards Program.

DOE-Wide ES&H Programs (FY 2004 $5.0; FY 2005 $5.8) ..... +$0.8
Increase in the funding in this account is to support enforcement of the new Occupational Safety and Health Rule.

Program Direction – Energy Supply (FY 2004 $15.7; FY 2005 $20.5)..... +$4.8
Increase for salaries and benefits, travel and other related expenses is due to cost-of-living adjustment, locality pay, within-grade increases, lump-sum payments and awards.

Other Defense Activities

Corporate Safety Programs (FY 2004 $9.0; FY 2005 $10.8)..... +$1.8
Increase in funding for this program is related to the expanded corporate quality assurance responsibilities in the Office of Environment, Safety and Health.

Health Programs (FY 2004 $67.3; FY 2005 $45.2)..... -$22.1
RERF epidemiologic studies and medical surveillance program provides for the life span study of the Hiroshima and Nagasaki exposed population. As this study approaches its conclusion, future U.S. involvement in RERF will be evaluated.

Energy Employees Occupational Illness Compensation Program (FY 2004 $25.6; FY 2005 $43.0)..... +$17.4
Increase requested to expedite processing of applications for assistance with state workers compensation.

Program Direction – Other Defense (FY 2004 $17.9; FY 2005 $20.4) ..... +$2.5
Increase for salaries and benefits, travel and other related expenses is due to cost-of-living adjustment, locality pay, within-grade increases, lump-sum payments and awards.

Section 5. Other Mission Supporting Organizations

Future Liabilities

(discretionary dollars in thousands)

	FY 2003 Comparable Approp	FY 2004 Comparable Approp	FY 2005 Congress Request	FY 2005 vs. FY 2004	
Office Of Future Liabilities					
Energy supply					
Future liabilities	——	——	3,000	+3,000	n/a
Other defense activities					
Future liabilities	——	——	5,000	+5,000	n/a
Total, Office Of Future Liabilities	**——**	**——**	**8,000**	**+8,000**	**n/a**

PROGRAM DESCRIPTION

A new **Office of Future Liabilities** is proposed in FY2005 to fund and manage environmental liabilities not assigned to the Office of Environmental Management or other organizations within the Department. In FY 2005, funds are requested for this new activity within the Energy Supply and Other Defense Activities accounts.

Within Energy Supply, funds are requested for "Greater-Than-Class-C" waste activities. Beginning in FY 2005, the National Nuclear Security Administration's Defense Nuclear Nonproliferation program will assume responsibility for the collection and storage of sealed source wastes, which is being transferred from the Environmental Management program. The new Office of Future Liabilities will assume responsibility for establishing a long-term disposition path of this material, which is currently not being addressed elsewhere in the Department.

Within Other Defense Activities, funds are requested to fund and manage environmental liabilities including the decontamination and decommissioning of surplus facilities, cleanup of contaminated media, and disposition of excess nuclear and hazardous materials that continue to be generated at sites with still-active DOE missions. These needs are expected to grow substantially in the near-term due to the backlog of environmental liabilities at active DOE sites.

SIGNIFICANT FUNDING CHANGES – FY 2004 to 2005 Request ($ in millions)

Energy Supply

Greater-Than-Class-C Waste Disposition (FY 2004 $0; FY 2005 $3.0)..... +$3.0
FY 2005 request supports completion of the ongoing preparation of the Environmental Impact Statement for disposition of Greater-Than-Class-C waste and development of a program plan for the new program to carry out its responsibilities.

Other Defense Activities

Facility Decontamination and Decommissioning (FY 2004 $0; FY 2005 $4.0)..... +$4.0
Supports D&D of excess facilities at Brookhaven National Laboratory, NY, and Y-12 Plant, TN, activities that were not previously supported in the Department.

Program Direction (FY 2004 $0; FY 2005 $1.0)..... +$1.0
Provides for four federal FTEs and other administrative and technical support to establish the new office.

Section 5. Other Mission Supporting Organizations

Hearings and Appeals

(discretionary dollars in thousands)

	FY 2003 Comparable Approp	FY 2004 Comparable Approp	FY 2005 Congress Request	FY 2005 vs. FY 2004	
Office Of Hearings And Appeals					
Economic Regulation					
Office of hearings and appeals	1,477	1,034	——	-1,034	-100.0%
Other defense activities					
Office of hearings and appeals	2,914	3,775	4,318	+543	+14.4%
Total, Hearings And Appeals	**4,391**	**4,809**	**4,318**	**-491**	**-10.2%**

PROGRAM DESCRIPTION

Previously, funding for the **Office of Hearings and Appeals** has been requested in both the Energy and Water Development, and Interior and Related Agencies appropriations. Adjudicatory functions are funded in the Other Defense Activities account within the Energy and Water Development Appropriation. Economic Regulation activities associated with previous activities to equitably terminate the regulatory program implementing the Emergency Petroleum Allocation Act of 1973 were funded within the Interior and Related Agencies appropriation. In FY 2005, the Department will no longer request funds for the Economic Regulation function within the Interior Appropriation.

