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Department of Energy
FY 2006 Congressional Budget Request

Budget Highlights

February 2005

Office of Management, Budget and Evaluation/CFO

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Table of Contents

INTRODUCTION

INVESTING IN A SECURE FUTURE

President Bush, at the start of his first term, saw the need and charted a course to create a more strategically managed, performance-driven federal government to better serve America in the new century. The Department of Energy's (DOE) FY 2006 Budget reflects the many advancements made during the past four years to align the budget with performance goals and continues the progress of a results-driven DOE to strengthen overall management accountability.

The improvements after four years are considerable and now DOE ranks among the top federal agencies in meeting the challenges of the President's Management Agenda, including budget and performance integration. The FY 2006 Budget, totaling $23.4 billion, is an investment formulated to deliver results in four strategic areas: Defense, Energy, Science and the Environment. Measures of program effectiveness and more efficient performance drove the FY 2006 funding decisions, consistent with achieving the goals set forth in the Department's Strategic Plan.

The rewards of this successful effort are also seen in the bottom line. At $23.4 billion, the Department's FY 2006 Budget is $475 million below the FY 2005 appropriation. This shows DOE's commitment to results-driven performance. Prudent fiscal responsibility and strengthened management accountability are producing results for the American taxpayer and are empowering DOE to meet critical Presidential commitments. This budget addresses emerging requirements and maintains schedules through improved management practices and better allocation of resources.

This budget is a balanced and responsible portfolio that is an important investment for U.S. national and energy security. The Department's FY 2006 Budget:

- Meets the requirements of the Nuclear Posture Review;
- Proposes an aggressive nuclear nonproliferation agenda;
- Secures and safeguards nuclear materials;
- Continues progress on the Yucca Mountain nuclear waste repository;
- Maintains the accelerated environmental cleanup program;
- Sustains important scientific investments; and
- Capitalizes on emerging opportunities in nuclear, fossil and renewable energy and energy efficiency.

Our Strategic Vision

The Department of Energy organized its management and program structure to support the strategic goals in Defense, Energy, Science, and the Environment. A fifth organizational element, Corporate Management, directly supports DOE program offices through the delivery of shared services. The goals in each of these areas are driven by performance objectives and reportable measures throughout all levels of program activity. Performance achievement is reviewed routinely. Each program is held accountable for results. This performance orientation is delivering results that make a big difference in the quality and safety of American lives. The Department's four programmatic strategic objectives are:

Defense

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

The Defense goal is supported by the National Nuclear Security Administration (NNSA). The following NNSA functions directly support national defense:

- Stockpile stewardship (nuclear weapons activities)
- Defense nuclear nonproliferation
- Naval reactors

The FY 2006 Budget request for Defense is $9.4 billion. The return on investment to the American taxpayers is wide ranging. In FY 2004, the United States signed five major international agreements to prevent the trafficking of nuclear material. The agreements are part of DOE's Megaports Initiative aimed at stopping illicit shipments of nuclear and other radioactive material. The initiative uses specialized radiation detection technology developed by the Department's national laboratories. In FY 2006, efforts continue to extend the utility of three weapon types in the nation's nuclear weapon stockpile, and investments have been made across the U.S. to recapitalize the nation's national security infrastructure.

Energy

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

The Department promotes a balanced and diverse energy portfolio of renewable energy, fossil energy and nuclear energy programs, as well as programs that support energy efficiency and related activities to maintain a reliable, robust electricity supply. In FY 2006, $2.6 billion will be invested to meet the Energy goal. Research funded by the Department has produced some significant advances. For example, the high-volume cost of automotive fuel cells has been reduced from $275 per kilowatt in 2002 to $200 per kilowatt in 2004 using innovative processes developed by the national laboratories and fuel cell developers. (Achieving a cost of $50 per kilowatt is one technological advance required to help make fuel cell vehicles cost competitive with today's internal engine vehicles.) To support our energy goals, the FY 2006 Budget continues major initiatives such as the President's Hydrogen Fuel Initiative, as well as the research and development associated with the Advanced Fuel Cycle Initiative and carbon sequestration.

Science

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

The Budget request of $3.5 billion in FY 2006 for the Office of Science supports the third pillar of the Department's mission: Science. The funding focuses on continued operation of world-class, state-of-the-art scientific facilities and the design and construction of new science facilities. The investment in the Department's scientific research has delivered results. The Department received 70 Nobel Laureate awards since 1954. Recently, Science successfully decoded the complex sequencing of the human genome. In FY 2003, a researcher at the Argonne National Laboratory shared the honors of receiving a Nobel Prize in Physics for pioneering contributions to the theory of superconductors that are used for magnetic resonance imaging (MRI). The Science program represents an investment in our nation's future. Science provides support for key scientific disciplines, critical scientific tools, and the scientific workforce of today and tomorrow. The support contributes toward the progress of a high-tech economy. The Science program at DOE will continue to identify emerging opportunities and push the limits of today's technology to meet strategic goals. In that vein, the FY 2006 Budget continues major programs such as nanoscale science research, Advanced Scientific Computing Research, and the ITER*.

* International Thermonuclear Experimental Reactor

Environment

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

The $7.2 billion FY 2006 Budget request for Environment funds activities within the Offices of Environmental Management, Civilian Radioactive Waste Management and Legacy Management. The Department is well on its way to meeting the following goals:

- The closure of Rocky Flats in FY 2006. Aggressive plans of action with key milestones in 2006, 2012 and 2035 complete the cleanup of contaminated DOE sites.
- The maturation of the Legacy Management Office to conduct long-term surveillance and maintenance of remediated sites and to oversee continuity of pension and benefits for former DOE contract workers once cleanup is complete.
- Completion of the license application process and construction of the nuclear waste repository.

The annual investment for these activities continues to strengthen the visibility and accountability of DOE's cleanup commitments and long-term stewardship responsibilities.

Corporate Management

Corporate Management includes the offices that directly support the mission of the Department including development of Departmental policies, and the provision of legal, financial and administrative services. These offices guide the implementation of the President's Management Agenda reforms throughout the Department, including:

- Human Capital Management
- Competitive Sourcing
- Financial Performance
- E-Government
- Budget and Performance Integration
- Real Property Asset Management

The FY 2006 Budget requests $586 million for activities related to the mission support services of Corporate Management.

ENSURING OUR NATIONAL SECURITY

The Department of Energy maintains the safety, reliability and effectiveness of our nation's nuclear weapons stockpile and prevents the spread of nuclear materials, information and technology, and weapons of mass destruction throughout the world. DOE requests $9.4 billion in FY 2006 for the **National Nuclear Security Administration (NNSA)**. NNSA is the national focal point for national security activities and will work in partnership with the Department of Defense and the Department of Homeland Security.

Today, the nation's nuclear deterrent remains a critical component of our defense strategy. Since the establishment of a moratorium on underground nuclear testing in 1993, DOE maintained the safety, security, reliability and effectiveness of the nuclear weapons stockpile through a science-based stockpile stewardship program. This program guarantees continuing operational readiness of the stockpile through science, technology, and engineering by identifying potential problems in the stockpile and applying solutions to extend the life of the aging warheads.

The FY 2006 Budget request of $6.6 billion for **Weapons Activities** funds programs supported in the Nuclear Posture Review:

- **Directed Stockpile Work** ($1.4 billion) supports the Department of Defense nuclear weapons requirements by maintaining and refurbishing warheads to ensure their safety, reliability and performance. The specific activities include research, development and production associated with weapons maintenance, life extension and certification of continued reliability. NNSA will continue to refurbish warheads for three weapons that entered service in the 1970's and 1980's. A robust refurbishment program is the only way to maintain the nuclear deterrent with a high degree of confidence.

- **Facility operations and infrastructure recapitalization** programs ($2.1 billion) provide for the operation of existing facilities, remediation and disposition of excess facilities, and construction of new facilities to enable NNSA to move toward a more supportable and responsive infrastructure.

- **Security programs** ($1.0 billion) protect weapons, materials, information and employees, and provide emergency response assets, including first-responder teams, in the event of a nuclear emergency. Funding for these programs increased significantly since FY 2001 to permit implementation of upgrades and improvements to our facilities resulting from recent revisions to the design basis threat for the DOE complex.

- **Science and engineering programs** ($2.1 billion) develop and maintain critical capabilities needed to verify the safety, reliability and performance of the nuclear weapons stockpile into the future. This work will remain critical even as the United States draws down the number of operationally deployed warheads to between 1,700 and 2,200 by the end of 2012. Work in this area encompasses basic research on science and technologies needed for stockpile stewardship in the Science, Engineering, and Readiness Campaigns; applied research in high density physics through the Inertial Confinement Fusion Ignition and High Yield campaign; world-leading advances in computation, modeling and simulation hardware and codes through the Advanced Simulation and Computing Campaign; and reestablishment of the ability to manufacture and certify a key nuclear weapon component in the Pit Manufacturing and Certification Campaign.

The FY 2006 NNSA budget reflects the transfer from the Office of Environmental Management (EM) of funding for legacy cleanup and waste management activities at most NNSA sites. In FY 2006, NNSA will execute the **Environmental Projects and Operations Program** at the total requested level of $222.3 million (includes $47 million for newly generated waste at Lawrence Livermore National Laboratory and Y-12 National Security Complex), to manage the environmental restoration, legacy waste disposition, and decontamination and decommissioning activities at NNSA sites (Kansas City Plant, Lawrence Livermore National Laboratory, Nevada Test Site, Sandia National Laboratories, Pantex Plant and the Separations Process Research Unit in New York). The Department plans to transfer environmental activities at the Los Alamos National Laboratory (LANL) and the Y-12 National Security Complex from EM to NNSA in future years, with the transfer of LANL expected in FY 2007.

The convergence of heightened terrorist activities and the increasing ease of moving materials, technology and information across borders have made the potential of terrorism involving weapons of mass destruction (WMD) the most serious threat facing the nation. The FY 2006 Budget request for **Defense Nuclear Nonproliferation** of $1.6 billion represents a historic effort to protect the homeland from this threat. The Administration targeted both the demand and supply side of the nuclear terrorism challenge with aggressive nonproliferation programs at DOE that achieved a number of major successes in recent years. Through the Global Partnership with the G-8 nations, the United States is dedicating the necessary resources to combat this complex threat, committing to provide half of the $20 billion for this effort, including $1 billion in FY 2006 in programs through NNSA, Department of Defense and the Department of State.

Over the last four years the United States, in collaboration with the international community through joint nonproliferation programs, prevented the spread of weapons of mass destruction. For example, DOE accelerated the securing of 600 metric tons of weapons-usable material at 51 sites in Russia and the Newly Independent States; upgraded 13 nuclear facilities in the Newly Independent States in the Baltic region to meet international physical protection guidelines; and established the Megaports Initiative that deploys radiation detection equipment at key overseas ports to pre-screen U.S.-bound cargo containers for nuclear or radioactive materials.

- Within the NNSA's Nuclear Nonproliferation programs, $343.4 million is included to support the **International Nuclear Materials Protection and Cooperation** program to secure nuclear materials in the former Soviet Union. By the end of 2006, NNSA will have supported completion of security upgrades at nearly 80 percent of the sites covered by the current bilateral agreement to secure nuclear materials and nuclear warheads in Russia and the Newly Independent States.

- The **Megaports** initiative, another part of the **International Nuclear Materials Protection and Cooperation** program, is requested at $74 million to continue to deploy radiation detection equipment at key overseas ports to pre-screen U.S. bound cargo containers for nuclear or radioactive materials.

- At $98 million, the **Global Threat Reduction Initiative (GTRI**), announced in 2004, brings together key activities that support the goal to identify, secure, remove and facilitate the disposition of high-risk, vulnerable nuclear and radiological materials and equipment around the world. Our nation began to reap the benefits of this initiative with the successful completion of two shipments of Russian-origin fresh highly-enriched uranium nuclear fuel to Russia from foreign research reactors.

- The **Nonproliferation and Verification Research and Development** program, at $272.2 million, will fund in FY 2006 activities to leverage the technical expertise and experience of the National Laboratories to conduct applied research, development, testing and evaluation to produce state-of-the-art technologies to detect and deter nuclear proliferation. This funding provides a boost to basic and applied research in radiation detection that is critical to significantly reduce detector size while increasing sensitivity.

- Funding for the **Elimination of Weapons Grade Plutonium Production (EWGPP)** Program in Russia is requested at $132 million in FY 2006. This program further reduces the threat of nuclear terrorism by shutting down and replacing by 2011, with fossil energy plants, the three remaining Soviet-era reactors (two plants in Seversk and one in Zheleznogorsk). This program eliminates the production of 1.2 metric tons annually of weapons-grade plutonium.

- The NNSA is requesting $653 million to support the **Fissile Materials Disposition** program to dispose of surplus weapons-usable plutonium under an agreement between the United States and Russia. Both countries have agreed to dispose of 34 metric tons of plutonium by converting it to a mixed oxide fuel and burning it in electricity-generating nuclear reactors.

The **Naval Reactors (NR)** program provides safe and reliable nuclear reactors to power the Navy's warships. This program is responsible for all naval nuclear propulsion work, beginning with technology development, through reactor operations and, ultimately, to reactor plant disposal. The $786 million request ensures that NR continues to provide the U.S. Navy with nuclear propulsion plants that are capable of responding to the challenges of the 21st century security environment. Within that amount, $69 million continues work on the **Transformational Technology Core**, which delivers a significant energy increase to future submarines. In addition, the FY 2006 funding will support on-going work on the new high-energy reactor design for the next-generation aircraft carrier, the CVN 21.

In keeping with the President's Management Agenda goal of budget and performance integration, NNSA evaluates its financial and performance information using a Planning, Programming, Budgeting and Evaluation (PPBE) process that was implemented simultaneously with the standup of the new NNSA organization established by Title 32 of the National Defense Authorization Act of 2000. Using the PPBE process, the NNSA fully integrates program and resource information throughout the management processes and cascades these linkages throughout the organization. This is supported by the full range of management processes, contracting, funds control and accounting documentation.

To ensure integration of budget and performance, all NNSA programs make use of performance targets to track progress against key milestones and to distribute funds appropriately and effectively. For example, in the Science Campaign, the NNSA has a goal to drive down the cost of obtaining plutonium experimental data that is supported by annual performance targets. As a result, the NNSA shifted some full-up hydrotesting (at $1-2 million per test) to focused physics experiments (at $5-100 thousand per test) to better provide data for weapon certification issues. The NNSA also reduced the number of subcritical experiments (at $5-30 million each) in favor of JASPER gas gun experiments (at $100-200 thousand each).

The Elimination of Weapons Grade Plutonium Production (EWGPP) program incorporated PART feedback into the FY 2006 Budget process decisions and took steps to continue to improve performance. During the process it was noted that the program's flat outyear funding profile was not tied to annual and long-term performance goals. As a result, in the FY 2006 - 2010 PPBE process, NNSA realigned the EWGPP outyear funding resources to support a Severisk 2008 project completion with a funding profile consistent with a typical construction project bell-curve.

PROMOTING ECONOMIC PROSPERITY THROUGH CLEAN, DEPENDABLE ENERGY SUPPLY

During his first six months in office, the President proposed the first balanced and comprehensive energy plan in a generation – the National Energy Policy (NEP). Over the past four years, the President and his Administration have completed implementation of nearly all of the 106 NEP recommendations that could be addressed without legislation, such as increasing electricity reliability research and development to help prevent electricity disruptions and filling the Strategic Petroleum Reserve to 700 million barrels.

The President's FY 2006 Budget provides significant funding for NEP recommendations such as the research and development of clean energy resources, and for energy tax incentives for alternative and renewable fuels, energy conservation and efficiency, and emissions-free energy sources.

President Bush will continue to call on Congress to pass energy legislation necessary to advance several of the most significant recommendations, including those to modernize and improve our electricity grid for the future, reduce our reliance on foreign sources of energy, protect the environment and increase conservation, improve energy efficiency, and expand the use of new technologies and renewable energy sources.

The FY 2006 Budget directs resources to allow the Department of Energy to meet the President's goal of promoting economic prosperity through clean, sustainable energy. Funding is included to expand our nation's energy supply, assess and address our nation's energy infrastructure vulnerabilities, develop a hydrogen economy with affordable zero emission fuel cell vehicles; develop carbon sequestration and advanced coal technologies to ensure the United States' 250-year coal reserves can be used with reduced emissions from coal-fueled electricity generation plants; and continue advanced nuclear technology research and the potential for fusion energy through the ITER project.

The FY 2006 Budget directs a development of a diverse, sustainable energy portfolio that includes investments in hydrogen that offer an ultra clean and secure energy option for America. Hydrogen is

an attractive energy choice for the future because it can be produced from domestic energy sources and produces virtually no pollution or greenhouse gases. The Department's Office of Energy Efficiency and Renewable Energy is spearheading the effort to implement the **President's Hydrogen Fuel Initiative** that will reduce America's growing dependence on foreign oil. The Administration's multi-agency hydrogen effort in FY 2006, with DOE as the lead agency, is $260 million and includes $183 million for DOE's Energy Efficiency and Renewable Energy program, $20 million for DOE's Nuclear Energy program, $22 million for DOE's Fossil Energy program, and $33 million for DOE's Science program. The FY 2006 Budget will support the acceleration of hydrogen development in production and delivery research and development and systems analysis to meet the 2010 technical targets identified in the DOE Hydrogen Posture Plan and Multi-year Research, Development and Demonstration Plan.

In addition to developing hydrogen technology, the Energy Efficiency and Renewable Energy program will continue to emphasize R&D to improve energy efficiency and reliability in buildings, transportation, and industry ($576 million), and to reduce the cost of renewable and related energy technologies such as wind, solar, geothermal, and biomass ($354 million).

The Department of Energy, in a continued effort to strategically manage all programs and implement performance-based budgeting, will close the **Hydropower Program** in FY 2006 and transfer the results of program research, development and demonstration to industry.
This Administration continually demonstrates its strong commitment to assist citizens in need of help. Since 2001, the President has achieved a cumulative increase of nearly $300 million for the **Weatherization Assistance Program**, helping over 117,000 more low-income families than would have otherwise received assistance. In the FY 2006 Budget, $230 million is requested to weatherize more than 92,000 homes in 2006 and leverage resources from other state, local and private sector entities sufficient to weatherize approximately 100,000 additional homes. This method of implementing conservation through proven energy savings measures is yet another approach to reduce reliance on energy imports.

Nuclear power, which generates 20 percent of the electricity in the United States, is a significant component of a balanced, clean energy portfolio. It is relatively inexpensive, safe, clean and versatile and contributes to reducing the nation's reliance on foreign energy sources. The FY 2006 Budget seeks $510.8 million to expand the development of advanced nuclear energy technology and its contribution to the nation's energy portfolio. The budget includes $20 million to support the President's hydrogen fuel initiative. Through the **Nuclear Hydrogen** program, nuclear energy is harnessed to produce hydrogen at a cost competitive with other alternative fuels.

The Department is sharpening its pursuit in development of advance nuclear energy technologies by addressing the fundamental research and development issues necessary to establish the viability of next-generation nuclear energy systems concepts. The FY2006 Budget requests $45 million for the **Generation IV Nuclear Energy Systems Initiative** to expand research and development and 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.

The FY 2006 Budget brings us closer to the reality of constructing the next generation of nuclear power plants by 2010. With a request of $56 million, the **Nuclear Power 2010** program will be able to complete the early site permit (ESP) demonstration projects and focus on documenting and recommending future ESP applicants and preparing guidance for the construction and operating and license application preparation.

The Office of Nuclear Energy, Science and Technology also manages the **Advanced Fuel Cycle Initiative**. At a request of $70 million, this project complements the mission of the Nuclear Nonproliferation program through the development of new technologies that significantly reduce accumulated plutonium in civilian spent fuel, thus reducing the threat of nuclear proliferation. Moreover, this technology can be deployed to support the operation of current nuclear power plants to achieve a significant reduction in the amount of high-level radioactive waste requiring geologic

disposal. Because the *Advanced Fuel Cycle Initiative Ten Year Program Plan* proved successful, it warrants continued work. For example, in FY 2004, the program successfully demonstrated, on a laboratory scale, separation of americium and curium from spent fuel. The successful completion of the americium and curium work allows the program to confidently move forward in FY 2005 and FY 2006 with research on more complex spent fuel separations technologies. Also in FY 2004, the first Light Water Reactor oxide transmutation fuel samples and the transuranic-bearing metal and nitride fuel samples were successfully irradiated in the Advanced Test Reactor. Results of non-destructive examinations conducted to date indicate satisfactory behavior of the fuel pellets under irradiation. Building on these successes, the FY 2006 Budget requests an increase of $2.5 million to continue development of advanced fuel cycle technologies.

The more diverse our nation's energy supply becomes the more important it is to recognize that **fossil energy** is an essential component in our nation's future energy security. America has a 250-year supply of coal. Coal accounts for over half of domestic electricity generation. Just as coal helped make America the world's foremost industrial power over the past two centuries, it will continue to be an important part of our national economy in the 21st century and beyond. The key is technology. That is why this budget invests $491.5 million for **Fossil Energy Research and Development**, of which $286 million is for the **President's Coal Research Initiative (CRI)** to improve the efficiency and emissions free approaches being developed for coal burning power production. Included is $68 million for the **Clean Coal Power Initiative (CCPI),** of which $18 million continues the cost-shared **FutureGen** program, started in 2004, to establish the capability and feasibility of co-produced electricity and hydrogen from coal with essentially zero emissions. The FY 2006 Budget also includes an advance appropriation for FY 2007 of $257 million; from prior years' clean coal projects, to provide the federal share of FutureGen for several years. The budget significantly increases research and development in clean coal technologies that are integral to the FutureGen concept, such as Integrated Gasification Combined Cycle systems, carbon sequestration, and next-generation turbines. The $286 million for the CRI in FY 2006 continues the President's $2 billion commitment over 10 years to develop advanced coal-based power generation technologies with enhanced environmental and economic performance. This will be done at 75 percent of the cost of current technology. Lower capital costs produce near, mid and long-term economic and environmental public benefit.

The **Sequestration R&D** program is a key component of the President's Climate Change Technology Program. The FY 2006 Budget seeks $67.2 million for the Sequestration R&D program. The $21.8 million funding increase above the FY 2005 appropriation was planned for this stage of the program and will be used primarily to fund Phase II of the Regional Partnership Program. Confidence in the appropriateness of initiating Phase II is based on promising indications of Phase I progress (reported at the November 2004 Regional Partnership Review) in identifying CO2 sources and sinks. The funding increase ensures that the program will be able to test sequestration technologies and infrastructure concepts in the most important U.S. regions, which is key to successful widespread deployment of these technologies. The FY 2006 budget will also sustain core R&D to develop "tools" needed for successful carbon capture, storage and monitoring. The most promising approaches will be tested at larger scale, which is part of the overall Sequestration plan. The plan is proceeding based on meeting all of its FY 2004 performance measures, and thus considered to be "on track" for meeting its aggressive long-term goal.

The Department made a difficult choice and will close out the **Oil and Gas Technology** programs in FY 2006. The decision reflected strategic consideration by assessing the program's technical effectiveness and comparing it to other programs which have achieved more clearly demonstrated and substantial benefits. The focus in FY 2006 will be to conduct the orderly termination of the program. Funding in the FY 2006 Budget will be used to fulfill legal obligations incurred in the termination process.

The need to modernize our country's aging electric infrastructure is paramount to our national and energy security. This was underscored by the East Coast blackout of August 2003 which left 50 million Americans in the dark and cost the nation billions of dollars. Prior to the blackout, the

Administration recognized the vulnerabilities of the nation's electric grid system and to help address those concerns the Department of Energy created the **Office of Electric Transmission and Distribution** (OETD) in 2003. The FY 2006 Budget seeks $95.6 million to lead a national effort to modernize and expand our electric delivery system, ensuring reliable, robust electricity supply, economic security and national security. The requested amount is $23.0 million below last year's appropriation. In FY 2006, $71.8 million of the $95.6 million requested for transmission and distribution projects will enable the Department to research and develop advance technologies that will help modernize and expand our nation's electricity delivery system. Within the funding, $45.0 million is included to perform **High Temperature Superconductivity** R&D to bring efficiency and capacity advantages of superconductivity to the electric power applications; $5.5 million is to fund **GridWise** R&D activities that modernize the nation's electric infrastructure by employing real time controls (software) at the local level and $5.0 million is to fund **GridWorks** R&D activities that integrate advanced hardware technologies into platform systems necessary for control, communication, and information technologies.

FOSTERING CUTTING-EDGE SCIENCE

The most notable common thread that binds the Department of Energy programs together is the advanced science and technology they all require. Carbon sequestration, hydrogen, nuclear energy, and fusion power rely heavily on cutting-edge science. The Administration recognizes the opportunities, possibilities and benefits of harnessing the vast potential of science, and pushing forward with path-breaking new technologies. The new technologies allow us to use our current energy resources in cleaner, safer, more efficient ways; explore and develop new sources of energy; and continue to support ongoing research in basic science to open doors to discoveries and inventions that benefit our society. One recent example is the collaborative effort between the Department of Energy, universities, national laboratories, and the private sector to produce the very first artificial retina in the world.

These scientific and technological advances are made possible by the world-class scientists and interdisciplinary engineers throughout the Department's national laboratories and universities. Over the last 50 years society reaped the benefits of scientific breakthroughs by our national laboratories. This budget supports science's achievements for many years to come.

In the FY 2006 Budget, the Department included five year budget plans for the Office of Science. Expanding the budget horizon allows the Office of Science to evaluate its programs, activities, and progress toward meeting both near and mid-term goals in a multi-year context. This effort, like the PBBE process ongoing in the NNSA, assures budgeting discipline and allows for a more corporate approach to long term planning.

The Science FY 2006 Budget of $3.5 billion supports new activities, completes construction of the spallation neutron source, and increases support for best performers providing the broadest benefits to society. Funding of $1,146.0 million ($41.4 million above the FY 2005 appropriation) continues the **Basic Energy Sciences (BES)** program, of which $43.2 million will enable the operation of four **nanoscale science research centers** located at Oak Ridge, Argonne, Lawrence Berkeley, and Sandia/Los Alamos National Laboratories. These centers are designed to promote rapid advances in the various areas of nanoscale science and technology and are part of the DOE contribution to the Nanotechnology Initiative. The scientific possibilities and discoveries from these centers will be limitless. At $41.7 million, the FY 2006 Budget marks the completion of construction of the **Spallation Neutron Source (SNS)** at Oak Ridge National Laboratory and a total of $106.9 million is provided for SNS to begin operations in FY 2006. The SNS will provide the most intense pulsed neutron beams in the world for scientific research and industrial development. Neutron-scattering research has a lot to do with our lives. For example, things like jets; credit cards; pocket calculators; compact discs, computer disks, and magnetic recording tapes; shatter-proof windshields; adjustable seats; and satellite weather information for forecasts have all been improved by neutron-scattering research. Neutron research also helps researchers improve materials used in high-

temperature superconductors, powerful lightweight magnets, aluminum bridge decks, and stronger, lighter plastic products.

Within the **BES** program in FY 2006, research to realize the potential of a hydrogen economy in support of the **President's Hydrogen Fuel Initiative**, will be increased from $29.2 million to $32.5 million. The BES hydrogen research program is based on the workshop report *Basic Research Needs for the Hydrogen Economy* that includes detailed findings and research directions identified by the scientific community and DOE applied programs. This report highlights the enormous gap between our present capabilities for hydrogen production, storage and use, and those required for a competitive hydrogen economy. In response to the BES solicitation on Basic Research for the Hydrogen Fuel Initiative for FY 2005 funding, 227 full proposals were received in five submission categories:

- Novel materials for hydrogen storage
- Membranes for separation, purification, and ion transport
- Design of catalysts at the nanoscale
- Solar hydrogen production
- Bio-inspired materials and processes

The very high quality and relevance of the proposals received support increases for this effort. In accordance with the R&D Investment Criteria and using standard practices for identifying the most meritorious scientific research proposals, all awards will be based on the results of peer reviews that assess past performance and the quality of the proposals. The Office of Science and the Office of Energy Efficiency and Renewable Energy (EERE) collaborated in the review process to ensure basic research relevance to technology program goals. The collaboration will continue at EERE's annual program review meeting to promote information sharing. Beginning in FY 2006, EERE will organize parallel sessions for the BES principal investigators.

Complementing NNSA's Advanced Simulation and Computing Campaign on a broader scope, Science's $207.1 million **Advanced Scientific Computing Research (ASCR)** will advance U.S. leadership in high performance supercomputing, networking and software development in FY 2006. Specifically, ASCR in FY 2006 will integrate its $7.5 million **Genomics:GTL** partnership with the **Biological and Environmental Research** (BER) program into the larger portfolio of the Scientific Discovery through Advanced Computing. This shift broadens the support for the long-term maintenance and support of software tools.

The Administration continues to invest in fundamental, innovative, peer-reviewed research to create new knowledge in areas such as Life Sciences, Climate Change Research, Environmental Remediation, Medical Applications and Measurement Science, which represents many of the core programs of the Department of Energy. The FY 2006 request includes $455.7 million for **Biological and Environmental Research** to further investigate the potential for a new generation of sophisticated high-throughput genomics technologies, for making them widely and readily available, and for using them effectively to serve the community of national laboratories, and academic and industrial researchers. In FY 2006, the Department moves the management of the **National Institute for Global Environmental Change (NIGEC)** from the University of California at Davis to BER to reduce overhead, increase performance and make available funds to support additional relevant, high quality research. The number of NIGEC regional centers will be reduced from six to four through open competition in accordance with the principles of the President's Management Agenda. The budget request for NIGEC in FY 2006 remains at $8.5 million while the management change allows for approximately $1 million of additional research to be supported within that budgeted amount.

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 **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 technology has the potential to enable us to leapfrog into the future where energy demand does not threaten our economic growth. To this end,

the Department commits $290.6 million, approximately $16.6 million above the FY 2005 level, to **Fusion Energy Science** research. Assuming that international partners reach a timely site decision, DOE's initial contribution to ITER in FY 2006 is $49.5 million, and would be for the first year of equipment fabrication for the United States' in-kind contributions to this important partnership. The request is 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.

ADDRESSING THE ENVIRONMENTAL LEGACY

The end of the cold war and the legacy left behind from 50 years of nuclear research and production resulted in unprecedented amounts of contaminated waste, water, soil, and a vast number of contaminated structures across our nation. In 1989 the Department of Energy created the **Office of Environmental Management (EM)** to begin to mitigate the risks and hazards posed by radiological and other environmental contamination from the legacy of nuclear weapons development. After more than a decade, the Environmental Management program made little progress in achieving permanent risk reduction.

At the direction of the Administration in 2002, the Department of Energy took an aggressive approach to transform the program from managing risk to one of reducing and eliminating risk 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. DOE accelerated the schedule by 35 years, with taxpayer savings of $50 billion. Since the reforms were put in place four years ago, the program is delivering results. To date, the Department has cleaned up 76 of the 114 sites.

The FY 2006 Budget requests $6,505.5 million for EM to continue to meet its accelerated cleanup schedule. That schedule includes 31 sites to be remediated by 2025. After 2025, remediation at six sites will still remain. As cleanup is completed at sites such as Rocky Flats and Fernald, it makes sense that the EM budget should decline. FY 2006 is the first year of that decline with a decrease from FY 2005 of $548.2 million, consistent with the accelerated cleanup investment strategy. Also, responsibility is being transferred from EM to NNSA for the cleanup and waste management of seven NNSA sites. The amount transferred to NNSA in FY 2006 for these activities is $222.3 million, which includes $47 million for newly generated waste at Lawrence Livermore National Laboratory and Y-12 National Security Complex.

Included in the budget is $119.8 million for **Spent Nuclear Fuel Stabilization and Disposition** at Hanford within the Defense Site Acceleration Completion Appropriation. In FY 2006, this project will package and move approximately 2,100 tonnes of degrading spent nuclear fuel, and up to 60 cubic meters of radioactive sludge (estimated to weigh approximately 18 tonnes) generated by the degrading fuel, from wet storage in the K Basins near the Columbia River to safer, dry interim storage on the 200 Area Central Plateau. The K Basin facilities are well past their design lives and are a major threat to the environment due to the potential for radioactive basin water to contaminate the surrounding soil and the Columbia River. The spent nuclear fuel has been removed from the basins, and dewatering and sludge removal is underway. The project performance of the contractor, as measured by an unacceptably low Earned Value, resulted in significant loss of award fee for the contractor. As a result of this performance, DOE worked with the contractor to develop a new approach to process the sludge directly into disposable form instead of storing the sludge long-term in another facility. The Department has modified the current contract, and the work at the K Basin facilities has been accelerated. Although funding for the overall project is reduced in FY 2006, funding within the project to implement this technical approach on sludge removal has been increased.

The FY 2006 Budget request includes $625.9 million for the **Hanford Waste Treatment Plant**. Ongoing construction of the $5.8 billion Waste Treatment and Immobilization Plant (WTP) at Hanford is a key component of the Office of Environmental Management's plans to clean up liquid radioactive

waste currently stored in 177 aging underground storage tanks. To meet a 2011 facility start date in the agreement between DOE and its regulators, WTP design and construction activities were closely coupled. Recent project performance reviews indicated the work was falling behind schedule. In addition, recent seismic information raised new concerns that some equipment may require modification. This, in combination with the current schedule performance, resulted in a recent decision to slow WTP construction to allow further evaluation of requirements. In addition, an effort is underway to address safety uncertainties involving generation of hydrogen during operation. Lastly, there remain uncertainties regarding classification of tank wastes to be processed through WTP. The FY 2006 Budget request decreases funding to reflect the slower construction pace through FY 2006, pushing this funding into the project's outyears to ensure DOE still meets its commitment to start up WTP operations in 2011.

Like the Office of Science, the Office of Environmental Management has included five-year budget plans in the FY 2006 Budget. These plans will provide budgetary rigor and outyear context to programmatic decisions made by the Department on EM activities, and, along with the NNSA PPBE process and the Office of Science five-year plans, will serve as a model for the rest of the DOE programs, which will develop five-year budget plans for the FY 2007 Budget.

Every year the Department makes progress in meeting its goal of accelerated cleanup. This achievement is facilitated by the **Office of Legacy Management** (LM), which was established in FY 2004. Legacy Management is responsible for managing all post-environmental cleanup activities. This office enables the Environmental Management program to complete its current scope and focus on its primary mission of accelerated cleanup.

The long-term stewardship task of managing land, structures, facilities, and records, and overseeing the Department's pensions and post retirement benefits for former contractor employees lies with LM. With a budget request of $78.6 million in FY 2006, $12 miilion is needed to reimburse the anticipated costs of a closure site contractor to procure the services of a subcontractor to assist that contractor and others who may elect to use it in administering former contractor employee pension and medical benefits. The current schedule transfers programmatic responsibility of the Rocky Flats site and the Nevada offsites from EM to LM in FY 2007, with Fernald and Mound to follow in FY 2008. The FY 2006 Budget does not include a request for the **Worker and Community Transition** program. In FY 2005, the Department achieved its goal of mitigating the impact to the contract workers at Defense facilities and their communities.

Consistent with the President's National Energy Policy, the Administration is following through on its commitment to develop long-term, viable nuclear power in this country with the proposed funding increase to the Department's nuclear energy program in FY 2006. At the same time, long-term viability of nuclear power requires environmentally sound management of nuclear waste generated from nuclear energy. Therefore, in parallel with the expansion of nuclear power generation, the Department is requesting $651.4 million to meet the commitment to establish a national permanent nuclear waste repository at **Yucca Mountain**, Nevada. The FY 2006 Budget supports the completion of the application process leading to the issuance of construction authorization. Also in preparation for the eventual construction of the repository, the Office of Civilian Radioactive Waste Management, with a request of $85.4 million in FY 2006, continues to work on developing and managing the transportation capability required to transport spent nuclear fuel and high level radioactive waste from specified locations to the repository.

The Administration believes that fees currently paid to the government by utilities to finance the repository should be treated as offsetting collections against the appropriation from the Nuclear Waste Fund. The Administration also believes that amounts credited as offsetting collections should not exceed the amount appropriated in any given year to support the activities associated with the development of the repository.

ENSURING SAFEGUARDS AND SECURITY

Safeguarding and securing DOE's nuclear facilities, materials, information and employees remains one of the Administration's top priorities. The Department's safeguards and security funding in the FY 2006 request is $1.44 billion. This funding ensures the appropriate level of protection for all nuclear weapons facilities and the protection of nuclear waste material being cleaned up at our environmental cleanup sites, as well as safeguards and security activities at our scientific laboratories and facilities Since 9-11, the Department increased the protection afforded the nation's security assets and to anticipate the evolving threat level.

In May 2004, the Secretary announced his Security Initiatives to further reinforce the importance of enhancing information security, utilizing security technologies, consolidating materials, and strengthening security human capital expertise as an integrated approach to enhancing the Department's security posture. Actions to address these initiatives are in progress with many of them either being completed or nearing completion. However, even for those initiatives that were completed, continuous efforts and resources are required to ensure that the results sustained. As part of the security initiatives, the Design Basis Threat (DBT) was reviewed and revised based on the evolving understanding of the threat level. The revised DBT, issued in October 2004, requires a re-examination of the security posture at each facility and a re-examination of how the threat level will be met. These efforts are ongoing.

Meeting the revised DBT requires an integrated security approach that will deploy security based technical solutions to reduce the need for an increased protective force, consolidate materials by reducing the quantities of materials and the number of locations at which the materials are stored, and enhance the protective force tactical options through an elite protective force that is trained and equipped to meet the postulated threat.

With the Administration's strong will and commitment to national security, the funding request for safeguards and security will translate into measurable results.

DRIVING RESULTS THROUGH MANAGEMENT ACTIONS

The Department of Energy made great strides in meeting President Bush's challenge to become more efficient, more effective, more results-oriented, and more accountable for performance. Over the past three years, the President's Management Agenda (PMA) has been the framework for organizing the Department's efforts and has helped transform the DOE into one of the best managed agencies in government. On Office of Management and Budget PMA scorecards, DOE is consistently ranked as one of the top performing cabinet agencies and most recently achieved a "green" rating on four out of the five major PMA initiatives.

In each of the government-wide PMA initiatives, DOE achieved significant results. To better manage human capital, the Department implemented a performance management system to link employee achievement with mission accomplishment. In FY 2006, DOE will perform skills gap analysis for all mission critical skills. The Department completed five competitive sourcing studies and has four others underway. The completed studies encompass over 1,900 federal and 1,000 contractor positions. During FY 2006, 200 to 400 positions will be studied.

The Department streamlined its financial reporting process enabling success in meeting the accelerated financial reporting deadlines. During the same time frame, DOE received its sixth consecutive unqualified audit opinion with no material weaknesses. In FY 2005 and FY 2006, DOE will expand the availability of financial data in support of decision making by fully implementing the Integrated Management Navigation (I-MANAGE) system. The Department continues to apply Earned Value Management principles to each of its major information technology investments. In addition, DOE is partnering with other government agencies to develop a standardized and integrated human

resources information system, and is the co-lead on developing a consolidated grants management system.

Finally, DOE is developing a department-wide Planning, Programming, Budgeting and Evaluation (PPBE) process including all programs to clearly link budgeting decisions to program performance. With the first efforts toward this goal already underway in the NNSA, the FY 2006 Budget includes five year plans for both the Office of Science and the Office of Environmental Management, and the entire Department will submit five-year plans with the FY 2007 Budget.

As these examples indicate, the Department of Energy is using the PMA to meet the many management challenges it faces. The results are clear: the Department is more streamlined, more efficient, more results-oriented, and is committed to continue these improvements in FY 2006. In short, the President's Management Agenda has become the Department of Energy's own Results Agenda, keeping it organized for success and focused on the bottom line.

Department of Energy

Budget by Organization

(discretionary dollars in thousands)

	FY 2004 Comparable Approp	FY 2005 Comparable Approp	FY 2006 Request to Congress	FY 2006 vs. FY 2005	
Discretionary Summary By Organization					
National Security					
Weapons	6,447,159	6,583,350	6,630,133	+46,783	+0.7%
Defense Nuclear Nonproliferation	1,367,709	1,422,103	1,637,239	+215,136	+15.1%
Naval Reactors	761,872	801,437	786,000	-15,437	-1.9%
Office of the Administrator	352,949	357,051	343,869	-13,182	-3.7%
Other Defense Activities	-446	——	——	——	——
Total, National Nuclear Security Administration	8,929,243	9,163,941	9,397,241	+233,300	+2.5%
Energy, Science and Environment					
Energy					
Energy Efficiency and Renewable Energy	1,220,262	1,248,582	1,200,414	-48,168	-3.9%
Electric Transmission and Distribution	101,116	118,615	95,604	-23,011	-19.4%
Fossil Energy	790,863	640,244	759,956	+119,712	+18.7%
Nuclear Energy, Science and Technology	402,804	485,631	510,776	+25,145	+5.2%
Total, Energy	2,515,045	2,493,072	2,566,750	+73,678	+3.0%
Science	3,536,241	3,599,546	3,462,718	-136,828	-3.8%
Environment					
Environmental Management	6,752,870	7,053,640	6,505,476	-548,164	-7.8%
Civilian Radioactive Waste Management	576,578	572,384	651,447	+79,063	+13.8%
Environment, Safety and Health	165,230	141,096	107,029	-34,067	-24.1%
Office of Legacy Management	62,161	77,137	78,598	+1,461	+1.9%
Total, Environment	7,556,839	7,844,257	7,342,550	-501,707	-6.4%
Total, Energy, Science and Environment	13,608,125	13,936,875	13,372,018	-564,857	-4.1%
Corporate Management					
Office of the Secretary	3,942	4,644	5,399	+755	+16.3%
Management, Budget and Evaluation	100,893	108,558	111,806	+3,248	+3.0%
Competitive Sourcing	——	2,480	3,000	+520	+21.0%
Cost of Work and Revenues	-47,756	-50,952	-68,994	-18,042	-35.4%
Chief Information Officer	82,893	94,678	106,177	+11,499	+12.1%
Board of Contract Appeals	535	648	648	——	——
Hearings and Appeals	4,809	4,283	4,353	+70	+1.6%
Congressional and Intergovernmental Affairs	4,342	4,826	5,089	+263	+5.4%
Public Affairs	3,788	2,459	4,504	+2,045	+83.2%
General Counsel	20,839	21,774	24,217	+2,443	+11.2%
Policy and International Affairs	14,672	15,947	19,806	+3,859	+24.2%
Economic Impact and Diversity	5,865	5,922	6,182	+260	+4.4%
Inspector General	39,229	41,176	43,000	+1,824	+4.4%
Security and Safety Performance Assurance	304,467	306,099	301,095	-5,004	-1.6%
Energy Information Administration	81,100	83,819	85,926	+2,107	+2.5%
Power Marketing Administrations	212,999	208,794	57,123	-151,671	-72.6%
Colorado River Basins	1,458	-23,000	-23,000	——	——
Total, Corporate Management	834,075	832,155	686,331	-145,824	-17.5%
Federal Energy Regulatory Commission	-19,000	-15,000	-13,000	+2,000	+13.3%
Undistributed Adjustments	-1,286	——	——	——	——
Total, Discretionary Funding	**23,351,157**	**23,917,971**	**23,442,590**	**-475,381**	**-2.0%**

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

	FY 2004 Comparable Approp	FY 2005 Comparable Approp	FY 2006 Request to Congress	FY 2006 vs. FY 2005	
Discretionary Summary By Appropriation					
Energy And Water Development Appropriation Summary:					
Energy Programs					
Energy supply	794,897	932,319	902,674	-29,645	-3.2%
Non-Defense site acceleration completion	167,272	157,316	172,400	15,084	+9.6%
Uranium enrichment D&D fund	414,027	495,015	591,498	96,483	+19.5%
Non-Defense environmental services	307,795	288,966	177,534	-111,432	-38.6%
Science	3,536,373	3,599,546	3,462,718	-136,828	-3.8%
Nuclear waste disposal	188,879	343,232	300,000	-43,232	-12.6%
Departmental administration	109,276	119,284	130,259	10,975	+9.2%
Inspector general	39,229	41,176	43,000	1,824	+4.4%
Total, Energy Programs	5,557,748	5,976,854	5,780,083	-196,771	-3.3%
Atomic Energy Defense Activities					
National nuclear security administration:					
Weapons activities	6,447,159	6,583,350	6,630,133	46,783	+0.7%
Defense nuclear nonproliferation	1,367,709	1,422,103	1,637,239	215,136	+15.1%
Naval reactors	761,872	801,437	786,000	-15,437	-1.9%
Office of the administrator	352,949	357,051	343,869	-13,182	-3.7%
Total, National nuclear security administration	8,929,689	9,163,941	9,397,241	233,300	+2.5%
Environmental and other defense activities:					
Defense site acceleration completion	5,433,423	5,725,935	5,183,713	-542,222	-9.5%
Defense environmental services	895,015	845,704	831,331	-14,373	-1.7%
Other defense activities	675,824	672,590	635,998	-36,592	-5.4%
Defense nuclear waste disposal	387,699	229,152	351,447	122,295	+53.4%
Total, Environmental & other defense activities	7,391,961	7,473,381	7,002,489	-470,892	-6.3%
Total, Atomic Energy Defense Activities	16,321,650	16,637,322	16,399,730	-237,592	-1.4%
Defense EM privatization (rescission)	-15,329	——	——	——	——
Power marketing administrations:					
Southeastern power administration	5,070	5,158	——	-5,158	-100.0%
Southwestern power administration	28,431	29,117	3,166	-25,951	-89.1%
Western area power administration	176,873	171,715	53,957	-117,758	-68.6%
Falcon & Amistad operating & maintenance fund	2,625	2,804	——	-2,804	-100.0%
Total, Power marketing administrations	212,999	208,794	57,123	-151,671	-72.6%
Federal energy regulatory commission	——	——	——	——	——
Subtotal, Energy And Water Development Appropriation	22,077,068	22,822,970	22,236,936	-586,034	-2.6%
Uranium enrichment D&D fund discretionary payments	-449,333	-459,296	-451,000	8,296	+1.8%
Excess fees and recoveries, FERC	-19,000	-15,000	-13,000	2,000	+13.3%
Colorado River Basins	1,458	-23,000	-23,000	——	——
Total, Energy And Water Development Appropriation	**21,610,193**	**22,325,674**	**21,749,936**	**-575,738**	**-2.6%**
Interior And Related Agencies Appropriation Summary:					
Fossil energy research and development	658,981	571,854	491,456	-80,398	-14.1%
Naval petroleum and oil shale reserves	17,995	17,750	18,500	750	+4.2%
Elk Hills school lands fund	36,000	36,000	84,000	48,000	+133.3%
Energy conservation	867,967	868,234	846,772	-21,462	-2.5%
Economic regulation	1,034	——	——	——	——
Strategic petroleum reserve	170,948	169,710	166,000	-3,710	-2.2%
Northeast home heating oil reserve	4,939	4,930	——	-4,930	-100.0%
Energy information administration	81,100	83,819	85,926	2,107	+2.5%
Subtotal, Interior Accounts	1,838,964	1,752,297	1,692,654	-59,643	-3.4%
Clean coal technology	-98,000	-160,000	——	160,000	+100.0%
Total, Interior And Related Agencies Appropriation	**1,740,964**	**1,592,297**	**1,692,654**	**100,357**	**+6.3%**
Total, Discretionary Funding	**23,351,157**	**23,917,971**	**23,442,590**	**-475,381**	**-2.0%**