Other Defense Activities

The Office of Hearings and Appeals program continues to be responsible for all DOE adjudicative processes except those administered by the Federal Energy Regulatory Commission. The program's jurisdiction includes Freedom of Information and Privacy Act Appeals, evidentiary hearings to determine an employee's eligibility for a security clearance, appeals and initial agency decisions on whistle blower complaints, and requests for exception from DOE regulations and orders, such as reporting requirements to DOE elements. This program is also responsible for resolving appeals under the Energy Employees Occupational Illness Compensation Program Act of 2000.

Economic Regulation

All programs stemming from the Emergency Petroleum Allocation Act of 1973 have come to an end. The largest on-going refund proceeding is the crude oil proceeding in which the Hearings and Appeals program distributed funds recovered by DOE to consumer claimants, including individuals, farmers, businesses, hospitals, school districts, and cooperatives.

PROGRAM HIGHLIGHTS

Other Defense Activities

The FY 2005 budget of $4.3 million for Other Defense Activities programs, is a 14-percent increase over FY 2004 ($3.8 million). The increase is requested to investigate and adjudicate whistle-blower complaints, security clearances, and to consider appeals of other DOE actions. These include determinations regarding the Freedom of Information Act, the Privacy Act, and the Energy Employees Occupational Illness Compensation Program Act of 2000.

Federal FTEs in the Hearings and Appeals program will be increased from 21 in FY 2004 to 23 in FY 2005.

Economic Regulation

All economic regulatory activities funded by Interior and Related Agencies within the Hearings and Appeals program were phased out in FY 2004. Remaining funds disbursement activities will be executed by DOE's Office of Management, Budget and Evaluation.

SIGNIFICANT FUNDING CHANGES – FY 2004 to 2005 Request ($ in millions)

Other Defense Activities

Hearings and Appeals (FY 2004 $3.8; FY 2005 $4.3).....+$0.5
Increase reflects 2 additional FTEs in FY 2005 and the full effect of the FY 2004 pay raise and the partial pay raise effect of the 2005 pay raise.

Economic Regulation

Hearings and Appeals – Economic Regulation (FY 2004 $1.0; FY 2005 $0).....-$1.0
No funding was requested in FY 2005 due to the phase-out of the remaining oil overcharge activities during FY 2004.

SECTION 6. FEDERAL ENERGY REGULATORY COMMISSION

(discretionary dollars in thousands)

	FY 2003 Comparable Approp	FY 2004 Comparable Approp	FY 2005 Congress Request	FY 2005 vs. FY 2004	
Federal Energy Regulatory Commission					
Federal energy regulatory commission	192,000	204,400	210,000	+5,600	+2.7%
FERC revenues	-192,000	-204,400	-210,000	-5,600	-2.7%
Total, Federal Energy Regulatory Commission	—	—	—	—	—

PROGRAM DESCRIPTION

The **Federal Energy Regulatory Commission** (FERC) regulates key interstate aspects of the electric power, natural gas, oil pipeline, and hydroelectric industries. It ensures that the rates, terms, and conditions of service for segments of the electric and natural gas and oil pipeline industries are just and reasonable. It authorizes the construction of natural gas pipeline facilities and ensures that hydropower licensing, administration, and safety actions are consistent with the public interest.

The FERC is fostering sustained, competitive energy markets to realize dependable, affordable energy availability. To accomplish this, the FERC is promoting a secure, high-quality, environmentally responsible energy infrastructure through consistent policies. This includes facilitating rapid development of appropriate infrastructure to ensure sufficient energy supplies, providing timely cost recovery to infrastructure investors, giving full and fair consideration to environmental and community impacts of energy projects, and promoting measures to improve the security and safety of the energy infrastructure. The FERC is also fostering nationwide competitive energy markets as a substitute for traditional regulation. This includes encouraging further development of competitive market institutions across the entire country and establishing balanced, self-enforcing market rules. Efforts are being made to protect customers and market participants through vigilant and fair oversight of energy markets. This includes assuring pro-competitive market structures and operations and remedying individual market participant behavior as needed to ensure just and reasonable market outcomes.

PROGRAM HIGHLIGHTS

Market crises can erupt quickly, especially in electricity, and the FERC is acting to provide a much more stable long-term platform for electricity markets. Two initiatives are especially important: a proposed Wholesale Power Market Platform and the Office of Market Oversight and Investigations. The proposed Wholesale Power Market Platform emphasizes FERC's commitment to customer-based, competitive wholesale power markets, while underscoring an increasingly flexible approach to regional needs.

SIGNIFICANT FUNDING CHANGES – FY 2004 to FY 2005 Request ($ in millions)

FERC (FY 2004 $204.4; FY 2005 $210.0)..... +$5.6
FY 2005 request funds 1,280 FTEs. FERC will recover the full cost of its operations through a system of annual charges and fees, resulting in a net appropriation of $0 for FY 2005.