Department of Energy
Funding by Goals
(discretionary dollars in thousands)

			FY 2004 Comparable Appropriation	FY 2005 Comparable Appropriation	FY 2006 Request
Goals					
General Goal 1, Nuclear Weapons Stewardship					
Program Goal	1.27	Directed Stockpile Work	1,267,579	1,212,519	1,414,022
Program Goal	1.28	Science Campaign	254,253	262,025	260,633
Program Goal	1.29	Engineering Campaign	260,491	248,157	228,623
Program Goal	1.30	Conf. Fusion Ignition & High Yield	502,668	508,783	458,147
Program Goal	1.31	Adv. Simulation & Computing	702,596	661,486	657,571
Program Goal	1.32	Pit Manufacturing & Certification	257,876	249,709	247,533
Program Goal	1.33	Readiness Campaign	289,254	248,215	217,676
Program Goal	1.34	Readiness in Tech. Base & Fac (Ops)	1,364,607	1,434,811	1,381,491
Program Goal	1.35	Readiness in Tech. Base & Fac (Con)	256,016	261,233	241,848
Program Goal	1.36	Secure Transportation Asset	163,492	189,602	211,054
Program Goal	1.37	Nuclear Weapons Incident Response	94,487	102,891	118,210
Program Goal	1.38	Facilities & Infrastructure Recap	234,510	297,845	282,111
Program Goal	1.39	Safeguards and Security	617,680	713,875	736,826
Total, General Goal 1, Nuclear Weapons Stewardship			**6,265,507**	**6,391,150**	**6,455,744**
General Goal 2, Nuclear Nonproliferation					
Program Goal	2.40	Non Proliferation & Verification R&D	220,313	223,944	272,218
Program Goal	2.41	HEU Transparency Implementation	17,276	20,782	20,483
Program Goal	2.42	Elim. Of Weapons-Grade Plutonium Pro	79,008	43,965	132,000
Program Goal	2.44	Non Proliferation & Internat'l Security	102,405	91,310	80,173
Program Goal	2.45	Global Initiatives for Proliferation Prevention	38,390	40,672	37,890
Program Goal	2.46	Intern'l Nuclear Mat'l Prot. & Coop	220,832	294,626	343,435
Program Goal	2.47	Fissile Materials Disposition	622,421	613,008	653,065
Program Goal	2.64	Global Threat Reduction Initiative (GTRI)	67,064	93,795	97,975
Total, General Goal 2, Nuclear Nonproliferation			**1,367,709**	**1,422,103**	**1,637,239**
General Goals 1 & 2					
Program Goal	0.50	Office of the Administrator	352,949	357,051	343,869
General Goal 3, Naval Reactors					
Program Goal	3.49	Naval Reactors	761,872	801,437	786,000
Total, General Goal 3, Naval Reactors			**761,872**	**801,437**	**786,000**
General Goal 4, Energy Security					
Program Goal	4.01	Hydrogen/Fuel Cell Technology	156,578	186,213	204,538
Program Goal	4.02	Vehicle Technologies	192,225	185,255	185,442
Program Goal	4.03	Solar Energy	85,798	92,559	94,137
Program Goal	4.04	Building Technologies	64,447	73,318	64,777
Program Goal	4.05	Wind Energy	42,301	44,394	49,617
Program Goal	4.06	Hydropower	4,966	5,290	561
Program Goal	4.07	Geothermal Technology	26,171	27,493	26,125
Program Goal	4.08	Biomass and Biorefinery Systems R&D	97,686	96,083	80,835

			FY 2004 Comparable Appropriation	FY 2005 Comparable Appropriation	FY 2006 Request
Goals					
Program Goal	4.09	Weatherization	253,296	255,535	257,026
Program Goal	4.10	State Energy Programs	51,599	52,075	46,376
Program Goal	4.11	Intergovernmental Activities	54,051	56,722	43,144
Program Goal	4.12	Electric Transmission and Distribution	101,116	118,615	95,604
Program Goal	4.13	DEMP/FEMP	23,740	22,205	21,426
Program Goal	4.14	New Nuclear Generation Technologies	119,308	157,246	215,517
Program Goal	4.17	National Nuclear Infrastructure	261,438	306,120	268,178
Program Goal	4.51	SEPA	5,070	5,158	0
Program Goal	4.52	SWPA	28,431	29,117	3,166
Program Goal	4.53	WAPA	180,956	151,519	30,957
Program Goal	4.54	BPA*	0	0	0
Program Goal	4.55	Zero Emissions Coal-Based Elec	458,817	291,666	464,962
Program Goal	4.56	Natural Gas Technology	56,281	68,425	13,247
Program Goal	4.57	Oil Technology	45,883	51,764	13,247
Program Goal	4.58	Petroleum Reserves	229,882	228,390	268,500
Program Goal	4.59	Distributed Energy Resources	66,549	67,665	63,283
Program Goal	4.60	Industrial Technologies	100,854	83,776	63,127
Program Goal	4.61	Energy Information Administration	81,100	83,819	85,926
Program Goal	4.63	Enhance Nat. Nuclr. Educ. Infra. Cap	22,058	22,265	27,081
Total, General Goal 4, Energy Security			**2,810,602**	**2,762,685**	**2,686,799**
General Goal 5, World-Class Scientific Research					
Program Goal	5.19	High Energy Physics	800,445	795,068	776,432
Program Goal	5.20	Nuclear Physics	424,484	437,000	403,197
Program Goal	5.21	Bio & Environmental Research	697,483	628,234	495,580
Program Goal	5.22	Basic Energy Sciences	1,107,909	1,192,565	1,246,342
Program Goal	5.23	Adv. Scientific Computing Res	219,953	250,973	225,181
Program Goal	5.24	Fusion Energy	285,967	295,707	315,985
Total, General Goal 5, World-Class Scientific Research			**3,536,241**	**3,599,546**	**3,462,718**
General Goal 6, Environmental Management					
Program Goal	6.18	Environmental Management	6,752,870	7,053,640	6,505,476
Program Goal	6.26	Legacy Management	62,161	77,137	78,598
Program Goal	6.65	Environmental Projects and Operations	181,652	192,200	174,389
Total, General Goal 6, Environmental Management			**6,996,683**	**7,322,977**	**6,758,463**
General Goal 7, Nuclear Waste					
Program Goal	7.25	Nuclear Waste Disposal (Def/Non-Def)	576,578	572,384	651,447
Total, General Goal 7, Nuclear Waste			**576,578**	**572,384**	**651,447**
Corporate Management (Other Mission Supporting Organizations)			683,016	688,638	660,311
Total, Discretionary Funding			**23,351,157**	**23,917,971**	**23,442,590**

* Bonneville's (BPA) program is mandatory and non-discretionary, and receives no annual appropriations from Congress.
BPA funds the expense portion of its 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 2004 Comparable Approp	FY 2005 Comparable Approp	FY 2006 Request to Congress	FY 2006 vs. FY 2005	
National nuclear security administration:					
Weapons activities	6,447,159	6,583,350	6,630,133	+46,783	+0.7%
Defense nuclear nonproliferation	1,367,709	1,422,103	1,637,239	+215,136	+15.1%
Naval reactors	761,872	801,437	786,000	-15,437	-1.9%
Office of the administrator	352,949	357,051	343,869	-13,182	-3.7%
Total, National nuclear security administration	**8,929,689**	**9,163,941**	**9,397,241**	**233,300**	**+2.5%**

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

Weapons Activities – NNSA

(discretionary dollars in thousands)

	FY 2004 Comparable Approp	FY 2005 Comparable Approp	FY 2006 Request to Congress	FY 2006 vs. FY 2005	
Weapons Activities					
Directed stockpile work	1,290,525	1,277,154	1,421,031	143,877	+11.3%
Campaigns	2,308,178	2,294,495	2,080,444	-214,051	-9.3%
Readiness in technical base and facilities	1,649,959	1,786,453	1,631,386	-155,067	-8.7%
Secure transportation asset	166,452	199,709	212,100	12,391	+6.2%
Nuclear weapons incident response	96,197	108,376	118,796	10,420	+9.6%
Facilities and infrastructure recapitalization program	238,755	313,722	283,509	-30,213	-9.6%
Environmental projects and operations	181,652	192,200	174,389	-17,811	-9.3%
Safeguards and security	628,861	751,929	740,478	-11,451	-1.5%
Subtotal, Weapons Activities	6,560,579	6,924,038	6,662,133	-261,905	-3.8%
Use of prior year balances and other adjustments	-113,420	-340,688	-32,000	308,688	+90.6%
Total, Weapons Activities	**6,447,159**	**6,583,350**	**6,630,133**	**46,783**	**+0.7%**

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 November 2004 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; Facilities and Infrastructure Recapitalization Program; Environmental Projects and Operations; and Safeguards and Security. The funding for Program Direction activities, except for Secure Transportation Asset and Environmental Projects and Operations 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 and the revised stockpile plan submitted to Congress in June 2004. The FY 2006 request is organized by Life Extension Programs, Stockpile Systems, Retired Systems and Stockpile Services, 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, maintenance and life extension of the stockpile. They have allowed NNSA to move to "science-based" certification and assessments for stewardship by relying on experiments, modeling, simulation, surveillance and historical underground nuclear testing. The **Science and Engineering Campaigns** are focused to provide the basic scientific understanding and the 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** will focus on the 2010 ignition goal. The **Advanced Simulation and Computing Campaign** will continue to improve capabilities through development of faster computational 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 and certify the W88 pit and planning for future pit types. The **Readiness Campaign** is technology-based efforts to reestablish and enhance manufacturing and other capabilities needed to meet planned weapon component production.

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. Starting in FY 2006 NNSA is assuming the management and responsibility for newly generated radioactive waste at Lawrence Livermore National Laboratory and the Y-12 National Security Complex from the Environmental Management Program.

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 infrastructure by upgrading key facilities with a dedicated refurbishment program.

Beginning in FY 2006, NNSA will assume responsibility from the Office of Environmental Management to manage the remaining environmental legacy of the Cold War at most NNSA Sites. Environmental activities at LANL and Y-12 are schedule to transfer from EM to NNSA in future years. This includes environmental restoration, legacy waste management and disposition, and decontamination and decommissioning activities. Funding for these activities is included in the **Environmental Projects and Operations Program**. Under NNSA, the program will improve management efficiency and effectiveness as it continues to accelerate risk reduction and cleanup at NNSA sites in accordance with applicable environmental laws and regulations.

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 management and operations contractors at NNSA landlord sites is included in the DOE Security program request.

PROGRAM HIGHLIGHTS

The FY 2006 request supports the requirements of the Stockpile Stewardship program as defined by Presidential Directives, Department of Defense requirements, the Nuclear Posture Review and the revised stockpile plan and will:

Complete the Annual Stockpile Certification and Report to the President and, subsequently, to the Congress by March 2006;

Support the scheduled workload for the ongoing B61, W76, W80 life extension programs as reaffirmed by the Nuclear Posture Review and the revised stockpile plan;

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

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 and the 2010 ignition goal;

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 continue the transition to an 18-month readiness posture;

Continue plans to certify a W88 pit by 2007 and planning for a modern pit facility;

Produce and deliver tritium by FY 2007;

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;

Greatly reduce the risk and hazards to human health and environment through the effective and efficient completion of site cleanup at NNSA sites; and

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

SIGNIFICANT FUNDING CHANGES – FY 2005 to FY 2006 Request ($ in millions)

Weapons Activities (FY 2005 $6,583.4; FY 2006 $6,630.1) .....+$46.7
FY 2006 request is 0.7 percent above FY 2005. Increase will support scheduled R&D, maintenance and evaluation, and certification for the nuclear weapons stockpile as supported by the Nuclear Posture Review. Funding is consistent with planned program funding levels in the NNSA's Future Years Nuclear Security Program.

Directed Stockpile Work (FY 2005 $1,277.2; FY 2006 $1,421.0) ..... +$143.8
FY 2006 request is 11.3 percent above the FY 2005 level and is presented in a budget structure consistent with congressional direction that will improve management focus and allow better traceability and visibility into weapons systems budget and cost.

Life Extension Programs for the B61, W76, and W80 (FY 2005 $363.1; FY 2006 $348.3) develops solutions to extend the life of these three warheads and correct potential technical issues.

Stockpile Systems (FY 2005 $278.5; FY 2006 $311.8) conducts scheduled maintenance, ongoing assessment and certification activities, limited life component exchanges, surveillance and required alteration, modifications and safety studies.

Retired Warheads Stockpile Systems (FY 2005 $35.0; FY 2006 $35.3) provides for the return of retired weapons, dismantling weapons, and characterization and disposition of components.

Stockpile Services (FY 2005 $600.5; FY 2006 $725.7) support production activities, research and development activities, certification, weapon safety and security efforts, stockpile management and technology, reliable warhead replacements, and robust nuclear earth penetrator studies.

Science Campaign (FY 2005 $276.0; FY 2006 $261.9) ..... -$14.1
FY 2006 request is 5.1 percent below the FY 2005 level.

Primary Technology Assessment (FY 2005 $46.5; FY 2006 $45.2) 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; and an increased emphasis on funding primary certification work for the stockpile.

Test Readiness (FY 2005 $26.8; FY 2006 $25.0) funds are requested to continue improving the state of readiness to reach an 18-month test-readiness posture in FY 2006, which would thereafter be maintained into the foreseeable future.

Dynamic Materials Properties (FY 2005 $85.0; FY 2006 $80.9) 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 campaign activity supports experiments at the U1a Complex, JASPER, and Atlas, LANCE and the pulsed power Z accelerator. Decrease reflects a slowdown in the development of advanced diagnostics to support JASPER plutonium experiments and the end of work at Y-12 and Savannah River Site.

Advanced Radiography (FY 2005 $54.8; FY 2006 $49.5) 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. Long-term goal is to develop multi-axis, multi-time radiography, technology studies. FY 2006 request represents an overall decrease in the advanced radiography effort. Decision to curtail activities for the development of special radiographic experimental materials and capability development is partially offset by the $27 million provided for recovery and commissioning of the Dual-Axis Radiography Hydrotest Test (DARHT) 2nd Axis facility.

Secondary Assessment Technologies (FY 2005 $63.0; FY 2006 $61.3) 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. Supports the research program to reduce risk in the life extension programs and for high energy density weapons experimentation and model development. Decrease slows anticipated growth in diagnostic development and target fabrication and decreased availability to conduct physics experiments on the Z accelerator and the National Ignition Facility.

Engineering Campaign (FY 2005 $261.4; FY 2006 $229.8) ..... -$31.6
FY 2006 request is 12.1 percent below the FY 2005 level.

Enhanced Surety (FY 2005 $32.8; FY 2006 $29.8) pursues a multi-technology approach to demonstrate enhanced use-denial and advanced initiation technology development for the life extension programs. FY 2006 is focused at improving safety at the detonator interface to the nuclear explosives package and development of a fiber optic controlled detonator. Decrease is consistent with limiting the scope of technology development for stockpile activities beyond the W76-1 and W80-3 LEPs including delaying work on multi-point surety and intrinsic use control.

Weapons Systems Engineering Assessment Technology (FY 2005 $27.0; FY 2006 $24.0) 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. Reduction is in the level of effort for experimental testing and model validation that support Advanced Simulation and Computing and Directed Stockpile Work milestones.

Nuclear Survivability (FY 2005 $9.4; FY 2006 $9.4) develops experimental and validated analytical tools for qualifying warheads to nuclear survivability requirements, modernizes tools for weapon outputs, and develops technologies for improved radiation hardness.

Enhanced Surveillance (FY 2005 $101.9; FY 2006 $96.2) addresses stockpile aging concerns through component and material lifetime assessments and develops predictive capabilities for early identification which includes accelerated aging studies for pit lifetime assessments. Program identifies aging issues with sufficient lead-time to ensure that NNSA can have the refurbishment capability and capacity in place when required. Program also delivers advanced diagnostics and telemetry to support flight test requirements; develops new surveillance techniques for tritium reservoirs; and supports the annual assessment of the nuclear stockpile. Decrease reflects the elimination or delay of some enhanced surveillance activities, but is partially offset by the inclusion of funds to support the University Research Program in Robotics (URPR), which is central to a focused university partnership program for engineering science.

Construction of the Microsystems and Engineering Sciences Applications (MESA) Complex (FY 2005 $90.4; FY 2006 $70.3) at Sandia National Laboratory, NM, 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 construction schedule which was accelerated by Congress in FY 2005.

Inertial Confinement Fusion Ignition and High Yield Campaign
(FY 2005 $535.9; FY 2006 $460.4)..... -$75.5

FY 2006 request is 14.1 percent below the FY 2005 level. 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 2005 $129.0; FY 2006 $141.9). FY 2006 realigns funding priorities to provide support for the NIF construction and the demonstration program necessary to meet the ignition goal. It supports NIF diagnostics and cryogenic target systems; provides for ignition target design and fabrication; ICF experimental support activities; operation of the Z accelerator at Sandia; university grants and short-pulse high-intensity laser activities. High-Energy Petawatt Laser Development is reduced and provides for the construction of the OMEGA Extended Performance (OMEGA EP) laser project at the University of Rochester Laboratory for Laser Energetics. Funding at the Naval Research Laboratory is concluded in FY 2005. Overall decrease results from one time increases for congressionally directed activities in FY 2005 such as High Average Power Lasers and High Energy Petawatt Laser Development.

Advanced Simulation and Computing Campaign
(FY 2005 $696.7; FY 2006 $660.8)..... -$35.9

FY 2006 request is 5.2 percent below the FY 2005 level. Includes 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 2006. Decrease reflects management changes to weapon support requirements and schedule; the decision to reduce investment in industry collaborations; a shift in the platform procurement strategy; changes in the focus required by the Life Extension Programs to shift investments from longer term research into near-term delivery of products; and completion of construction projects in FY 2005.

Pit Manufacturing and Certification Campaign
(FY 2005 $263.0; FY 2006 $248.8)..... -$14.2
FY 2006 request is 5.4 percent below the FY 2005 level. Campaign focuses on the manufacturing and certification of W88 pits, including preparations for integral experiments in FY 2006 to support the W88 pit certification goal of FY 2007. Decrease is consistent with a reduction in manufacturing support and the number of subcritical experiments required for the revised certification project scope. Based on current pit lifetimes and stockpile requirements, NNSA is planning a responsive pit-manufacturing infrastructure with sufficient capability to provide for the long-term safety and reliability of the nation's nuclear weapons stockpile. An interim pit manufacturing capability is currently being re-established at LANL, but this capability is not sufficient to support the long-term requirements of the nuclear weapons deterrent. Planning for a Modern Pit Facility (MPF) with the capability to meet requirements is essential to establish a viable readiness posture. NNSA will monitor pit lifetime assessments and the age of the stockpile to reaffirm MPF requirements. Modest funding for the MPF will provide for the continuation of design studies required to complete a Conceptual Design Report (CDR).

Readiness Campaign (FY 2005 $261.4; FY 2006 $218.8)..... -$42.6
FY 2006 request is 16.3 percent below the FY 2005 level. This program has the responsibility for developing or reestablishing new manufacturing processes and technologies for qualifying weapon components for reuse.

Stockpile Readiness (FY 2005 $39.1; FY 2006 $31.4) goal is to restore full production manufacturing capability at the Y-12 National Security Complex. Funding is primarily for procuring and installing equipment to meet multiple DSW requirements. Decrease is attributed to the postponement of lower priority Stockpile Readiness activities, such as technology insertion, LEP risk mitigation projects, and major items of equipment.

High Explosives and Weapons Operations (FY 2005 $33.9; FY 2006 $17.1) ensures long-term manufacturing capabilities for high explosive fabrication, including high explosive manufacturing and product requalification; and weapon assembly or disassembly operations at the Pantex Plant. Decrease is attributed to the postponement of lower priority activities including explosive synthesis deployment and LEP risk mitigation projects that are least likely to impact LEP needs.

Non-Nuclear Readiness (FY 2005 $32.6; FY 2006 $28.6) provides the electrical, electronic, and mechanical production capabilities that enable arming, fuzing, firing, safety, and control of nuclear weapons. Supports modernization and readiness of capabilities including equipment purchases that support materials engineering and environmental testing related to W76 and the life extension programs. Reduction reflects completion of activities in accordance with approved plans.

Tritium Readiness (FY 2005 $79.1; FY 2006 $87.6) 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 Watts Bar reactor began in October 2003. Irradiated rods will be removed in FY 2006 and transported to a temporary storage location to await completion of the Tritium Extraction Facility (TEF). Construction of TEF will be fully funded in FY 2006 to support start up of facility operations planned to begin at the end of FY 2007. This facility will provide steady-state production capability of as much as several Kg of tritium

per year, but can be resized as stockpile requirements change. Tritium Readiness funding increase reflects the transition from development to operation of the tritium production system and operating costs for startup activities for TEF.

Advanced Design and Production Technologies (ADAPT) (FY 2005 $76.7; FY 2006 $54.0) 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. 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 2006 focus on Advanced Technology Roadmap strategies and near term LEPs. Decrease reflects the postponement of lower priority work related to models-based enterprise and responsiveness; the Information Technology System, NNSA ADAPT Enterprise Integration; the new microelectronic capability development and deployment at the Kansas City Plant; and developing technology and synthesis capability at Pantex for deployment in High Explosives and Weapons Operations activities.

Readiness in Technical Base and Facilities (RTBF)
(FY 2005 $1,786.5; FY 2006 $1,631.4) ..... -$155.1
FY 2006 request is 8.7 percent below the FY 2005 level and is comprised of Operations and Maintenance activities and Construction projects.

Operations of Facilities (FY 2005 $1,272.4; FY 2006 $1,160.8) provides funds for the operation, physical infrastructure, and on-going maintenance of facilities for activities conducted in the Campaigns and Directed Stockpile Work. Funds include support for the TA-18 Early Move of Special Nuclear Material to other locations. Beginning in FY 2006, NNSA assumes the responsibility and funding to manage newly generated waste responsibilities at LLNL and at Y-12 National Security Complex to ensure hazardous, radioactive and mixed wastes are stored, treated, certified, and shipped to off site disposal safely. Overall decrease reflects a prioritization of activities across the nuclear weapons complex and one-time increases for congressionally-directed projects in FY 2005.

Program Readiness (FY 2005 $103.5; FY 2006 $105.7) includes select activities that support more than one NNSA facility, Campaign or Directed Stockpile Work activity including manufacturing process capabilities required to support the stockpile; critical skill needs; and pulsed power science and technology. Nevada Test Site readiness activities provide logistical support for laboratory staff permanently located in Nevada and the NTS Equipment Revitalization Program. Additional efforts are related to offsite monitoring, weather, cultural resources, hydrology and geology, legacy compliance for environmental issues and the Borehole Management Program.

Special Projects (FY 2005 $31.4; FY 2006 $6.6) supports $4.0 million for Landlord costs associated the conveyance and transfer of land at LANL to the County of Los Alamos and San Ildefonso Pueblo and $2.6 million for pension liabilities. Decrease is a result of congressionally directed activities from FY 2005 and moving other activities funding into the more appropriate Operations of Facilities request.

Material Recycle and Recovery (FY 2005 $65.3; FY 2006 $72.7) 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 due to scope for increased production in enriched uranium wet chemistry, operation of the Oxide Conversion Facility (OCF); full production of the Reduction Process; and 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 2005 $15.8; FY 2006 $17.2) includes research, development, design, certification, testing and evaluation for shipping containers not directly associated with the life extension programs in DSW. The increase is attributed to activities to support TA-18 Early Move of Special Nuclear Material to other locations, development of a new shipping container (DPP-1) to transport War Reserve Pits; start of Bulk Tritium Shipping Package development; 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 2005 $22.7; FY 2006 $25.2) provides for storage of surplus pits, highly enriched uranium, and other weapons and nuclear materials in compliance with DOE/NNSA requirements. In FY 2006, funding for the storage of surplus HEU materials at the Y-12 National Security Complex is transferred from Defense Nuclear Nonproliferation. FY 2006 request represents increased material characterization and implementation of the Highly Enriched Uranium Manufacturing Facility (HEUMF) Transition Plan.

Construction (FY 2005 $275.2; FY 2006 $243.0) supports line item project construction and project engineering design activities from FY 2001-2006. Funding provides for continuation of all ongoing projects. In FY 2006, project engineering and design (PED) line item of $14.1 has five new subprojects including three at LANL, the TA-55 Radiography Facility, the TA-55 Reinvestment Project, and the Radioactive Liquid Waste Treatment Facility Upgrade, one subproject at Sandia in California, Building 942 Renovation, and the Uranium Processing Facility at Y-12 National Security Complex. Request initiates three new line item construction projects totaling $26.9 for the Replace Fire Station No. 1 and No. 2, and Building B-3 Remediation, Restoration and Upgrade, both at the Nevada Test Site and Tritium Facility Modernization at LLNL. Due to changing mission requirements, the Capability for Advanced Loading Missions project at Savannah River is no longer needed and has been canceled. This change affects both PED and line item construction funding. NNSA is planning to consolidate high-explosive fabrication and is requesting no construction funding in FY 2006 for the High Explosive Pressing Facility at Pantex; the DX High Explosives Characterization Project at LANL and the Energetic Materials Processing Center at LLNL.

Secure Transportation Asset (FY 2005 $199.7; FY 2006 $212.1) .....+$12.4
FY 2006 request is 6.2 percent above the FY 2005 level. Funding provides personnel, equipment, and training for the scheduling and secure transport services for the nuclear weapons complex and 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 2005 $108.4; FY 2006 $118.8) ....+$10.4
FY 2006 request is 9.6 percent above FY 2005. 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 Nuclear Emergency Support Team (FY 2005 $67.9; FY 2006 $77.2), which responds to nuclear terrorist threats. Increase will bring first responder capability in line with their increased responsibilities and operations tempo by replacing outdated equipment, providing qualification training, the development and implementation of a first responder outreach program and a modest increase to the Technology Integration program. FY 2006 provides $10.3 for the transfer of the DOE headquarters Emergency Operations Centers from the Office of Security, Safety Performance and Assurance.

Facilities and Infrastructure Recapitalization
(FY 2005 $313.7; FY 2006 $283.5) ..... -$30.2
FY 2006 request is 9.6 percent below FY 2005. Decreased funding provides for recapitalization, facility disposition, and infrastructure planning of the nuclear weapons complex. In FY 2006, the project engineering and design request of $5.8 supports four new subprojects. There are new line item construction projects, one at Y-12 National Security Complex and two at the Pantex Plant for a total of $8.4 that will further reduce the deferred maintenance backlog and satisfy a critical need for improvement to the utilities infrastructure of the complex.

Environmental Projects and Operations
(FY 2005 $192.2; FY 2006 $174.4)..... -$17.8
FY 2006 request is 9.3 percent below FY 2005. FY 2006 budget reflects the transfer of a number of environmental activities from the Office of Environmental Management to the NNSA. Environmental Projects and Operations Program will accelerate risk reduction and cleanup of the environmental legacy at NNSA sites in accordance with applicable environmental laws and regulations, and in consultation with affected stakeholders and tribal governments. Program includes environmental restoration, legacy waste management and disposition, and decontamination and decommissioning at the Kansas City Plant (KCP), Lawrence Livermore National Laboratory (LLNL), Nevada Test Site (NTS), Sandia National Laboratories (SNL), Pantex Plant (PX), and the Separations Process Research Unit (SPRU) and the waste disposal facilities at the Nevada Test Site. Decrease reflects planned project closures in FY 2006 at the Kansas City Plant, Lawrence Livermore National Laboratory, and Sandia National Laboratory in New Mexico.

Safeguards and Security (FY 2005 $751.9; FY 2006 $740.5)..... -$11.4
FY 2006 request is 1.5 percent below FY 2005. 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; application of emerging technologies; and heightened physical security levels at NNSA sites. FY 2006 continues the ongoing site efforts to implement the newly revised DBT by conducting performance testing, reviews of vulnerability assessments and analyzing revised threat and vulnerability analyses which may impact future requirements. Overall decrease results from one-time increases for congressionally-directed activities in FY 2005 for security infrastructure upgrades at the Y-12 National Security Complex and cyber security activities at LANL.

Defense Nuclear Nonproliferation – NNSA

(discretionary dollars in thousands)

	FY 2004 Comparable Approp	FY 2005 Comparable Approp	FY 2006 Request to Congress	FY 2006 vs. FY 2005	
Defense Nuclear Nonproliferation					
Nonproliferation and verification R&D	228,197	223,963	272,218	48,255	+21.5%
Nonproliferation and international security	86,219	91,318	80,173	-11,145	-12.2%
International materials protection and cooperation	228,734	294,651	343,435	48,784	+16.6%
Global initiatives for proliferation prevention	39,764	40,675	37,890	-2,785	-6.8%
HEU transparency implementation	17,894	20,784	20,483	-301	-1.4%
International nuclear safety and cooperation	19,850	——	——	——	——
Elimination of weapons-grade plutonium production program	81,835	43,969	132,000	88,031	+200.2%
Fissile materials disposition	644,693	613,060	653,065	40,005	+6.5%
Global threat reduction initiative	69,464	93,803	97,975	4,172	+4.4%
Subtotal, Defense Nuclear Nonproliferation	1,416,650	1,422,223	1,637,239	215,016	+15.1%
Use of prior year balances and other adjustments	-48,941	-120	——	120	+100.0%
Total, Defense Nuclear Nonproliferation	**1,367,709**	**1,422,103**	**1,637,239**	**215,136**	**+15.1%**

PROGRAM DESCRIPTION

NNSA's **Defense Nuclear Nonproliferation** (NN) account is based on eight programs which together provide policy and 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. 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 conducts research, development, testing, and evaluation programs leading to prototype demonstrations and detection systems that strengthen the U.S. response to current and projected threats to national security and world peace posed by the proliferation of nuclear weapons and diversion of special nuclear material. The program interfaces directly with operational agencies to provide innovative systems and technologies to meet their nonproliferation, counter-proliferation, and counter-terrorism mission responsibilities.

Nonproliferation and International Security strengthens the global nuclear nonproliferation regime by limiting sensitive exports, supporting international safeguards, improving international emergency management activities and providing policy recommendations and technical and policy advice to develop and implement U.S. policy regarding treaties, agreements, and mutual inspections.

International Nuclear Materials Protection and Cooperation works to prevent nuclear terrorism by working in Russia and other regions of concern to secure and eliminate vulnerable nuclear weapons and weapons-usable material; and installing detection equipment at border crossings and Megaports to prevent and detect the illicit transfer of nuclear material.

Global Initiatives for Proliferation Prevention works to redirect Russian (and other countries) nuclear weapons expertise by engaging former weapons scientists in non-military research and commercial ventures.

Highly Enriched Uranium Transparency Implementation develops and implements transparency measures which increase confidence that Low Enriched Uranium (LEU) purchased under the 1993 U.S./Russian HEU Purchase Agreement is derived from HEU extracted from dismantled Russian nuclear weapons and eliminated from Russian stockpiles.

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 facilitate shutdown of the reactors.

Fissile Materials Disposition conducts activities in the United States and Russia to dispose of surplus weapons-grade fissile materials. Activities include the design and construction of a U.S. and Russian MOX Fuel Fabrication Facility that are central to the disposition of surplus plutonium by using it as nuclear reactor fuel. Disposing of this surplus fissile material in the U.S. 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 plutonium brought to the Savannah River Site for disposition.

Global Threat Reduction Initiative identifies, secures, removes and/or facilitates the disposition of high-risk nuclear and other radiological materials around the world that pose a potential threat to the U.S. and the international community. The program works to minimize the use of HEU in civil nuclear applications worldwide by converting research reactors and targets used in the production of medical isotopes to suitable LEU fuels and targets; eliminates stockpiles of Russian-origin fresh and spent nuclear fuel and U.S.-origin spent nuclear fuel in foreign research reactors through repatriation of such material to Russia and the U.S., respectively; addresses the removal of vulnerable material worldwide, including material that is not covered by previously existing programs; prevents proliferation of nuclear weapons by securing the weapons-grade plutonium in the spent fuel from the BN-350 fast-breeder reactor in Aktau, Kazakhstan; purchases Russian HEU fuel for use in U.S. research reactors; identifies, recovers, and stores, on an interim-basis, certain domestic radioactive sealed sources, and other radiological materials that pose a security risk to the U.S. and/or world community; and reduces the international threat posed by radiological materials that could be used in a radiological dispersal device (RDD) or “dirty bomb.”

PROGRAM HIGHLIGHTS

The FY 2006 request of $1.64 billion is $215 million above the FY 2005 comparable appropriation. Funding of $550 million for plutonium disposition in the U.S. and Russia is requested at the level required for the construction of facilities to convert weapons-grade plutonium into fuel for commercial reactors. A substantial increase for Nonproliferation and Verification R&D will provide a crucial boost to critical basic and applied research in radiation detection to supply needed operational tools for government-wide nonproliferation, counter-proliferation and counter-terrorism objectives. For the Megaports Program within the International Nuclear Materials Protection and Cooperation (MPC&A) program, a $59 million increase will accelerate that effort to equip key ports with radiation detection equipment. MPC&A will secure weapons-use materials outside the FSU, continue its activities to protect Strategic Rocket Force sites in Russia, and deter trafficking in illicit nuclear materials. The Global Threat Reduction Initiative (GTRI), in response to clear Presidential direction and DOE initiative in March 2005, was put into place to address the global nature of the threat and to further focus resources on high value, near term risk reduction activities. Within GTRI, the

program will secure radiological materials in partner countries and the U.S against diversion for radiological dispersion devices. 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 eliminated. The FY 2006 funding will enable NNSA to maintain a schedule that allows completion of the Seversk project in 2008.

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 (U.S., 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 U.S. 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. The FY 2006 request provides $526 million toward the total U.S. commitment to the Global Partnership.

SIGNIFICANT FUNDING CHANGES – FY 2005 to 2006 Request ($ in millions)

Nonproliferation and Verification R&D (FY 2005 $224.0; FY 2006 $272.2).....+$48.2
FY 2006 request continues efforts in Proliferation Detection, Nuclear Explosion Monitoring, and Supporting Activities.

Proliferation Detection (FY 2005 $106.5; FY 2006 $152.4) .....+$45.9
Increase will provide a crucial boost to critical basic and applied research in radiation detection; and set new research in motion to significantly reduce detector size, while increasing sensitivity. This work supports the program's core nonproliferation mission, but also supports fundamental research necessary for the U.S. government's Homeland Security and Intelligence missions. As such, the program will provide significant synergy across multiple agencies and missions.

Nuclear Explosion Monitoring (FY 2005 $101.9; FY 2006 $108.6)..... +$6.7
Increase is due to a realignment of funds providing $5 million to support open competition for research for the Ground Nuclear Explosion Monitoring program and $1.7 million to continue build up for the new high-altitude monitoring payload for the Space and Atmospheric Burst Reporting System.

Supporting Activities (FY 2005 $15.5; FY 2006 $6.1) ..... -$9.4
Decrease is due to realignment of funds to support open competition for research in the Nuclear Explosion Monitoring subprogram and the completion of the conceptual design for the replacement research facilities in the Hanford Area 300 at the Pacific Northwest National Laboratory (PNNL).

300 Area Replacement Research Facility (FY 2005 $0; FY 2006 $5.0) ..... +$5.0
Increase supports the Project Engineering and Design project at PNNL. (Note that $5 million in FY 2005 congressionally-directed funding is included in Supporting Activities.)

Nonproliferation and International Security (FY 2005 $91.3; FY 2006 $80.2) ..... -$11.1
Portions of this program work were spun off in FY 2005 along with increased funding to form GTRI to consolidate similar functions, leaving the remaining portion of the program showing a decrease for FY 2006. Decreases are partially offset by an increase to International Emergency Management and Cooperation. FY 2006 request includes:

Nonproliferation Policy (FY 2005 $30.2; FY 2006 $25.3) ..... -$4.9
Decrease reflects reduced levels of policy and technical support provided to the U.S. government with respect, particularly to the Nuclear Nonproliferation Treaty, and decisions regarding other international agreements and nuclear test limitations related negotiations and meetings in Global Regimes; grants for East Asian Regional Security and reductions in Regional Security.

Export Control Operations (FY 2005 $22.3; FY 2006 $20.0) ..... -$2.3
Decrease will reduce support for the Proliferation Trade Control Directory developed for the U.S. expert control community and limit INECP engagement with transit countries in Asia such as Singapore, Thailand, and Vietnam or defer cooperation with new partners such as South Africa or Brazil.

International Safeguards (FY 2005 $31.7; FY 2006 $26.0) ..... -$2.7
Decrease reflects a reduction in effort as Additional Protocol preparations are completed, a reduction in the number of DOE sites under international inspection, realignment of some physical protection work pertaining to upgrades and the Newly Independent States (NIS)/Baltics, and international cooperation activities including suspension of analysis of International Atomic Energy Agency (IAEA) Technical Cooperation projects.

Treaties and Agreements (FY 2005 $3.2; FY 2006 $2.0)..... -$1.2
Support for emerging nonproliferation issues and development of future treaties and agreements will be reduced.

International Emergency Management and Cooperation
(FY 2005 $4.0; FY 2006 $6.8)..... +$2.8
Increase will strengthen emergency management cooperation and technical assistance with foreign partners through enhanced emergency communications, notification, networking, technologies, systems and expertise.

International Nuclear Materials Protection and Cooperation
(FY 2005 $294.6; FY 2006 $343.4) .....+$48.8

Navy Complex (FY 2005 $15.0; FY 2006 $6.5)..... -$8.5
Decrease due to the completion of upgrades at the vast majority (95 percent) of Russian Navy warhead sites in FY 2005 and the transition to sustainability activities.

Strategic Rocket Forces (FY 2005 $62.0; FY 2006 $47.5)..... -$14.5
Decrease due to accelerated completions in FY 2005 of SRF security upgrades at five sites.

Rosatom Weapons Complex (FY 2005 $88.0; FY 2006 $86.2) ..... -$1.8
Decrease reflects completion of efforts at building 101 (sections 6 and 17) at RT-1 fuel reprocessing plant at Mayak.

Civilian Nuclear Sites (FY 2005 $14.7; FY 2006 $47.3).....+$32.7
Increase is due to expansion of the program to protect weapons-usable material outside the Former Soviet Union (FSU), offset by decrease due to completion of comprehensive upgrades at FSU sites (31 of 31 sites).

Material Consolidation and Conversion (FY 2005 $30.0; FY 2006 $28.0)..... -$2.0
Decrease due to a lower projected availability of excess HEU to be downblended to LEU.

National Programs and Sustainability (FY 2005 $41.0; FY 2006 $30.0)..... -$11.0
Decrease due to acceleration of procurement of 10 new railcars in FY 2005 for Rosatom Weapons Complex.

Second Line of Defense (SLD) (FY 2005 $44.0, FY 2006 $97.9).....+$53.9
SLD, including the **Megaports Program** (FY 2005 $15.0, FY 2006 $73.9), enable detection of illicit trafficking in nuclear and radiological materials across Russian and other international borders through installation of radiation detection equipment. Increase due to the completion of radiation detection equipment installations at five additional Megaports (increasing the total number to ten), offset by a decrease in the core program due to ramp-down of radiation detection equipment installations at new sites in Russia.

Global Initiative for Proliferation Prevention (FY 2005 $40.7; FY 2006 $37.9)..... -$2.8
Decrease is due to the phase-out of work in Snezhinsk during FY 2005 and draw down in Sarov as nonproliferation objectives are met in those cities. FY 2006 activities include workforce transition initiatives in concert with the Elimination of Weapons Grade Plutonium Production (EWGPP) program to accelerate shutdown of the operating reactors in Seversk and Zheleznogorsk.

HEU Transparency Implementation (FY 2005 $20.8; FY 2006 $20.5)..... -$0.3
Decrease reflects the completion of the installation of the Blend Down Monitoring System (BDMS) at a third Russian site.

Elimination of Weapons-Grade Plutonium Production
(FY 2005 $44.0; FY 2006 $132.0).....+$88.0
Increase due to ramp up of activities in Seversk construction activities to meet FY 2008 completion date for plutonium production reactor shutdown.

Fissile Materials Disposition (FY 2005 $613.1; FY 2006 $653.1).....+$40.0
Funding 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 U.S. uranium disposition program.

U.S. Surplus Fissile Materials Disposition
(FY 2005 $549.5; FY 2006 $589.1).....+$39.6
Overall increase reflects increase in O&M partially offset by a decrease in construction activities, as follows:

Operation and Maintenance (FY 2005 $152.4; FY 2006 $226.5).....+$74.1
Funding primarily reflects increases in U.S. Uranium Disposition (FY 2005 $85.5; FY 2006 $103.0) for additional work scope; and in U.S. Plutonium Disposition both in Reactor Technologies activities related to construction of the U.S. MOX Fuel Fabrication Facility; and Pit Disassembly and Conversion activities including the pit disassembly demonstration program at Los Alamos.

Construction (FY 2005 $397.1; FY 2006 $362.6) ..... -$34.5
Decreased funding in the U.S. MOX Fuel Fabrication Facility (FFF) (FY 2005 $365.1; FY 2006 $338.6) at the Savannah River Site, South Carolina, is due to the restructuring of the construction schedule for the U.S. MOX facility based on delays due to construction delays caused by the liability issue with Russia and on level-funding the fissile materials disposition budget in the outyears. Decreased funding for the Pit Disassembly and Conversion Facility (PDCF) (FY 2005 $32.0; FY 2006 $24.0) reflects similar schedule delays as described for the MOX facility.

Russian Plutonium Disposition (FY 2005 $63.5; FY 2006 $64.0)..... +$0.5
In FY 2006, level funding supports development of design documentation required for licensing of the Russian MOX facility and the beginning of construction.

Global Threat Reduction Initiative (FY 2005 $93.8; FY 2006 $98.0)..... +$4.2
Increase is to accelerate high value near term threat reduction components of this work in keeping with Presidential direction and associated DOE initiatives.

Reduced Enrichment for Research and Test Reactors (RERTR)
(FY 2005 $18.8; FY 2006 $24.7)..... +$5.9
Increase is due to the accelerated development of LEU replacement fuel for HEU-fueled research reactors and for purchase of LEU core-loads to provide incentives for the implementation of reactor conversion packages.

Russian Research Reactor Fuel Return (RRRFR)
(FY 2005 $15.2; FY 2006 $14.7)..... -$0.5
Decrease is due to efficiencies gained in the acceleration of RRRFR by procuring additional high capacity spent fuel casks for shipment of Russian-origin spent fuel to Russia; and introducing air shipment spent fuel operations.

Kazakhstan Spent Fuel (FY 2005 $2.0; FY 2006 $8.0) ..... +$6.0
Increase enables the program to accelerate the completion of storage of material by two years from 2011 to 2009.

HEU Research Reactor Fuel Purchase (FY 2005 $9.9; FY 2006 $0.0)..... -$9.9
Decrease reflects delays in reaching agreement with Russia on price and transportation of HEU and delivery of initial material purchased.

U.S. Foreign Research Reactor Spent Nuclear Fuel (FRRSNF)
(FY 2005 $4.5; FY 2006 $8.7)..... +$4.2
Increase reflects the estimated cost of returning 359 spent fuel assemblies, funding of base program operations, and funding for other than-high-income shipments.

U.S. Radiological Threat Reduction (FY 2005 $7.5; FY 2006 $12.8) ..... +$5.3
Increase reflects an increase in program scope to include up to ten isotopes of concern. Program assesses recovery risks and needs and develops the necessary infrastructure for recovery. Program is funded to respond to emerging critical national security recovery actions identified by other agencies, and to integrate U.S. Radiological Threat Reduction efforts with International Radiological Threat Reduction efforts for global coverage. FY 2006 funding also supports technical assistance, in cooperation with other federal agencies, for security enhancements to in-use high risk sources.

International Radiological Threat Reduction
(FY 2005 $24.8; FY 2006 $24.1) ..... -$0.7
Decrease is due to lower cost to complete the installation of equipment to secure radiological materials at an additional 50 IRTR sites.

Emerging Threats (FY 2005 $11.0; FY 2006 $5.0) ..... -$6.0
A significant portion of FY 2005 funding was to accomplish advanced planning for the removal of nuclear weapons-usable material from several vulnerable sites around the world. FY 2006 funding level is sufficient to sustain ongoing planning in support of these efforts to identify, recover and dispose of high-risk, vulnerable nuclear and other radiological material that are not addressed by other programs.

Office of the Administrator – NNSA

(discretionary dollars in thousands)

	FY 2004 Comparable Approp	FY 2005 Comparable Approp	FY 2006 Request to Congress	FY 2006 vs. FY 2005	
Office Of The Administrator					
Office of the administrator	352,954	357,051	350,765	-6,286	-1.8%
Use of prior year balances and other adjustments	-5	——	-6,896	-6,896	n/a
Total, Office Of The Administrator	**352,949**	**357,051**	**343,869**	**-13,182**	**-3.7%**

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 DOE's Under Secretary for Nuclear Security. The workforce is comprised of a highly educated and skilled cadre of federal managers overseeing the operations of the defense mission activities and performing many specialized duties including leading emergency response teams and safeguards and security oversight. The Naval Reactors, Secure Transportation Asset, and Environmental Projects and Operations 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 to the site offices.

PROGRAM HIGHLIGHTS

The NNSA supports the **President's Management Agenda** by creating a more robust and effective NNSA organization. The FY 2006 request reflects the completion the NNSA re-engineering initiative which streamlined support for corporate management and oversight of the nuclear weapons and nonproliferation programs. Re-engineering resulted in an annual cost avoidance of over $40 million realized by the reduction of NNSA federal staffing levels.

SIGNIFICANT FUNDING CHANGES – FY 2005 to 2006 Request ($ in millions)

Office of the Administrator (FY 2005 $357.1; FY 2006 $343.9)..... -$13.2
FY 2006 request decreased by 3.7 percent, which is consistent with the NNSA strategic goals. Decrease is related primarily to the new program for Historically Black Colleges and Universities (HBCU) initiated by Congress in FY 2005. Funding is sufficient to support the HBCU initiative through FY 2006.

Naval Reactors

(discretionary dollars in thousands)

	FY 2004 Comparable Approp	FY 2005 Comparable Approp	FY 2006 Request to Congress	FY 2006 vs. FY 2005	
Naval Reactors					
Naval reactors development	737,326	772,173	755,700	-16,473	-2.1%
Program direction	26,552	29,264	30,300	1,036	+3.5%
Subtotal, Naval Reactors	763,878	801,437	786,000	-15,437	-1.9%
Use of prior year balances and other adjustments	-2,006	———	———	———	———
Total, Naval Reactors	**761,872**	**801,437**	**786,000**	**-15,437**	**-1.9%**

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 2006 request provides $786 million for Naval Reactors; a decrease of $15.4 million below the FY 2005 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 2005 to 2006 Request ($ in millions)

Naval Reactors Development (FY 2005 $772.2; FY 2006 $755.7) ..... -$16.5
Decrease in Operations and Maintenance is partially offset by increases in construction funding, as follows:

Operations and Maintenance (FY 2005 $765.0; FY 2006 $738.8)..... -$26.2
Decreases in Plant Technology, Reactor Technology and Analysis, Materials Development and Verification, and Facility Operations; partially offset by an increase in Evaluation and Servicing, as follows:

Plant Technology (FY 2005 $154.3; FY 2006 $143.8) ..... -$10.5
Decrease reflects a reduction in steam generator design efforts for Transformational Technology Core (TTC) and reduced work on high performance thermo photovoltaic (TPV) power conversion.

Reactor Technology and Analysis (FY 2005 $230.2; FY 2006 $213.9). -$16.3
Decrease reflects reduced development efforts for the core design in the CVN-21 follow ship, a reduction in TTC Fuel manufacturing development, and reduced initial development of integrated TPV systems.

Evaluation and Servicing (FY 2005 $172.9; FY 2006 $183.4) .....+$10.5
Increase to revitalize remediation efforts at program facilities including major efforts at the L-Building at Bettis Atomic Power Laboratory and S3G at the Kesselring site.

Materials Development and Verification
(FY 2005 $154.3; FY 2006 $145.1) ..... -$9.1
Reflects congressionally-directed increse for the Advanced Test Reactor in FY 2005 and reduced evaluation of performance data on materials for TPV devices.

Facility Operations (FY 2005 $53.4; FY 2006 $52.6) ..... -$0.8
Decrease reflects efficiencies achieved in operations.

Construction (FY 2005 $7.1; FY 2006 $16.9)..... +$9.8
Reflects increased funding of Central Office Building #2, West Mifflin, Pennsylvania (+$7.0); and funding for the Materials Development Facility Building, Schenectady, New York (+$3.8); partially offset by a decrease in the Expended Core Facility Dry Cell, NRF, Idaho (-$1.0).

Program Direction (FY 2005 $29.3; FY 2006 $30.3)..... +$1.0
Reflects salary increases for inflation and achievement of the FTE target.

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.

(discretionary dollars in thousands)

	FY 2004 Comparable Approp	FY 2005 Comparable Approp	FY 2006 Request to Congress	FY 2006 vs. FY 2005	
Energy Security					
Energy Efficiency and Renewable Energy	1,220,262	1,248,582	1,200,414	-48,168	-3.9%
Electric Transmission and Distribution	101,116	118,615	95,604	-23,011	-19.4%
Fossil Energy	790,863	640,244	759,956	+119,712	+18.7%
Nuclear Energy, Science and Technoloby	402,804	485,631	510,776	+25,145	+5.2%
Energy Information Administration	81,100	83,819	85,926	+2,107	+2.5%
Power Marketing Administrations	212,999	208,794	57,123	-151,671	-72.6%
Colorado River Basins	1,458	-23,000	-23,000	——	——
Total, Energy Security	**2,810,602**	**2,762,685**	**2,686,799**	**-75,886**	**-2.7%**

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

Energy Efficiency and Renewable Energy

(discretionary dollars in thousands)

	FY 2004 Comparable Approp	FY 2005 Comparable Approp	FY 2006 Request to Congress	FY 2006 vs. FY 2005	
Energy Efficiency And Renewable Energy					
Energy Efficiency and Renewable Energy	352,295	380,348	353,642	-26,706	-7.0%
Energy Conservation	867,967	868,234	846,772	-21,462	-2.5%
Total, Energy Efficiency And Renewable Energy	**1,220,262**	**1,248,582**	**1,200,414**	**-48,168**	**-3.9%**

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 2004 Comparable Approp	FY 2005 Comparable Approp	FY 2006 Request to Congress	FY 2006 vs. FY 2005	
Energy Efficiency And Renewable Energy					
Energy Supply					
Energy Efficiency and Renewable Energy					
Hydrogen technology	80,412	94,006	99,094	+5,088	+5.4%
Solar energy	80,731	85,074	83,953	-1,121	-1.3%
Wind energy	39,803	40,804	44,249	+3,445	+8.4%
Hydropower	4,673	4,862	500	-4,362	-89.7%
Geothermal technology	24,625	25,270	23,299	-1,971	-7.8%
Biomass and biorefinery systems R&D	84,608	80,846	50,359	-30,487	-37.7%
Intergovernmental activities	14,673	16,776	11,910	-4,866	-29.0%
Departmental energy management program	1,963	1,951	2,019	+68	+3.5%
Renewable program support	8,493	5,954	2,901	-3,053	-51.3%
Facilities and infrastructure	12,950	11,389	16,315	+4,926	+43.3%
Program direction	16,490	19,064	19,043	-21	-0.1%
Subtotal, Energy Efficiency and Renewable Energy	369,421	385,996	353,642	-32,354	-8.4%
Use of prior year balances and other adjustments	-17,126	-5,648	——	+5,648	+100.0%
Total, Energy Efficiency and Renewable Energy	**352,295**	**380,348**	**353,642**	**-26,706**	**-7.0%**

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 2006 **Hydrogen Technology** program requests increased funding for technology development. This increase is consistent with the $1.2 billion commitment over 5 years made by President Bush when he announced the Hydrogen Fuel Initiative to reverse America's growing dependence on foreign oil. The President's **Hydrogen Fuel Initiative accelerates** research and development of hydrogen fuel cells and hydrogen production, storage, distribution and infrastructure technologies. The Hydrogen Fuel Initiative complements the Department's **FreedomCAR** activities under the Energy Conservation budget request, which aim to develop hybrid vehicle technologies needed to enable the mass production of affordable, practical hydrogen powered fuel cell vehicles. Together, the Hydrogen Fuel Initiative and FreedomCAR will, through partnerships with the private sector, overcome key technical and economic barriers to facilitate a fuel cell vehicle and hydrogen infrastructure commercialization decision by industry in the year 2015. A positive commercialization decision in 2015 could lead to market introduction of hydrogen fuel cell vehicles by 2020 and significant oil displacement in later years. When FreedomCAR hybrid technologies are included, the Administration has pledged a total of $1.7 billion over 5 years (FY 2004-2008) to help bring hydrogen fuel cell vehicles from the laboratory to the showroom. The activities are led by EE and include: research and development of hydrogen production from renewable resources, as well as hydrogen delivery and storage, in EE; basic hydrogen research in the Office of Science; coal-based hydrogen production research in the Office of Fossil Energy; nuclear-based hydrogen production research in the Office of Nuclear Energy, Science and Technology; and hydrogen safety-related activities in the U.S. Department of Transportation.

The **Solar Energy Technologies** 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 electricity, heat (for water heating) and hybrid lighting. The program focuses its activities in the areas of photovoltaic systems, concentrating solar power, and heating and lighting technologies.

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 **Geothermal Technology** program conducts research, development and deployment of 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 advanced energy conversion technology.

The **Biomass and Biorefinery Systems R&D** program focuses on two major areas: (1) Platforms R&D, to reduce the cost of outputs and byproducts from biochemical and thermochemical processes; and (2) Utilization of Platform Outputs, to develop technologies and processes that co-produce liquid and gaseous fuels, chemicals and materials, and/or 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 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 program also provides incentive payments to qualifying facilities for the production of renewable energy.

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 **Facilities and Infrastructure** activity supports capital investments to support a world-class research and development program at the National Renewable Energy Lab (NREL). Groundbreaking took place at NREL in FY 2004 for a new Science and Technology Facility that will be used to develop lower-cost photovoltaic materials.

(discretionary dollars in thousands)

	FY 2004 Comparable Approp	FY 2005 Comparable Approp	FY 2006 Request to Congress	FY 2006 vs. FY 2005	
Energy Conservation					
Vehicle technologies	172,395	165,409	165,943	+534	+0.3%
Fuel cell technologies	63,782	74,944	83,600	+8,656	+11.5%
Weatherization & intergovernmental activities	307,932	309,005	298,157	-10,848	-3.5%
Distributed energy resources	59,684	60,416	56,629	-3,787	-6.3%
Building technologies	57,799	65,464	57,966	-7,498	-11.5%
Industrial technologies	90,450	74,801	56,489	-18,312	-24.5%
Biomass and biorefinery systems R&D	6,966	7,253	21,805	+14,552	+200.6%
Federal energy management program	19,420	17,931	17,147	-784	-4.4%
Program management	92,362	93,011	89,036	-3,975	-4.3%
Subtotal, Energy Conservation	870,790	868,234	846,772	-21,462	-2.5%
Use of prior year balances and other adjustments	-2,823	——	——	——	——
Total, Energy Conservation	**867,967**	**868,234**	**846,772**	**-21,462**	**-2.5%**

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 Vehicle Technologies program funds research on technologies such as advanced lightweight materials, advanced batteries, improved power electronics, electric motors, and advanced combustion engines to enable light and heavy-duty highway transportation to become dramatically more efficient. The **Fuel Cell Technologies** program supports both the **President's Hydrogen Fuel Initiative** and **FreedomCAR**. The Fuel Cell Technologies program conducts polymer fuel cell component and system research for stationary and transportation applications, and fuel cell vehicle technology validation.

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 for low-income households. The **State Energy Program** supports energy efficiency projects in states and communities through formula grants.

The **Distributed Energy Resources** program performs research and development to advance an array of energy efficient technology choices that produce electricity on-site, make productive use of wasted thermal energy, and strengthen the energy infrastructure.

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 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 at federal facilities 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 2006 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 of $99.1 million includes a funding increase of $5.1 million to support the President's **Hydrogen Fuel Initiative**. The additional funding will go towards renewable hydrogen production technologies.

Funding for **Biomass and Biorefinery Systems R&D** activities in FY 2006 ($50.4 million) is reduced by $30.5 million, relative to the FY 2005 appropriated level, which includes $35.3 million in congressionally-directed projects. The FY 2006 request reflects the program focus on priority platform and utilization R&D. Bio-based products technologies will be de-emphasized because this type of activity better aligns with Interior and Related Agencies appropriation; a funding increase is requested within that appropriation in the Energy Conservation account. 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.

Since **Hydropower** technology research has advanced to the stage that it is now adoptable by industry, the Department plans to effect closeout of the Hydropower program in FY 2006, transferring results of its turbine research and development to industry. This closeout decision was based upon a review of EERE program funding priorities, which include a broad spectrum of considerations such as nearness to commercialization, prevalence of market barriers, and potential benefits relative to other options within the EERE portfolio.

Energy Conservation

The Building Technologies request of $58.0 million includes $11.0 million to develop **Solid State Lighting** technologies for general illumination that could achieve improved efficiency, durability, and levelized cost compared with conventional lighting technologies.

The FY 2006 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 24 percent relative to FY 2005. 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-percent decrease in energy intensity by the participating industries.

Within **Biomass and Biorefinery Systems R&D**, funding for bio-based products technologies will be $21.8 million, an increase of 201 percent relative to FY 2005. The funding requested will increase the probability of success of future biorefineries in view of the higher market value of such co-products in comparison with the main output such as fuels and power.

SIGNIFICANT FUNDING CHANGES – FY 2005 to 2006 Request ($ in millions)

Energy Supply

Hydrogen Research (FY 2005 $94.0; FY 2006 $99.1) .....+$5.1
Funding supports the President's Hydrogen Fuel Initiative. While the increase in funding compared to the FY 2005 appropriations is primarily for renewable hydrogen production technologies, there are many funding changes to key activities and congressionally-directed projects. No funds are requested to continue congressionally-directed activities (-$37.3). Increase supports the program's plans in: hydrogen production (+$17.9) to accelerate electrolysis technology development and renewable-based thermochemical, solar and biological hydrogen production; storage (+$6.2) on advanced metal hydrides, chemical hydrides, carbon-based materials and new concepts; infrastructure validation (+$5.5) to conduct "learning demonstrations" with energy industry partners to help refocus research efforts and to validate current hydrogen production and delivery efficiency and cost; safety, codes and standards (+$7.2) to implement a comprehensive safety research and evaluation program; education (+$1.9) to support the President's National Energy Policy recommendation to communicate the benefits of alternative energy, including hydrogen; and systems analysis (+$3.7) to expand systems analyses of hydrogen pathways and transition scenarios and to assess energy, environmental and economic impacts of hydrogen energy systems. Increases are consistent with the Department's integrated efforts described in the Hydrogen Posture Plan.

Hydropower(FY 2005 $4.8; FY 2006 $0.5)……-$4.3
Since Hydropower technology research has advanced to the stage that it is now adoptable by industry, the Department plans to effect closeout of the Hydropower Program in FY 2006, transferring results of its turbine research and development and water management techniques to industry. Remaining funds in Technology Viability ($0.15) and Technology Application ($0.35) will be used to finish closeout activities.

Biomass and Biorefinery Systems R&D (FY 2005 $80.8; FY 2006 $50.4).....-$30.4
Decrease reflects reduced emphasis on bio-based products technologies and their integration into biorefineries, phase-out of state/regional partnerships, and discontinuation of congressionally directed activities while increasing activities that will reduce the cost of producing biomass-derived synthesis gas and sugars.

Facilities and Infrastructure (FY 2005 $11.4; FY 2006 $16.3) .....+$4.9
Net change reflects an increase in Plant and Capital Equipment upgrades and replacements (+1.0); no request for continued funding for the congressionally-directed (in FY 2005) National Center on Energy Management and Building Technologies (-1.0); and an increase in funds to complete construction of the Science and Technology Facility at NREL (+3.9).

Energy Conservation

Fuel Cell Technologies (FY 2005 $74.9; FY 2006 $83.6) ..... +$8.7
Funding supports the **Hydrogen Fuel Initiative and FreedomCAR**. Increase supports Technology Validation activities (+$6.3) to evaluate fuel cell performance and durability under real world conditions; research to reduce costs and improve performance (including durability) of critical Stack Components (+$1.5), Distributed Energy Systems (+$0.6), Transportation Systems (+$0.1) and Fuel Processors (+$0.2).

Distributed Energy Resources (FY 2005 $60.4; FY 2006 $56.6) ..... -$3.8
Reduces funding for activities that are within industry's capabilities.

Building Technologies (FY 2005 $65.5; FY 2006 $58.0).....-$7.5
In FY 2006 an increase (+$1.5) in Residential Buildings Integration R&D will allow development of more 40-70 percent higher efficiency building design prototype systems. A decrease (-$1.9) in Space Conditioning and Refrigeration R&D reflects emphasis on high risk longer term projects, and a refocusing on better integration with residential and commercial activities. A reduction (-$2.8) in Thermal Insulation and Buildings Materials suspends thermal insulation due to the advanced state of technologies, which are being demonstrated in the Residential Integration sub-program. Equipment Standards and Analysis has a reduction (-$1.9) due to decreased funding requirements.

Industrial Technologies (FY 2005 $74.8; FY 2006 $56.5) ..... -$18.3
During FY 2006, 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.

Biomass and Biorefinery Systems R&D (FY 2005 $7.2 FY 2006 $21.8)…….....+$14.6
Increase reflects acceleration of cost-shared research on bio-based products technologies and their integration into biorefineries aimed at improving the effectiveness, efficiency, and economic viability of biorefineries.

Program Management (FY 2005 $93.0; FY 2006 $89.0)……-$4.0
Provides an increase in Program Direction (+$3.3) primarily to address cost increases to Salaries and Benefits, offset by discontinuing requests for the congressionally-directed (in FY 2005) Cooperative Program with States (-$3.9) and the Energy and Research Consortium of the Western Carolinas (-$2.9), as well as completing work with the National Academy of Science Review (-$0.5).

Electric Transmission and Distribution

(discretionary dollars in thousands)

	FY 2004 Comparable Approp	FY 2005 Comparable Approp	FY 2006 Request to Congress	FY 2006 vs. FY 2005	
Office Of Electric Transmission And Distribution					
Energy Supply					
Research and development					
High temperature superconductivity R&D	37,150	54,562	45,000	-9,562	-17.5%
Transmission reliability R&D	11,431	15,600	9,220	-6,380	-40.9%
Electricity distribution transformation R&D	13,464	5,418	4,037	-1,381	-25.5%
Energy storage R&D	8,763	3,969	3,000	-969	-24.4%
Gridwise	691	6,448	5,500	-948	-14.7%
Gridworks	——	5,456	5,000	-456	-8.4%
Total, Research and development	71,499	91,453	71,757	-19,696	-21.5%
Electricity restructuring	19,351	19,842	12,400	-7,442	-37.5%
Program direction	9,627	8,135	11,447	+3,312	+40.7%
Construction	736	769	——	-769	-100.0%
Subtotal, Electric transmission and distribution	101,213	120,199	95,604	-24,595	-20.5%
Use of prior year balances and other adjustments	-97	-1,584	——	+1,584	+100.0%
Total, Electric Transmission and Distribution	**101,116**	**118,615**	**95,604**	**-23,011**	**-19.4%**

PROGRAM DESCRIPTION

The **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 subprograms: **Research and Development** and **Electricity Restructuring.**

The **Research and Development s**ubprogram has the following activities:

High Temperature Superconductivity R&D benefits include providing the unique efficiency and capacity advantages of superconductivity to the national effort to modernize and expand America's electricity delivery system. Fully operational, pre-commercial prototypes of electric power equipment, which incorporate HTS wires, are under development that will generate only half the energy losses with half the size of conventional power units.

Transmission Reliability R&D supports modernization of the nation's transmission infrastructure through information technologies that provide enhanced grid reliability and efficient electricity markets under competition. The program is currently leading the effort to deploy a real-time monitoring capability in the nation's Eastern Interconnect that will help guard against future blackouts.

Electricity Distribution Transformation R&D transforms today's electric distribution infrastructure into an adaptive power network that is reliable in power delivery, responsive in customer needs, and secure and resilient against power disturbance events.

Energy Storage R&D includes research in advanced electrical energy storage systems aimed at increasing the reliability of the electric grid.

GridWise brings 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 allow customers to control their power use enabling more effective use of electric system assets, optimize grid operations, and provide cost-effective high quality service.

GridWorks focuses on bridging the gap between laboratory prototypes and the application needs of the electric industry. GridWorks funds efforts in three major areas cables and conductors, substation and auxiliary equipment, and power electronics.

The **Electricity Restructuring subprogram** includes Electric Markets Technical Assistance and Energy Security and Assurance.

Electric Markets Technical Assistance helps states, regional electric grid operators, and federal agencies develop policies, market mechanisms, regulations, state laws, and programs that facilitate ETD's mission to modernize and expand America's electric grid to ensure a more reliable and robust electric supply.

Energy Security and Assurance will engender an immediate benefit that will increase the security, reliability and resiliency of the U.S. energy infrastructures.

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 2006 budget request is $95.6 million for ETD activities, a decrease of $23.0 million (19.4 percent) from the FY 2005 comparable appropriation. The FY 2006 budget request focuses activities towards long-term, high-risk activities that the private sector is less likely to undertake without federal support.

SIGNIFICANT FUNDING CHANGES – FY 2005 to 2006 Request ($ in millions)

High Temperature Superconductivity R&D (FY 2005 $54.6; FY 2006 $45.0)..... -$9.6
Reflects an increase in Superconductivity Partnerships, Second Generation Wire Development and Strategic Research (+$5.3) and no request for congressionally-directed activities from FY 2005 (-$14.9).

Transmission Reliability (FY 2005 $15.6; FY 2006 $9.2)..... -$6.4
Reflects an increase in Real Time Grid Reliability Management and Reliability and Markets (+$4.3) and no request for congressionally-directed activities from FY 2005 (-$10.7).

Electric Distribution Transformation R&D (FY 2005 $5.4; FY 2006 $4.0)..... -$1.4
Reflects an increase for Peak Load Reduction (+$1.2) and no request for congressionally-directed activities from FY 2005 (-$2.6).

Energy Storage R&D (FY 2005 $4.0; FY 2006 $3.0)..... -$1.0
Increase for technical management and monitoring of highly leveraged joint energy projects with New York and California (+$1.0) and no request for congressionally-directed activities from FY 2005 (-$2.0).

GridWise (FY 2005 $6.4; FY 2006 $5.5)..... -$0.9
Increase supports real-time monitors for detection and anticipation of distribution line faults to reduce electric power system outage vulnerabilities (+$2.0) and no request for congressionally-directed activities from FY 2005 (-$3.0).

GridWorks (FY 2005 $5.5; FY 2006 $5.0) ..... -$0.5
Increase supports research in the areas of cable and conductors, substation and auxiliary equipment, and power electronics (+$1.5) and no request for congressionally-directed activities from FY 2005 (-$2.0).

Electricity Restructuring (FY 2005 $19.8; FY 2006 $12.4)..... -$7.4
Increase of $1.4 provides technical assistance to states and regions on policies and regulations to support investments in electric grid reliability and grid reliability and grid modernization. Increase of $7.4 for the Energy Security and Assurance activity, which was a separate office that merged into ETD in FY 2005. Energy Assurance assists states with energy security activities and energy disruption plans. This activity also provides guidelines and tools to help states perform vulnerability assessments. Energy Assurance operates/expands the Energy Emergency Assurance Coordinators system, a communication protocol for state- and local-level energy personnel and DOE. Increases are offset by no request for congressionally-directed projects from FY 2005 (-$16.2).

Program Direction (FY 2005 $8.1; FY 2006 $11.5) ..... +$3.4
Program increase funds 49 FTE, an increase of 3 FTE over FY 2005, and provides for executive management, program oversight, analysis, and information required for the effective implementation of ETD's mission.

Energy Reliability and Efficiency Laboratory (FY 2005 $0.8M; FY 2006 $0)..... -$0.8
Preliminary design work for this facility will continue in FY 2005. Start of construction has been postponed until FY 2007 due to funding of higher priority activities.

Use of Prior-Year Balances (FY 2005 -$1.6; FY 2006 $0)..... +$1.6
FY 2006 request does not include the use of prior-year balances.

Fossil Energy

(discretionary dollars in thousands)

	FY 2004 Comparable Approp	FY 2005 Comparable Approp	FY 2006 Request to Congress	FY 2006 vs. FY 2005	
Fossil Energy					
Fossil Energy Research and Development	658,981	571,854	491,456	-80,398	-14.1%
Clean Coal Technology	-98,000	-160,000	——	+160,000	+100.0%
Naval Petroleum & Oil Shale Reserves	17,995	17,750	18,500	+750	+4.2%
Elk Hills School Lands Fund	36,000	36,000	84,000	+48,000	+133.3%
SPR - Facilities development	170,948	169,710	166,000	-3,710	-2.2%
Northeast Home heating oil reserve	4,939	4,930	——	-4,930	-100.0%
Total, Fossil Energy	**790,863**	**640,244**	**759,956**	**119,712**	**+18.7%**

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

PROGRAM DESCRIPTION

(discretionary dollars in thousands)

	FY 2004 Comparable Approp	FY 2005 Comparable Approp	FY 2006 Request to Congress	FY 2006 vs. FY 2005	
Fossil Energy Research and Development					
Coal and other power systems					
President's Coal Research Initiative	368,835	272,758	286,000	+13,242	+4.9%
Other power systems	70,222	78,372	65,000	-13,372	-17.1%
Total, Coal and other power systems	439,057	351,130	351,000	-130	-0.0%
Natural gas technologies	41,836	44,839	10,000	-34,839	-77.7%
Petroleum - Oil technology	34,107	33,921	10,000	-23,921	-70.5%
Cooperative research and development	8,161	8,283	3,000	-5,283	-63.8%
Fossil energy environmental restoration	9,595	9,467	8,060	-1,407	-14.9%
Import/export authorization	2,716	1,774	1,799	+25	+1.4%
Program direction and management support					
Headquarters program direction	22,189	22,433	20,344	-2,089	-9.3%
Energy technology center program direction	69,221	68,289	64,605	-3,684	-5.4%
Clean coal program direction	14,815	13,806	13,992	+186	+1.3%
Total, Program direction and management support	106,225	104,528	98,941	-5,587	-5.3%
GP-F-100 General plant projects	6,914	6,902	——	-6,902	-100.0%
Advanced metallurgical processes	9,876	9,861	8,000	-1,861	-18.9%
Special recruitment programs	——	656	656	——	——
National academy of sciences program review	494	493	——	-493	-100.0%
Total, Fossil Energy Research and Development	**658,981**	**571,854**	**491,456**	**-80,398**	**-14.1%**

Fossil Research and Development

The **Fossil Energy Research and Development** program goal is to ensure that economic benefits of moderately priced power generation from fossil fuels 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 create public benefits by enhancing U.S. economic, environmental, and energy security by: (1) managing and performing energy-related research that reduces market barriers to the reliable, efficient, and environmentally sound use of fossil fuels for power generation and conversion to other fuels such as hydrogen; (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.

Coal and Other Power Systems is comprised of the **President's Coal Research Initiative** (which includes the **Clean Coal Power Initiative/FutureGen** and the coal research and development program) and Other Power Systems (primarily fuel cells for distributed generation of electricity). The following table shows funding levels for the activities in the Coal and Other Power Systems programs:

(dollars in thousands)

	FY 2004 Comparable	FY 2005 Comparable	FY2006 Request
Clean Coal Power Initiative/FutureGen	173,811	67,055	68,000
Coal Research and Development	195,024	205,703	218,000
Subtotal, Coal Research Initiative	**368,835**	**272,758**	**286,000**
Other Power Systems	70,222	78,372	65,000
Total, Coal and Other Power Systems	**439,057**	**351,130**	**351,000**

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 **FutureGen** project, which is part of the CCPI will establish the capability and feasibility of co-producing electricity and hydrogen from coal with essentially zero emissions, including those from carbon (carbon sequestration is an integral component of the project). The FutureGen project will employ a public/private partnership to demonstrate technology ultimately leading to zero emission plants (including carbon) that are fuel-flexible and capable of multi-product output and electrical efficiencies over 60 percent, with coal, biomass, or petroleum coke. The project could help retain the strategic value of coal – our most abundant and lowest cost domestic energy resource. The clean coal R&D effort will focus on all the key technologies needed for FutureGen – 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. In addition, $257 million of prior-year Clean Coal funds will be made available to continue the FutureGen project.

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 continue to develop technologies for gas stream purification to meet quality requirements for use with fuel cells and conversion processes, enhance process efficiency, and reduce 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 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 developing capture and separation technologies that dramatically lower the costs and energy requirements for reducing carbon dioxide emissions from fossil fuel process treatment.

The program goal is to research and develop 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 production from coal feedstocks as part of the President's Hydrogen Fuel Initiative and in support of the FutureGen project.

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 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** activities, which focus on fuel cell research and development. 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 air pollutant emissions. The Solid-State Electricity Conversion Alliance (SECA) is DOE'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. Novel Generation had previously been in Other Power Systems, but its activities are now covered under the Turbines program.

The FY 2006 budget proposes to terminate the **Petroleum – Oil Technology** and **Natural Gas Technologies** research and development programs and provides $20 million for orderly closeout of the programs.

(discretionary dollars in thousands)

	FY 2004 Comparable Approp	FY 2005 Comparable Approp	FY 2006 Request to Congress	FY 2006 vs. FY 2005	
Clean Coal Technology					
Advance appropriation	87,000	97,000	257,000	+160,000	+164.9%
Rescission	-88,000	——	-257,000	-257,000	n/a
Deferral	-97,000	-257,000	——	+257,000	+100.0%
Total, Clean Coal Technology	**-98,000**	**-160,000**	**——**	**+160,000**	**+100.0%**

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 (including 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.

Thirty-two of thirty-five projects in the program have successfully concluded. The three ongoing projects include the KY Pioneer IGCC project, the Coal Diesel project, and the JEA fluidized-bed project. The three ongoing projects demonstrate advanced electric power generating systems that offer significant performance improvements over traditional, coal-based power generation systems. For FY 2006, DOE proposes to cancel the $257 million deferral from 2005 and redirect these funds to the Fossil Energy R&D program in FY 2007 for work on the FutureGen project, which fulfills a similar role of demonstrating advanced coal-based technologies.

(discretionary dollars in thousands)

	FY 2004 Comparable Approp	FY 2005 Comparable Approp	FY 2006 Request to Congress	FY 2006 vs. FY 2005	
Elk Hills School Lands Fund					
California teachers' pension fund payment	——	——	48,000	+48,000	n/a
Advance appropriation for previous years	36,000	36,000	36,000	——	——
Total, Elk Hills School Lands Fund	**36,000**	**36,000**	**84,000**	**+48,000**	**+133.3%**

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. No appropriation was provided in FY 2000, but the FY 2000 Interior and Related Agencies Appropriations Act provided an advanced appropriation of $36 million which was paid in FY 2001 (second installment). The third through sixth installments of $36 million were paid at the beginning of FY 2002, 2003, 2004, and 2005 respectively. The FY 2005 Appropriation contained an advance appropriation for an installment payable on October 1, 2005. The FY 2006 President's budget requests an additional $48 million in new budget authority. In light of the delays in equity finalization, DOE consulted with the State of California in FY 2004 to discuss future payments. This discussion is ongoing.

(discretionary dollars in thousands)

	FY 2004 Comparable Approp	FY 2005 Comparable Approp	FY 2006 Request to Congress	FY 2006 vs. FY 2005	
Strategic Petroleum Reserve					
SPR - Facilities development.....	**170,948**	**169,710**	**166,000**	**-3,710**	**-2.2%**

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 drawdown at a sustained rate of 4.4 million barrels per day for 90 days within 13-15 days of Presidential notification. Funding in FY 2006 allows the SPR to maintain this continual readiness posture through a comprehensive program of systems maintenance, exercises, and tests.

At the end of FY 2004, the Reserve's inventory was 670 million barrels. The inventory will increase to 690 million barrels in FY 2005 and reach 700 million barrels at the end of calendar year 2005. An inventory of 700 million barrels will provide 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. Funding was not required for Royalty Oil expenses in FY 2006 due to contractual changes making transportation charges for Royalty-in-Kind fill the responsibility of the contractors.

(discretionary dollars in thousands)

	FY 2004 Comparable Approp	FY 2005 Comparable Approp	FY 2006 Request to Congress	FY 2006 vs. FY 2005	
Northeast Home Heating Oil Reserve					
Northeast Home heating oil reserve.....	4,939	4,930	5,325	+395	+8.0%
Use of prior year balances and other adjustments.....	——	——	-5,325	-5,325	n/a
Total, Northeast Home Heating Oil Reserve.....	**4,939**	**4,930**	**——**	**-4,930**	**-100.0%**

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. The 2-million-barrel reserve protects the northeast against a supply 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, the Secretary of Energy 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. The continued operation and readiness of the Home Heating Oil Reserve in FY 2006 will be continued utilizing carryover balances.

(discretionary dollars in thousands)

	FY 2004 Comparable Approp	FY 2005 Comparable Approp	FY 2006 Request to Congress	FY 2006 vs. FY 2005	
Naval Petroleum & Oil Shale Reserves					
Production operations	11,199	8,555	10,211	+1,656	+19.4%
Management	9,893	9,195	8,289	-906	-9.9%
Subtotal, Naval petroleum & oil shale reserves	21,092	17,750	18,500	+750	+4.2%
Use of prior year balances	-3,097	———	———	———	———
Total, Naval Petroleum & Oil Shale Reserves	**17,995**	**17,750**	**18,500**	**+750**	**+4.2%**

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) in a manner designed 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. The NPOSR mission has evolved to complete environment remediation activities and determine the equity finalization of NPR-1, management of NPR-2 leases, and operation of NPR-3 while providing RMOTC as a technology testing facility. Discussions have begun with the Department of the Interior on transfer of this asset.

PROGRAM HIGHLIGHTS

Fossil Energy Research and Development

In FY 2006 the Natural Gas Technologies and the Petroleum – Oil Technology will begin to terminate all activities in an orderly fashion. Funding in the FY 2006 Budget will be used fulfill environmental remediation, contract termination, and other legal obligations incurred by the termination process.

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 the competitiveness of domestic coal 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 2006 budget includes FutureGen under the Clean Coal Power Initiative.

The Fossil Energy Research and Development 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 2006 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 research and development activities.

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 FY 2005 deferral is cancelled to fulfill the commitment of completing the existing projects.

Elk Hills School Lands Fund

The $84 million shown in the FY 2006 request reflects payment of the FY 2005 advance appropriation of $36 million and new budget authority of $48 million.

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 began on April 16, 2004. In FY 2004, 23 million barrels of crude oil was degassed. Degas targets are set at 30 million barrels for FY 2005 and 14 million barrels for FY 2006.

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 700 million barrels. At the end of FY 2004, the SPR inventory was 670 million barrels. The reserve is scheduled to be at 690 million barrels in FY 2005 and at 700 million barrels at the end of 2005.

The FY 2006 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 2004, we exercised the second of four option years for continued storage at the East Coast terminals. The FY 2006 requirements for continued maintenance of the 2-million-barrel reserve are being funded with prior-year balances.

Naval Petroleum Reserve

The FY 2006 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 2005 to 2006 Request ($ in millions)

Fossil Energy Research and Development

President's Coal Research Initiative (FY 2005 $272.8; FY 2006 $286.0) .....+$13.2

Clean Coal Power Initiative/FutureGen (FY 2005 $67.1; FY2006 $68.0) ..... +$0.9
FY 2006 funding will support R&D and contribute towards the third round of demonstration projects under the Clean Coal Power Initiative. FutureGen project will continue. Environmental Impact Statement and Record of Decision will be completed, site characterization and monitoring activities will continue for various candidate sites, and technology assessments and preliminary design activities will continue.

Central Systems (FY 2005 $85.5; FY2006 $98.3).....+$12.8
Increased level of effort in IGCC in FY 2006 includes development of novel gasifier concepts, multi-contaminant gas cleaning processes, and advanced hydrogen/carbon dioxide separation technologies and the testing of small-scale process modules, when appropriate, at the Power Systems Development Facility. Combustion Systems program concluded in FY 2006. Ongoing efforts on hybrid gasification/combustion proceed under the IGCC program. Activity in the turbine area will focus on continuing development of Hydrogen turbines with reduced level to provide for FutureGen supporting research. Increase in Turbines at a modestly increased level to provide for additional work on hydrogen turbines and other innovative turbines work in support of FutureGen.

Sequestration R&D (FY 2005 $45.4; FY 2006 $67.2) .....+$21.8
FY 2006 activities focus on funding Phase II of the sequestration regional partnerships, continuance of the R&D portfolio including pilot plant testing. Testing is critical to ensure achievement of programmatic cost reduction goals and readiness for commercialization.

Fuels (FY 2005 $32.1; FY 2006 $22.0) ..... -$10.1
No FY 2006 funding is requested for ultra-clean transportation fuels as these activities are related to the production of liquid fuels from natural gas that could comply with U.S. EPA Tier-II Standards and which industry is developing without Federal support. No funding is requested for Solid Fuels and Feedstocks 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. Program is increasing funding for Hydrogen production from coal.

Advanced Research (FY 2005 $42.7; FY 2006 $30.5)..... -$12.2
Decreased funding for Coal Utilization and Materials Research reflects a shift to support research for FutureGen.

Other Power Systems (FY 2005 $78.4; FY 2006 $65.0) ..... -$13.4

Distributed Generation Fuel Cells (FY 2005 $77.4; FY 2006 $65.0) ..... -$12.4
DOE is consolidating all fuel cell efforts in support of expanded research on the SECA fuel cell system, because it is the most promising long-term, high-risk, high-gain area for fuel cell research, in accordance with the R&D Investment Criteria.

Molten carbonate and tubular solid oxide programs are no longer funded since they have reached conclusion. DOE considers these technologies at a point of development where industry can pursue their commercial development without further federal funding.

U.S./China Energy and Environmental Center (FY 2005 $0.9; FY 2006 $0) .... -$0.9
Concluded planned activities. No new activities will be conducted in FY 2006.

Natural Gas Technologies (FY 2005 $44.8; FY 2006 $10.0)..... -$34.8
No new activities will be conducted in FY 2006. Funding is provided for orderly termination of the program.

Petroleum – Oil Technology (FY 2005 $33.9; FY 2006 $10.0)..... -$23.9
No new activities will be conducted in FY 2006. Funding is provided for orderly termination of the program.

Cooperative Research and Development (FY 2005 $8.3; FY 2006 $3.0) ..... -$5.3
Provides reduced funding for Western Research Institute (WRI) and 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 2005 $9.5; FY 2006 $8.1)..... -$1.4**
Requested funding will support compliance with applicable federal, state, and local ES&H regulations.

Advanced Metallurgical Research (FY 2005 $9.9; FY 2006 $8.0) ..... -$1.9
Some research on mineralization for sequestration has been consolidated under the expanded Sequestration program. Some materials research for SECA fuel cell applications has been consolidated under the expanded SECA fuel cell program in Distributed Generation.

Program Direction (FY 2005 $104.5; FY 2006 $98.9)..... -$5.6
Reduced funding reflects cost savings realized by the orderly termination of the Natural Gas Technologies and Oil Technology programs.

Plant and Capital Equipment (FY 2005 $6.9; FY 2006 $0)..... -$6.9
Funds are not requested for NETL building, because FY 2005 funding is sufficient to allow contractor to continue work without new budget authority in FY 2006.

Clean Coal Technology

Clean Coal Technology (FY 2005 -$160.0 FY 2006 $0).....+$160
For FY 2006, DOE proposes to cancel $257-million deferral from FY 2005 of unneeded balances that resulted from withdrawn clean coal projects. FY 2006 budget proposes to redirect these funds to the Fossil Energy R&D program for work on the FutureGen project beginning in FY 2007. Net request for FY 2006 is for $0 after proposed $257-million cancellation of deferred funds.

Strategic Petroleum Reserve

Strategic Petroleum Reserve (FY 2005 $169.7; FY 2006 $166.0)..... -$3.7
Decrease reflects the scheduling of fewer major maintenance activities in FY 2006.

Strategic Petroleum Reserve – Petroleum Account (FY 2005 $0; FY 2006 $0) $0

Naval Petroleum Reserve

Naval Petroleum and Oil Shale Reserves (FY 2005 $17.7; FY 2006 $18.5)..... +$0.8
Increase reflects environmental remediation activities at NPR-1 and NPR-3 as well as increased funding for production operations at NPR-3.

Northeast Home Heating Oil Reserve

Northeast Home Heating Oil Reserve (FY 2005 $4.9; FY 2006 $0)..... -$4.9
Requirements in the amount of $5.3 will be funded with prior-year balances.

Nuclear Energy, Science and Technology

(discretionary dollars in thousands)

	FY 2004 Comparable Approp	FY 2005 Comparable Approp	FY 2006 Request to Congress	FY 2006 vs. FY 2005	
Office Of Nuclear Energy, Science And Technology					
Energy Supply					
University reactor infrastructure and education assistance	23,055	23,810	24,000	+190	+0.8%
Research and development					
Nuclear energy plant optimization	2,863	2,480	——	-2,480	-100.0%
Nuclear energy research initiative	6,410	2,481	——	-2,481	-100.0%
Nuclear power 2010	19,360	49,605	56,000	+6,395	+12.9%
Generation IV nuclear energy systems initiative	26,981	39,683	45,000	+5,317	+13.4%
Nuclear hydrogen initiative	6,201	8,929	20,000	+11,071	+124.0%
Advanced fuel cycle initiative	65,750	67,462	70,000	+2,538	+3.8%
Total, Research and development	127,565	170,640	191,000	+20,360	+11.9%
Infrastructure	195,619	248,986	144,900	-104,086	-41.8%
Program direction	60,256	60,374	30,006	-30,368	-50.3%
Subtotal, Energy Supply	406,495	503,810	389,906	-113,904	-22.6%
Use of prior year balances and other adjustments	-115,309	-128,564	——	+128,564	+100.0%
Total, Energy Supply	291,186	375,246	389,906	14,660	+3.9%
Other Defense Activities					
Infrastructure	77,639	78,381	92,770	+14,389	+18.4%
Spent nuclear fuel management	——	1,488	——	-1,488	-100.0%
Program direction	33,979	33,519	31,103	-2,416	-7.2%
Subtotal, Other Defense Activities	111,618	113,388	123,873	+10,485	+9.2%
Use of prior year balances and other adjustments	——	-3,003	-3,003	——	——
Total, Other Defense Activities	111,618	110,385	120,870	+10,485	+9.5%
Total, Nuclear Energy, Science And Technology	**402,804**	**485,631**	**510,776**	**+25,145**	**+5.2%**

The **Office of Nuclear Energy, Science and Technology** (NE) is funded in two accounts within the Energy and Water Development Appropriations, 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

NE 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 DOE'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 development of new nuclear generation technologies that provide significant improvements in sustainability, economics, safety and reliability, and proliferation and resistance to attack. 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**, DOE seeks to develop advanced, proliferation resistant nuclear fuel technologies that maximize the energy produced from nuclear fuel while minimizing wastes. In addition, the **Nuclear Power 2010** program supports intermediate-term research, technology development and demonstration activities that advance the "National Energy Policy" goals for enhancing long-term U.S. energy independence and reliability and expanding the contribution of nuclear power to the nation's energy portfolio.

PROGRAM HIGHLIGHTS

The FY 2006 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 provides fresh fuel to university research reactors and supports reactor equipment upgrades at universities. In FY 2006, the program will continue the Nuclear Engineering Support and Education program that supports outreach activities to pre-college teachers and students.

In FY 2004, DOE began to integrate the Nuclear Energy Research Initiative (NERI) activity directly into its mainline nuclear R&D programs. Solicitations were issued in late FY 2004 and the selection of 35 cooperative agreements will be awarded in early 2005 to U.S. universities to conduct research on the Generation IV, the Advanced Fuel Cycle Initiative, and the Nuclear Hydrogen Initiative programs. In FY 2006, no funding is requested in the NERI program as the mainline R&D programs will provide funding for the NERI university awards.

Under the **Nuclear Power 2010** program, DOE requests funding of $56.0 million in FY 2006 to complete the Early Site Permit demonstration projects with issuance of three Early Site Permits by the U.S. Nuclear Regulatory Commission (NRC). In addition, the program will complete the industry cost-shared project initiated in FY 2003 to develop generic guidance for the Construction and Operating License (COL) application preparation and to resolve generic

COL regulatory issues and continue the implementation phase of the two New Nuclear Plant Licensing Demonstration Projects awarded in FY 2005.

The goal of the **Generation IV Nuclear Energy Systems Initiative** (Gen IV) is to address the fundamental research and development issues necessary to establish the viability of next-generation nuclear energy system concepts. The 2006 budget provides $45 million for the Gen IV program to expand research and development that could help achieve the desired goals of sustainability, economics, and proliferation resistance.

The **Nuclear Hydrogen Initiative** (NHI) will conduct research and development on enabling technologies, demonstrate nuclear-based hydrogen production technologies and develop technologies that will apply heat from Generation IV nuclear energy systems to produce hydrogen. 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 **Hydrogen Fuel Initiative**. Research and development work carried out by NHI may 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.

In FY 2005, INEEL was 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 DOE's strategic nuclear energy research and development efforts. The INL is a multi-program national laboratory that will play a lead role in the Generation IV Nuclear Energy Systems Initiative, the Advanced Fuel Cycle Initiative, and play an increasingly important role in supporting national security.

The **Idaho Facilities Management** program provides INL with the site-wide infrastructure required to support the laboratory's research and development programs. The Department has developed a detailed INL Ten Year Site Plan that will guide its investments in INL's infrastructure over the next decade and the government's objective to develop INL into a world-class nuclear energy research and development center by 2015.

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 2006, NE will assume full responsibility for 2 FTE transferred from NNSA to support International Nuclear Safety activities. The FY 2006 budget request provides funding for the National Academy of Sciences to undertake a comprehensive, independent evaluation of the nuclear energy program's goals, plans, and the process for establishing program

priorities and oversight (including the method for determining the relative distribution of budgetary resources).

SIGNIFICANT FUNDING CHANGES – FY 2005 to 2006 Request ($ in millions)

University Reactor Infrastructure and Education Assistance
(FY 2005 $23.8; FY 2006 $24.0)..... +$0.2
Increase reflects additional fellowships/scholarships/grants (+$0.6), new activities that support pre-college education and outreach (+$0.2) and establish a Junior Faculty Research Grant initiative (+$0.3) offset by a decrease due to a reduction of the reactor fuel program fresh fuel requirements and spent fuel shipments (-$0.9).

Nuclear Energy Plant Optimization (FY 2005 $2.5; FY 2006 $0)..... -$2.5
Funds previously provided for NEPO will be allocated to other nuclear energy R&D efforts; funding is not requested for FY 2006.

Nuclear Energy Research Initiative (NERI) (FY 2005 $2.5; FY 2006 $0)..... -$2.5
Decrease reflects the restructuring to integrate NERI into the Department's mainline nuclear energy R&D programs.

Nuclear Power 2010 (FY 2005 $49.6; FY 2006 $56.0)..... +$6.4
Increase reflects continuation of the implementation phase of the two New Nuclear Plant Licensing Demonstration Projects that were awarded in FY 2005.

Generation IV Nuclear Energy Systems Initiative
(FY 2005 $39.7; FY 2006 $45.0)..... +$5.3
Increase reflects expansion of research and development efforts required to establish the technical viability of Generation IV technology.

Nuclear Hydrogen Initiative (FY 2005 $9.0; FY 2006 $20.0) .....+$11.0
FY 2006 request reflects an increase to support enhanced research and development on the sulfur-iodine thermochemical and high-temperature electrolysis hydrogen production methods, as well as on alternative hydrogen production methods operating across a range of temperatures to determine process viability. This includes initiation of sulfur-iodine cycle and HTE cell operational testing, fabrication of the laboratory-scale high-temperature heat exchanger, and continuation of the preliminary design of the pilot-scale.

Advanced Fuel Cycle Initiative (FY 2005 $67.5; FY 2006 $70.0)..... +$2.5
Increase reflects funding to complete laboratory-scale hot testing of advanced aqueous processes, research on alternative advanced separation technologies, develop a pre-conceptual design for an advanced fuel cycle research laboratory at INL (+$2.6), to complete LWR oxide transmutation fuel, inert matrix fuel and ultra-high burn-up fuel irradiations and post-irradiation examination (+$3.5) and to complete Advanced Test Reactor irradiation experiments on metal, nitride, dispersion and inert matrix fuels for transmutation and Generation IV fast reactor systems (+$3.6). Request also includes increases for broad systems studies, integrated fuel cycle system studies, and facility assessments, focusing principal activities on developing the information required to inform the 2007-2010 Secretarial recommendation regarding the need for a second repository (+$0.3), additional Ph.D. level AFCI fellowships (+$0.7) and increased funding for research and development activities associated with Small Business Innovative Research and Small Business Technology Transfer Programs (+$0.6). Increases are offset by a decease due to the completion of the design for the Materials Test Station (-$8.8).

Radiological Facilities Management (FY 2005 $68.6; FY 2006 $64.8) ..... -$3.8
FY 2006 request includes an overall decrease to the **Space and Defense Infrastructure** program (-$2.3). Decrease reflects completion of those activities associated with establishing the heat source and radioisotope power system assembly and testing operations at INL (-$1.9) and reducing the level of equipment for the assembly and testing activities to the level required for routine maintenance (-$0.6) offset by an increase to process more residues stored from prior year operations (+$0.2). In addition, the request includes a decrease in the **Medical Isotopes Infrastructure** program (-$1.5). Net decrease in the U-233 program reflects a shift of operating expenses to the line item project in accordance with DOE order 413 (-$1.7) and decreases in capital equipment purchases at LANL and BNL (-$0.4). Decreases are offset by increases for maintenance activities at ORNL, LANL, SNL and BNL (+$0.6).

Idaho Facilities Management (FY 2005 $112.2; FY 2006 $97.9) ..... -$14.3
FY 2006 request includes decreases for one-time costs in FY 2005 associated with restructuring the Idaho laboratory complex and supporting infrastructure services (-$43.5) and completion of the TRA Electrical Utility Upgrade in FY 2005 (-$1.5). Decrease is offset by an increase in maintenance at INL to work towards the goal of achieving and maintaining a Replace Plant Value rate of 2 to 4 percent, a level recommended by the National Academy of Sciences (+$9.2), network infrastructure improvement at INL (+4.4), general plant projects (+$6.1), Architect-Engineering services for preliminary and final engineering design and project management for the Remote Treatment Project and the Gas Test Loop in the Advanced Test Reactor (+$7.9), and initiation of construction activities including procurement of long lead items for the Gas Test Loop in the Advanced Test Reactor (+$3.1).

Idaho Site-Wide Safeguards and Security (FY 2005 $54.7; FY 2005 $72.0).....+$17.3
FY 2006 request includes ongoing implementation of the security enhancements required by the revised 2004 Design Basis Threat.

Program Direction (FY 2005 $60.0; FY 2006 $61.1)..... +$1.1
FY 2006 request includes funding to support new hires to manage expanding research and development programs, such as the Nuclear Hydrogen Initiative and Generation IV Nuclear Energy Systems Initiative, and to provide for cost-of-living adjustments (+$0.8). Request also includes an increase in other related expenses due to an increase to undertake a comprehensive, independent evaluation by the National Academy of Sciences of NE's research programs (+$1.0), an increase for utilities, training, and supplies, (+$0.1) offset by a reduction in telecommunications equipment, medical expenses and mailroom services at Idaho (-$0.9).

Energy Information Administration

(discretionary dollars in thousands)

	FY 2004 Comparable Approp	FY 2005 Comparable Approp	FY 2006 Request to Congress	FY 2006 vs. FY 2005	
Energy Information Administration					
National energy information system.....	**81,100**	**83,819**	**85,926**	**+2,107**	**+2.5%**

PROGRAM DESCRIPTION

The **Energy Information Administration** (EIA) is an independent statistical agency that collects, analyzes, produces, and disseminates policy-neutral 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. Many of EIA's activities are required by statute.

PROGRAM HIGHLIGHTS

The EIA FY 2006 program request is $85.9 million, which is $2.1 million more than FY 2005 comparable appropriation of $83.8 million. EIA's base program includes the maintenance of a comprehensive energy database, the maintenance of a secure data transmission, access, and processing capabilities, the maintenance of modeling systems for both near and mid-term energy market analysis and forecasting, and dissemination of its energy data and analyses to a wide variety of customers in the public and private sectors through the National Energy Information Center.

SIGNIFICANT FUNDING CHANGES – FY 2005 to FY 2006 Request ($ in millions)

Energy Information Administration (FY 2005 $83.8; FY 2006 $85.9)..... +$2.1
Increase allows EIA to improve petroleum and natural gas data security, reliability, and quality; implement the enhanced Voluntary Greenhouse Gases Emissions reporting system to support the President's Climate Change Initiative; and develop a program performance prototype to assess EIA's data collection and operations costs at a more disaggregated level. It also provides for the federal employee pay raise and maintains on-going core energy data programs and forecasting systems needed to provide accurate, reliable, and timely data, analysis, and forecasts for use by Congress, the Administration, and the public.

Power Marketing Administrations

(discretionary dollars in thousands)

	FY 2004 Comparable Approp	FY 2005 Comparable Approp	FY 2006 Request to Congress	FY 2006 vs. FY 2005	
Power Marketing Administrations					
Southeastern Power Administration					
Southeastern power administration	39,070	39,158	38,313	-845	-2.2%
Offsetting collections	-19,000	-34,000	-38,313	-4,313	-12.7%
Offsetting collections (P L 106-377)	-15,000	——	——	——	——
Total, Southeastern Power Administration	**5,070**	**5,158**	**——**	**-5,158**	**-100.0%**
Southwestern Power Administration					
Southwestern power administration	30,231	32,017	31,401	-616	-1.9%
Offsetting collections	-1,512	-2,900	-28,235	-25,335	-873.6%
Offsetting collections (P L 106-377)	-288	——	——	——	——
Total, Southwestern Power Administration	**28,431**	**29,117**	**3,166**	**-25,951**	**-89.1%**
Western Area Power Administration					
Western area power administration	366,992	402,983	393,419	-9,564	-2.4%
Use of prior year balances	-27	——	——	——	——
Offsetting collections	-166,100	-227,600	-335,300	-107,700	-47.3%
Offsetting collections (P L 106-377)	-20,000	——	——	——	——
Offsetting collections (P L 98-381)	-3,992	-3,668	-4,162	-494	-13.5%
Total, Western Area Power Administration	**176,873**	**171,715**	**53,957**	**-117,758**	**-68.6%**
Falcon and Amistad Operating and Maintenance Fund					
Operation and maintenance	2,625	2,804	2,692	-112	-4.0%
Offsetting collections	——	——	-2,692	-2,692	n/a
Total, Falcon and Amistad Fund	**2,625**	**2,804**	**——**	**-2,804**	**-100.0%**
Total, Power Marketing Administrations	**212,999**	**208,794**	**57,123**	**-151,671**	**-72.6%**

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) markets and delivers all available federal hydroelectric power from 24 Corps hydroelectric power projects and participates with other water resource users in an effort to balance diverse interests with power needs. To deliver power to its customers, Southwestern maintains 1,380 miles of high-voltage transmission lines, 24 substations, and 47 microwave and VHF radio sites. Southwestern's budget request provides for maintenance, additions, replacements, and interconnections assuring a dependable and reliable federal power system, which is an integral part of the Nation's electrical grid.

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.

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 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 non-federal financing planned and is repaid with market-determined interest using revenues.

PROGRAM HIGHLIGHTS

New appropriation language in FY 2006 provides Southeastern, Southwestern, and Western Area Power Administrations with the authority to credit a portion of their revenues to their appropriation account as offsetting collections for expenses related to Operations and Maintenance and Program Direction. The appropriations for these activities will be offset by receipts.

Southeastern's appropriation language provides the authority to deposit $5.6 million of its revenues into the U.S. Treasury as offsetting collections for expenses related to Program Direction. The revenues collected will offset Southeastern's appropriation, resulting in a net appropriation of $0.

Southwestern's appropriation language provides the authority to deposit $27 million of its revenues into the U.S. Treasury as offsetting collections for expenses related to Operations and Maintenance and Program Direction. The revenues collected will offset Southwestern's appropriation, resulting in a net appropriation of $3.2 million.

Western's appropriation language provides the authority to credit $186.8 million of its revenues into Western's Construction, Rehabilitation, Operation and Maintenance Account as offsetting collections for expenses related to Operations and Maintenance and Program Direction. The revenues collected will be a direct offset to Western's appropriation, resulting in a net appropriation of $54 million to this account. The appropriation language also proposes to provide funding for the Utah Reclamation Mitigation and Conservation Account on a reimbursable basis from Western's Colorado River Storage Project customers.

Southeastern, Southwestern, and Western's FY 2006 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 successfully completed construction oversight 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 $250 million of non-federal funds were invested to expand the capacity of the transmission system by 1,500 megawatts. This project was commissioned in December of 2004, under budget and slightly ahead of schedule.

Bonneville's FY 2006 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. These efforts will help assure the reliability of the northwest's electric transmission and energy supply.

SIGNIFICANT FUNDING CHANGES – FY 2005 to FY 2006 Request ($ in millions)

Southeastern Power Administration (FY 2005 $5.2; FY 2006 $0) ..... -$5.2
FY 2006 proposes a net zero budget authority for program direction.

Program Direction (FY 2005 $5.2; FY 2006 $5.6) ..... +$0.4
Increase reflects the full effect of the FY 2005 pay raise and the partial effect of the FY 2006 pay raise.

Purchase Power and Wheeling (funded through alternative financing in FY 2006) (FY 2005 $34.0; FY 2006 $32.7)..... -$1.3
FY 2006 request provides for the purchase and delivery of energy to meet limited peaking power contractual obligations. Federal power receipts and alternative methods, including net billing, bill crediting, and customer advances will be used to fund system support and other contractual services. Customers will provide other resources and/or purchases for the remainder of their firm loads.

Offsetting Collections (FY 2005 -$34.0; FY 2006 -$38.3)..... -$4.3
Southeastern will recover the full cost of this subprogram through revenues collected from the sale of federal power and other related services, and deposited into the U.S. Treasury as a direct offset to the appropriation, resulting in a net appropriation of $0 for this subprogram.

Southwestern Power Administration (FY 2005 $29.1; FY 2006 $3.2) ..... -$25.9
FY 2006 budget proposes appropriations offset by receipts for operations and maintenance and program direction.

Operations and Maintenance (FY 2005 $4.7; FY 2006 $7.0)..... +$2.3
Increase reflects replacement of a transformer, disconnect switches, relays and proper right-of-way clearing. Southwestern will recover the full cost of this subprogram through revenues collected from the sale of federal power and other related services, and deposit into the U.S. Treasury as a direct offset to the appropriation, resulting in a net appropriation of $0 for this subprogram.

Program Direction (FY 2005 $19.2; FY 2006 $20.0)..... +$0.8
Increase reflects full effect of FY 2005 pay raise and the partial effect of the FY 2006 pay raise.

Purchase Power and Wheeling (FY 2005 alternative financing $8.3; use of receipts $2.9; FY 2006 alternative financing $9.4; use of receipts $1.2)..... -$1.7
An overall program reduction of $0.65 and a $1.7-reduction in use of receipts. FY 2006 request provides for the purchase and delivery of energy to meet limited peaking power contractual obligations and transmission line losses from the delivery of power over the federal system. Federal power receipts and alternative methods, including net billing, bill crediting, and customer advances will be used to fund system

support and other contractual services. Customers will provide other resources and/or purchases for the remainder of their firm loads.

Offsetting Collections (FY 2005 -$2.9; FY 2006 -$28.2) ..... -$25.3
Southwestern will recover the full cost of operation and maintenance, purchase power and wheeling and program direction through revenues collected from the sale of federal power and other related services, and deposit into the U.S. Treasury as a direct offset to the appropriation, resulting in a net of $0 for these subprograms.

Construction (FY 2005 $5.3; FY 2006 $3.2) ..... -$2.1
Decrease reflects the completion of the initial OPGW installation, reduction in facility work and the replacement of different types of special purpose vehicles.

Western Area Power Administration (FY 2005 $171.7; FY 2006 $54.0) ..... -$117.7
FY 2006 Construction, Rehabilitation, Operation, and Maintenance program is $451.6 (compared to $508.6 in FY 2005) to be funded by $53.9 in budget authority and $186.8 in use of receipt authority for Operations and Maintenance and Program Direction, $148.5 in use of receipt authority for Purchase Power and Wheeling, $4.2 funded through a reimbursable agreement with the Bureau of Reclamation using receipts from the Colorado River Dam Fund, and $58.1 for alternative financing of above average purchase power and wheeling program requirements.

Purchase Power and Wheeling (FY 2005 use of receipts $227.6, alternative financing $43.6; FY 2006 use of receipts $148.5, alternative financing $58.1)..... -$64.6
FY 2006 request provides use of receipt funding to support long-term average purchase power and wheeling requirements. Emergency/ Continuing Fund authorities and alternative financing methods (net billing, bill crediting, and federal/non-federal reimbursable authorities) are available to meet above average requirements. Customers are encouraged 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 2005 $141.3; FY 2006 $143.7) ..... +$2.4
Increase reflects the full effect of the FY 2005 pay raise and the partial effect of the FY 2006 pay raise. Western will recover the full cost of this subprogram through revenues collected from the sale of federal power and other related services, and deposit into U.S. Treasury as a direct offset to the appropriation, resulting in a net appropriation of $0 for this subprogram.

Construction and Rehabilitation (FY 2005 $44.2; FY 2006 $54.0) ..... +$9.8
Increase provides for direct appropriation of necessary 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. The overall increase of $9.8 is primarily to support continuing work on transmission lines, terminal facilities, and substations.

Operation and Maintenance (FY 2005 $45.7; FY 2006 $47.3) ..... +$1.6
Increase reflects inflation and increased maintenance on Western's aging infrastructure and replacement of one of Western's helicopters. Increase also includes the replacement and addition of electrical equipment. Western will recover the full cost of this subprogram through revenues collected from the sale of federal power and other related services, and deposit into U.S. Treasury as a direct offset to the appropriation, resulting in a net appropriation of $0 for this subprogram.

Utah Reclamation Mitigation and Conservation (FY 2005 $6.2; FY 2006 $0) . -$6.2
FY 2006 request proposes to fund Western's annual contribution to the Utah Reclamation Mitigation and Conservation account from receipts collected into Western's Colorado River Basins Power Marketing Fund. Annual deposit is proposed to be reimbursed through power sales from Western's Colorado River Storage Project customers.

Offsetting Collections (FY 2005 -$231.3; FY 2006 -$339.5) .....-$108.2
In FY 2006 Western will recover from power sales the full cost of Operation and Maintenance program activities and Program Direction activities and credit to this account these collections as an offset to the FY 2006 appropriation. Use of receipts for Purchase Power and Wheeling program expenses and use of Colorado River Dam Fund receipts for Boulder Canyon Project activities will continue.

Alternative Financing (FY 2005 -$105.6; FY 2006 -$58.1).....+$47.5
In FY 2006, proposals for use of offsetting collections reduce the need for alternative financing methods, primarily cash advances from customers, to meet annual operations and maintenance requirements. Alternative financing methods continue to be available for above-average purchase power and wheeling needs.

Bonneville Power Administration (self financed through revenues)
Capital Investment Obligations (FY 2005 $432.9; FY 2006 $487.5) .....+$54.6
No annual appropriation received. In FY 2006, total requirements of all Bonneville programs include estimated budget obligations of $3,612. This amount includes operating expenses of $2,977 and total capital investments that require budget obligations and use of existing borrowing authority of $488. 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. Increase in capital investments primarily reflects the Transmission Business Line's fiscal year shifts in materials and construction costs associated with the infrastructure projects and updated power flow study results offset by a slight decrease in power investments.

Power Business Line (FY 2005 $199.7; FY 2006 $184.4)..... -$15.3
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 decrease in conservation and energy efficiency (-$3.5) and associated project costs (-$11.8).

Transmission Business Line (FY 2005 $198.3; FY 2006 $266.6).....+$68.3
Provides for main grid voltage support additions, upgrades, and replacements to the federal transmission system, conducts pollution prevention and abatement activities in compliance with environmental laws and regulations, and mitigation of environmental risks associated with operation of the power system. Transmission infrastructure investments 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. Net change reflects shifts in materials and construction costs associated with the infrastructure projects and updated power flow study results. FY 2006 budget transmission infrastructure projects include: (G1) Puget Sound Area Additions (Complete), (G2) North of Hanford North of John Day (under construction), (G3) West of McNary (pending generation interconnection decisions), (G4) Starbuck Generation (cancelled), (G5) Lower Monumental and McNary Area Generation (Phase II) (cancelled), (G6) Cross Cascades North (Complete), (G7) Celilo Modernization

(completed), (G8) I-5 Corridor Additions (on hold), (G9) Spokane Area and Western Montana Generation Additions (under construction), (G10) Portland Area Additions (Complete), (G12) Olympic Peninsula Additions (under further study), (G13) I-5 Corridor Generation Additions (Southwest Washington-Northwest Oregon) (on hold pending generation interconnection decisions).

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 2004 Comparable Approp	FY 2005 Comparable Approp	FY 2006 Request to Congress	FY 2006 vs. FY 2005	
Science	**3,536,373**	**3,599,546**	**3,462,718**	**-136,828**	**-3.8%**

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.

Science

(discretionary dollars in thousands)

	FY 2004 Comparable Approp	FY 2005 Comparable Approp	FY 2006 Request to Congress	FY 2006 vs. FY 2005	
Science					
High energy physics	716,170	736,444	713,933	-22,511	-3.1%
Nuclear physics	379,792	404,778	370,741	-34,037	-8.4%
Biological and environmental research	624,048	581,912	455,688	-126,224	-21.7%
Basic energy sciences	991,262	1,104,632	1,146,017	41,385	+3.7%
Advanced scientific computing research	196,795	232,468	207,055	-25,413	-10.9%
Science laboratories infrastructure	55,266	41,998	40,105	-1,893	-4.5%
Fusion energy sciences program	255,859	273,903	290,550	16,647	+6.1%
Safeguards and security	62,328	72,773	74,317	1,544	+2.1%
Science program direction	150,277	153,706	162,725	9,019	+5.9%
Workforce development for teachers and scientists	6,432	7,599	7,192	-407	-5.4%
Small business innovation research (SBIR)	114,915	———	———	———	———
Subtotal, Science	3,553,144	3,610,213	3,468,323	-141,890	-3.9%
Use of prior year balances and other adjustments	-16,771	-10,667	-5,605	5,062	+47.5%
Total, Science	**3,536,373**	**3,599,546**	**3,462,718**	**-136,828**	**-3.8%**

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. Science participates in research on the President's initiatives in hydrogen, fusion energy, nanoscale science, information technology, and climate change science and technology.

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, supporting electronic government, and the use of investment criteria for evaluating basic research.

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 (SLAC)** 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 in terms of their fundamental constituents. NP funds two large national user accelerator facilities, the **Thomas Jefferson National Accelerator Facility (TJNAF)** in Newport News, Virginia, and the **Relativistic Heavy Ion Collider (RHIC)** at Brookhaven National Laboratory in Upton, 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 discoveries necessary to clean and protect our environment, offer new energy alternatives and 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 includes the DOE Human Genome and Genomics:GTL programs. **Climate Change Research** funds DOE participation in the U.S. Climate Change Science program. **Environmental Remediation** supports clean-up and restoration of the nation's nuclear weapons production sites. Using DOE research and technologies, the **Medical Applications and Measurement Science** program develops diagnostic and therapeutic tools for disease diagnosis and treatment.

The **Basic Energy Sciences** (BES) program supports 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** supports basic research on the atomistic basis of materials properties and behavior, and how to make materials perform more efficiently and at a lower cost in energy generation, conservation, and use. 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** supports research crucial for improving combustion systems, solar photoconversion processes, and for applications to renewable fuel resources, environmental remediation, and photosynthesis. The $1.4 billion (total project cost) **Spallation Neutron Source** at Oak Ridge National Laboratory, the world's most powerful neutron scattering facility, will be completed in FY 2006. Four **Nanoscale Science Research Centers** are completed and begin operations as part of the National Nanotechnology initiative; construction continues on a fifth center at Brookhaven National Laboratory. Construction is also underway on the next-generation $0.4 billion (total project cost) **Linac Coherent Light Source** at SLAC.

The **Advanced Scientific Computing Research** (ASCR) program provides world leadership in 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. 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 on the President's initiative

to participate in the construction of an international burning plasma fusion experiment, the **International Thermonuclear Experimental Reactor** (ITER).

PROGRAM HIGHLIGHTS

The FY 2006 Science request totals $3.5 billion, about 2 percent less than the FY 2005 level after adjustment for one-time congressionally directed projects in the Energy and Water Development Appropriations bill. 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 **SLAC** facilities. 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, participating with the European Center for Nuclear Research (CERN), will complete U.S. fabrication projects for the **Large Hadron Collider** (LHC) in FY 2007, and then become a partner in its research program. HEP also has a program of non-accelerator physics. Funding of $30 million is transferred to Basic Energy Sciences for operation of the SLAC linac.

Nuclear Physics (NP) will focus its FY 2006 resources on research and operations of its two largest facilities. **TJNAF** operates 29 percent fewer hours in FY 2006 (-$6.9 million). **RHIC** at BNL decreases operating hours by 61 percent (-$10.4 million). The **Bates** facility operates thru mid FY 2005, and is then scheduled for decontamination and decommissioning. The **88-Inch Cyclotron** at LBNL continues to operate as a dedicated in-house facility, and will be available to the U.S. Air Force and the National Reconnaissance Office in FY 2006. Funding for R&D on a proposed new facility, the **Rare Isotope Accelerator**, is reduced from $6.7 million in FY 2005 to $4.0 million in FY 2006.

Biological and Environmental Research (BER) has several high visibility activities. The **Genomics:GTL** program research increases by $19.6 million for additional research on imaging and characterization of complex microbial communities for energy and environmental applications. The **Human Genome** and **Climate Change** programs are maintained at near FY 2005 levels. Increases are offset by reductions in Structural Biology, Environmental Remediation, and Medical Applications. Congressionally-directed projects from FY 2005 ($79.6 million) are not continued.

The **Basic Energy Sciences** (BES) program increases by $41.4 million in FY 2006. BES funding for construction of the **Spallation Neutron Source** (SNS) decreases by $38.1 million as the project moves to completion in FY 2006; funding for operations of the SNS increases by $73.8 million. There is an increase of $44.2 million in **Nanoscale Science** research activities, offset by a $47.7 million reduction in funding for five **Nanoscale Science Research Centers**. An additional $3.3 million is provided for the President's **Hydrogen Initiative**, bringing the FY 2006 total to $32.5 million, and there is an increase of $35.9 million for Project Engineering and Design and construction of the next-generation **Linac Coherent Light Source** (LCLS); $30 million has been transferred from HEP to operate the SLAC linac which is part of the LCLS.

Advanced Scientific Computing Research (ASCR) reduces funding for the **Next Generation Computer Architecture** initiative by $15.5 million. A new activity to allow SciDAC teams to evaluate new computer architectures as tools for science is initiated at $13.2 million. There is also a new $8 million initiative for two competitively selected SciDAC (Scientific Discovery Through Advanced Computing) institutes at universities that can become high-end computing centers of excellence.

The **Fusion Energy Sciences** (FES) program is continuing to participate in negotiations to construct an international burning plasma experiment, **ITER,** and requests $46 million to begin U.S. contributions to the ITER major item of equipment (MIE). The program will operate two of its three primary facilities at below FY 2005 levels. The third facility will not operate in FY 2006. Fusion will continue fabrication of the **National Compact Stellarator Experiment** at PPPL.

The **Science Laboratories Infrastructure** (SLI) program will support the design of the PNNL Capability Replacement Laboratory project, provide general plant project funding to refurbish and rehabilitate general purpose infrastructure, and fund D&D of the LBNL Bevatron complex. **Safeguards and Security** increases slightly at the FY 2005 level. **Program Direction** has total staffing of 999 FTE. A decrease in **Workforce Development for Teachers and Scientists** requires reductions in the Laboratory Science Teacher Professional Development Program, Faculty Sabbatical Fellowships, Pre-Service Teacher support, and support of Science Bowl teams.

There were two performance-based decisions made by the Office of Science. In **BER**, moving the management of the National Institute for Global Environmental Change (NIGEC) from the University of California at Davis to BER will increase performance by reducing overhead costs and freeing up funds to support additional relevant and high quality research. The number of NIGEC regional centers will also be reduced from six to four by holding an open competition for the four centers in accordance with the principles of the President's Management Agenda. In **BES,** basic research to realize the potential of a hydrogen economy will be increased by $3.3 million in support of the President's hydrogen initiative. The BES research program is based on the workshop report *Basic Research Needs for the Hydrogen Economy* that includes detailed findings and research directions identified by the scientific community and DOE applied programs. All research awards are based on the results of peer reviews that assess past performance and the quality of the proposals.

SIGNIFICANT FUNDING CHANGES – FY 2005 to 2006 Request ($ in millions)

High Energy Physics (FY 2005 $736.4; FY 2006 $713.9) ..... -$22.5
In FY 2006, the focus continues to be on the facilities at **Fermilab** (FY 2005 $303.6; FY 2006 $304.2), and at **SLAC** (FY 2005 $166.2; FY 2006 $144). Fermilab Tevatron will operate 4560 hours in FY 2006, a 6-percent increase over FY 2005. SLAC will operate 5200 hours in FY 2006, a 54-percent increase over FY 2005. SLAC linac funding will also be supported with $30 million in Basic Energy Sciences ..... -$21.6

Funding for the **Large Hadron Collider** (LHC) project declines as it nears completion (FY 2005 $32.5; FY 2006 $7.4), but preparations for participating in the research program are increasing (FY 2005 $29.4; FY 2006 $52.6)..... -$1.9

Funding for Non-Accelerator Physics using underground, land-based, or space-based facilities decreases (FY 2005 $46.9; FY 2006 $38.6) as research is reduced and projects proceed toward completion. Theoretical Physics increases slightly (FY 2005 $49.0; FY 2006 $49.1). Advanced Technology R&D (FY 2005 $94.7; FY 2006 $106.3) increases Linear Collider R&D by $2.4 to $25.0, and R&D increases $3.9 for a future neutrino facility at Fermilab. Other changes total -$2.4. ..... +$1.0

Nuclear Physics (FY 2005 $404.8; FY 2006 $370.7) ..... -$34.1
Research and operation of facilities at **TJNAF** and **RHIC** continues to dominate funding in FY 2006. TJNAF operating hours are reduced by 29 percent; $1.5 million is included for R&D on the possible CEBAF upgrade to 12 GeV (FY 2005 $85.9; FY 2006 $79). RHIC operating hours decrease by 61 percent (FY 2005 $136.7; FY 2006 $126.3) ..... -$17.3

Bates facility at MIT will be fully in the decontamination and decommissioning phase (FY 2005 $11.9; FY 2006 $6.7). **88-Inch Cyclotron** at LBNL will continue to operate in FY 2006 to support a small in-house research program and critical U.S. Air Force and National Reconnaissance Office research activities (FY 2005 $7.3; FY 2006 $7.2) ..... -$5.3

R&D activities for the **Rare Isotope Accelerator** are reduced (FY 2005 $6.7; FY 2006 $4.0). Nuclear Theory also decreases (-$2.8). Other changes total -$6.0. -$11.5

Biological and Environmental Research (FY 2005 $581.9; FY 2006 $455.7) .....-$126.2
In Life Sciences, **Human Genome** (FY 2005 $64.6; FY 2006 $64.2) and Genomics:GTL (FY 2005 $67.6; FY 2006 $87.2) continue as the largest activities. Other research is reduced (FY 2005 $70.6; FY 2006 $52.6) ..... +$1.2

Funding for the Climate Change Research subprogram increases slightly (FY 2005 $141.0; FY 2006 $143.0). Environmental Remediation subprogram is reduced (FY 2005 $104.5; FY 2006 $94.7), reflecting a focus on subsurface science.. ..... -$7.8

In Medical Applications and Measurement Science the FY 2005 congressionally-directed projects were completed (-$79.6). Other research activities decrease by $30.1 reflecting completion of several research topics. .....-$109.7

Project Engineering and Design (PED) for the **Facility for Production and Characterization of Proteins and Molecular Tags** is completed..... -$9.9

Basic Energy Sciences (FY 2005 $1,104.6; FY 2006 $1,146.0) .....+$41.4
In Materials Sciences and Engineering, there is an increase of $1.8 for the **President's Hydrogen Initiative**. Request includes $126.6 for **nanoscale science** (including $14 to complete a Major Item of Equipment for the ANL Center for Nanophase Materials), an increase of $47.6. R&D for the **Linac Coherent Light Source (LCLS)** is reduced (FY 2005 $5.5; FY 2006 $1.5). Facilities Operations funding (excluding increases for the nanoscale centers described above) increases by 27-percent (FY 2005 $325.2; FY 2006 $413.8), including +$73.8 for operation of the Spallation Neutron Source, +$30 for operation of the SLAC linac, and -$4.5 for closure of the Radiochemical Engineering Development Center at ORNL. Other changes total -$23.0 .....+$111.0

Chemical Sciences, Geosciences, and Energy Biosciences have a change of +$1.5 million for the **President's Hydrogen Initiative**. Request includes $26.9 for **nanoscale science research,** a decrease of $1.4. Other research activities are reduced (-$17.7). ..... -$17.6

Basic Energy Sciences funds six construction projects in FY 2006. **Spallation Neutron Source** will be completed in FY 2006 (FY 2005 $79.9; FY 2006 $41.8). **Linac Coherent Light Source** has both a PED project (FY 2005 $19.9; FY 2006 $2.5) and a construction project (FY 2005 $29.8; FY 2006 $83.0). There are three **Nanoscale Science Research Centers (NSRCs)** still under construction (FY 2005 $98.5; FY 2006 $50.8), and NSRC PED was completed in FY 2005 (-$2.0). ..... -$52.0

Advanced Scientific Computing Research (FY 2005 $232.5; FY 2006 $207.1)..... -$25.4
Atomic to Macroscopic Mathematics increases (FY 2005 $5.9; FY 2006 $8.5). ASCR continues partnerships with Genomics: GTL, Nanoscale Science and Fusion Energy Sciences (FY 2005 $11.5; FY 2006 $11.5). Funding for computing and networking facilities is reduced as the Center for Computational Sciences at ORNL focuses on the operation of computers acquired in FY 2004 and 2005 as computing resources for SciDAC teams and other DOE users, and procures no upgrades in FY 2006, but initiates a new activity to

evaluate new computer architectures (FY 2005 $123.6; FY 2006 $94.4). Other program changes total +$1.2.

Fusion Energy Sciences (FY 2005 $273.9; FY 2006 $290.6) .....+$16.6
Funds dedicated to ITER preparations increase (FY 2005 $4.9; FY 2006 $6.0); Initial funds are provided for the ITER major item of equipment (FY 2005 $0; FY 2006 $46.0), and ITER related R&D begins (FY 2005 $0; FY 2006 $3.5).....+$50.6

Operation and research in each of the three main facilities is reduced. DIII-D operates 5 weeks in FY 2006 versus 14 weeks in FY 2005 (-$4.3). Alcator C-Mod operates 12 weeks in FY 2006 versus 17 weeks in FY 2005 (-$0.5). NSTX, which operated 17 weeks in FY 2005 does not operate in FY 2006 (-$3.8)..... -$8.6

Other activities in the Science subprogram decrease by $11.7. Other Enabling R&D activities also decrease by $12.1. Other activities in the Facilities Operations subprogram decrease by $1.6. ..... -$25.4

Science Laboratories Infrastructure (FY 2005 $42.0; FY 2006 $40.1) ..... -$1.9
Laboratories Facilities Support subprogram is reduced by 21 percent (FY 2005 $25.9; FY 2006 $20.4). FY 2006 funding includes $3 for Project Engineering and Design of a Pacific Northwest National Laboratory Capability Replacement Laboratory. It also includes $3 in General Plant Projects to refurbish and rehabilitate general purpose infrastructure. Excess Facilities Disposition (FY 2005 $6.1; FY 2006 $14.6) is increased to fund removal of the Bevatron at LBNL. Oak Ridge Landlord activities (FY 2005 $5.0; FY 2006 $5.1) are continued at FY 2005 levels. Health and Safety Improvements subprogram, in response to OSHA and NRC findings, corrected urgent requirements in FY 2004 and 2005 (FY 2005 $5.0; FY 2006 $0).

Safeguards and Security (FY 2005 $72.8; FY 2006 $74.3)..... +$1.5
FY 2006 increase is for protective forces and security systems.

Program Direction (FY 2005 $153.7; FY 2006 $162.7)..... +$9.0
Funding fully supports 999 FTE in Headquarters and Field Operations.

Workforce Development for Teachers and Scientist (FY 2005 $7.6; FY 2006 $7.2) ... -$0.4
Laboratory Science Teacher Professional Development program will support 105 teachers in FY 2006 versus 90 in FY 2005 (+$0.3); Faculty Sabbatical Fellowship will fund 5 faculty in FY 2006 versus 12 in FY 2005 (-$0.3); students participating in the Pre-Service Teacher program is reduced from 69 in FY 2005 to 10 in FY 2006 (-$0.3); other reductions, including reduced support for the Science Bowl, total -$0.1.

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.

(discretionary dollars in thousands)

	FY 2004 Comparable Approp	FY 2005 Comparable Approp	FY 2006 Request to Congress	FY 2006 vs. FY 2005	
Environment					
Environmental Management	6,752,870	7,053,640	6,505,476	-548,164	-7.8%
Office of Civilian Radioactive Waste Management	576,578	572,384	651,447	+79,063	+13.8%
Office Of Legacy Management	62,161	77,137	78,598	+1,461	+1.9%
Total, Environment	**7,391,609**	**7,703,161**	**7,235,521**	**-467,640**	**-6.1%**

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

Environmental Management

(discretionary dollars in thousands)

	FY 2004 Comparable Approp	FY 2005 Comparable Approp	FY 2006 Request to Congress	FY 2006 vs. FY 2005	
Environmental Management					
Defense Site Acceleration Completion	5,433,423	5,725,935	5,183,713	-542,222	-9.5%
Defense Environmental Services	895,015	845,704	831,331	-14,373	-1.7%
Non-Defense Site Acceleration Completion	167,272	157,316	172,400	+15,084	+9.6%
Non-Defense Environmental Services	307,795	288,966	177,534	-111,432	-38.6%
Uranium Enrichment D&D Fund	414,027	495,015	591,498	+96,483	+19.5%
Subtotal, Environmental Management	6,803,505	7,017,921	6,364,978	-652,943	-9.3%
Uranium Enrichment D&D Fund Discretionary Payment	-449,333	-459,296	-451,000	+8,296	+1.8%
Defense environmental management privatization(resc	-15,329	——	——	——	——
Total, Environmental Management	**6,752,870**	**7,053,640**	**6,505,476**	**-548,164**	**-7.8%**

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 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 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. To continue these initiatives, DOE is requesting a total of $6.5 billion in FY 2006.

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 2005 $5.7 billion; FY 2006 $5.2 billion); **Defense Environmental Services** (FY 2005 $866 million; FY 2006 $831 million); **Non-Defense Site Acceleration Completion** (FY 2005 $157 million; FY 2006 $172 million); **Non-Defense Environmental Services** (FY 2005 $289 million; FY 2006 $178 million); **Uranium Enrichment Decontamination and Decommissioning Fund** (FY 2005 $495 million; FY 2006 $591 million).

PROGRAM HIGHLIGHTS

The FY 2006 budget request totals $6.5 billion. This is an 8-percent decrease from the FY 2005 comparable appropriation, the peak year of funding for this program. 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. The FY 2006 request will keep the Rocky Flats Environmental Technology Site in Colorado and Ohio sites on target to close in 2006; continue shipments of transuranic waste to the Waste Isolation Pilot Plant, including the start of remote-handled waste, critical to meeting cleanup and closure goals; and continue to make progress in completing cleanup projects in accordance with applicable laws and regulatory agreements.

In FY 2006, environmental cleanup responsibility for seven sites will transfer to the National Nuclear Security Administration (NNSA). These sites are Kansas City Plant, MO; Lawrence Livermore National Laboratory-Main Site, CA; Lawrence Livermore National Laboratory-Site 300, CA; Nevada Test Site, NV; Pantex Plant, TX; Sandia National Laboratory, NM; and the Separations Process Research Unit, NY. Responsibility for newly generated waste management at Y-12 in TN and Lawrence Livermore National Laboratory in CA will also transfer (NNSA already has responsibility for such activities at its other sites.). These are sites where NNSA is currently the line manager responsible for operations and will have a continuing, long-term mission. This shift of responsibility will enhance integration of cleanup with other site operations and will align responsibility and accountability consistent with the tenets of the NNSA act.

Defense Site Acceleration Completion

(discretionary dollars in thousands)

	FY 2004 Comparable Approp	FY 2005 Comparable Approp	FY 2006 Request to Congress	FY 2006 vs. FY 2005	
Defense Site Acceleration Completion					
2006 Accelerated completions	1,196,189	1,209,844	1,016,508	-193,336	-16.0%
2012 Accelerated completions	2,205,966	2,192,913	1,943,139	-249,774	-11.4%
2035 Accelerated Completions	1,829,922	2,013,018	1,915,454	-97,564	-4.8%
Safeguards and security	291,124	262,942	287,223	+24,281	+9.2%
Technology development and deployment	61,358	59,726	21,389	-38,337	-64.2%
Subtotal, Defense Site Acceleration Completion	5,584,559	5,738,443	5,183,713	-554,730	-9.7%
Use of prior year balances and other adjustments	-151,136	-12,508	——	+12,508	+100.0%
Total, Defense Site Acceleration Completion	**5,433,423**	**5,725,935**	**5,183,713**	**-542,222**	**-9.5%**

PROGRAM DESCRIPTION

The **Defense Site Acceleration Completion** appropriation 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 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. This appropriation includes funding for projects at the Idaho National Laboratory, Oak Ridge Reservation, Ohio Operations Office (Fernald, Mound, Ashtabula, and Battelle Columbus Laboratory), the Hanford Site, the Rocky Flats Environmental Technology Site, the Savannah River Site, the Waste Isolation Pilot Plant (WIPP), and various other locations.

In FY 2006, environmental cleanup responsibility for seven sites previously funded in this appropriation will transfer to the National Nuclear Security Administration (NNSA). These sites are Kansas City Plant, MO; Lawrence Livermore National Laboratory-Main Site, CA; Lawrence Livermore National Laboratory-Site 300, CA; Nevada Test Site, NV; Pantex Plant, TX; Sandia National Laboratory, NM; and the Separations Process Research Unit, NY.

SIGNIFICANT FUNDING CHANGES – FY 2005 to FY 2006 Request ($ in millions)

2006 Accelerated Completions (FY 2005 $1,209.8; FY 2006 $1,016.5) .....-$193.3
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.

Oak Ridge (FY 2005 $110.9; FY 2006 $15.1)..... -$95.7
Funding supports treatment and disposal of legacy waste and restoration activities at the **Oak Ridge Reservation**. Reduced funding reflects completion of disposition of all legacy low-level and mixed waste legacy waste stored at Melton Valley, Y-12 and the **East Tennessee Technology Park** in FY 2005, which will result in a significant mortgage reduction from eliminated storage costs. It also reflects completion of remaining remediation activities at Melton Valley, including capping of solid waste

storage areas 5 and 6, transuranic retrieval and processing, and decommissioning and decontamination of the remaining small facilities.

Ohio (FY 2005 $461.6; FY 2006 $427.0)..... -$34.6
Cleanup activities in Ohio comprise four sites: **Fernald, Miamisburg (Mound), Ashtabula, Battelle Columbus Laboratory**. 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 by the end of FY 2006. Funding decreases at Battelle Columbus and the Miamisburg sites reflect the ramp down of activities to cleanup completion. Funding decreases at Fernald are a result of the completions of the Waste Pits Project, Accelerated Waste Retrieval System, and Silos 1 and 2 operations, while funding increases support soil and remediation activities associated with completion of waste disposition and capping of cells in the On-Site Disposal Facility, decontamination and dismantling of the 18-building Silo Complex and 22-building miscellaneous structures, and workforce transition.

Rocky Flats (FY 2005 $637.4; FY 2006 $574.4) ..... -$63.0
Acceleration of the cleanup at the Rocky Flats Plant continues on track for completion in 2006. After cleanup, the site will become a national wildlife refuge. Funding decreases for waste disposition, reflecting completion of off-site shipments of transuranic waste and disposal of all but a minimal amount of low-level waste in FY 2005; and also decreases for remediation activity and for facility D&D. The budget includes increases for the contractor fee payments as a result of the acceleration of the completion of cleanup and closure of the site.

2012 Accelerated Completions (FY 2005 $2,192.9; FY 2006 $1,943.1) .....-$249.8
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, and Los Alamos National Laboratory.

Idaho (FY 2005 $519.3; FY 2006 $515.5) ..... -$3.8
FY 2006 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 includes increases for the first full year of shipping of remote-handled transuranic waste to WIPP, retrieval activities at the Subsurface Disposal Area, and final disposition of facilities at the Idaho Test Reactor Area, as well as continuing operation at the **Advanced Mixed Waste Treatment Project.** Funding decreases reflect completion of the consolidation of EM-owned spent nuclear fuels and operating efficiencies at the Idaho Nuclear Technology and Engineering Center, and reduced requests for design and other activities related to the sodium-bearing waste project. Construction of the sodium-bearing waste treatment facility begins in FY 2006.

Oak Ridge (FY 2005 $66.0; FY 2006 $90.8) .....+$24.8
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); operation of the **Toxic Substances Control Act (TSCA) Incinerator**; and management of Oak Ridge Reservation's transuranic waste and the **Transuranic Waste Treatment Facility**. In addition, the office conducts cleanup at several off-site locations that were contaminated by DOE materials sold to private companies. Increases are associated with contact-handled transuranic waste storage and processing, including increased transuranic waste

transfers as a result of the completion of Melton Valley cleanup in 2006. Increases also reflect the start of soil removal at the **David Witherspoon site**.

Richland (FY 2005 $503.9; FY 2006 $417.8) ..... -$86.1
Richland Operations Office manages Hanford site cleanup activities of facilities associated with the production of nuclear materials during the Cold War. Request increases funding for ongoing deactivation and decommissioning of facilities within the **Plutonium Finishing Plant Complex**. Decrease in funding reflects acceleration of spent nuclear fuel removal of K Basins. This project will package and move approximately 2,100 tons of degrading spent nuclear fuel, and up to 60 cubic meters of radioactive sludge generated by the degrading fuel, from wet storage in the K Basins near the Columbia River to safer, dry interim storage on the 200 Area Central Plateau. The spent nuclear fuel has been removed from the basins, and dewatering and sludge removal is underway. As a result of contractor performance problem, DOE worked with the contractor to develop a new approach to process sludge directly into a disposable form rather than storing sludge long-term in another facility. Although funding for the overall project declines in FY 2006, reflecting completion of fuel removal and cleanout of the basins in FY 2005, funding to implement the new technical approach to sludge removal increases in FY 2006.

The other major activity funded is the **River Corridor** closure project which decontaminates and decommissions surface facilities, and monitors, mitigates, and remediate chemical and radioactive contaminants in soils and groundwater along the Columbia River by 2012. The request reflects completion of H-Reactor cocooning early in 2006, which concludes the on-going reactor work for the immediate future, and supports continued safe storage of 825 metric tons of irradiated uranium, as well as other waste management activities, and decommissioning and remediation activities. There are also decreased waste volumes anticipated at the Environmental Restoration Disposal Facility reflecting a shift from primarily high volume liquid wastes to smaller volume solid waste burial grounds.

River Protection (FY 2005 $684.5; FY 2006 $625.9) ..... -$58.6
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 2006 request continues design and construction of the Waste Treatment and Immobilization Plant (WTP) and associated facilities, which will be 75 percent complete in FY 2006. Request supports fabrication and delivery of high-level waste melters #1 and #2 and completion of design of the Low Activity Waste Facility. Decrease reflects a slower pace in construction activity in order to address some project issues, including concerns that recent seismic information may require some project modifications; issues regarding contractor schedule performance; safety uncertainties involving generation of hydrogen during operation; and uncertainties regarding classification of tank wastes to be processed through WTP. This slower pace is not expected to affect DOE's commitment to start WTP operations in 2011.

Savannah River (FY 2005 $378.6; FY 2006 $250.3) .....-$128.3
This site treats and disposes of legacy materials and wastes resulting from nuclear materials produced during the Cold War. FY 2006 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. This includes stabilization and packaging of plutonium metals and oxides in the **FB-Line Facility**; stabilization of materials in **H Canyon** facilities, including NNSA-funded efforts to blend highly enriched uranium to low enriched uranium; and the completion of the de-inventory and deactivation of F Area materials processing facilities. Decrease reflects acceleration of the deactivation of F Canyon facilities, which is

about one year ahead of schedule, with the commensurate reduction in operating and surveillance and maintenance costs.

Los Alamos National Laboratory (FY 2005 $40.6; FY 2006 $42.8)..... +$2.2
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 2006.

2035 Accelerated Completions (FY 2005 $2,013.0; FY 2006 1,915.5)..... -$97.5
Provides funding for projects at sites where cleanup is expected to be completed by FY 2035. Includes activities at the Waste Isolation Pilot Plant, Oak Ridge Reservation, Hanford Site, Savannah River Site, and Los Alamos.

Carlsbad (FY 2005 $201.9; FY 2006 $188.1)..... -$13.8
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 2006 request for WIPP supports the start of remote-handled shipments, continuing contact-handled shipments, operation of characterization mobile/modular units at other DOE sites, and the disposal of 10,000 m^3 waste in FY 2006. The decrease reflects completion of upgrades to site infrastructure and of recertification efforts in FY 2005. This is partially offset by funding increases to deploy characterization units to Hanford and Idaho, and increases in transportation infrastructure and carrier services.

Oak Ridge (FY 2005 $46.9; FY 2006 $56.6) ..... +$9.7
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. Increase reflects start of the construction of the final expansion of the EMWMF to accommodate waste volumes generated by accelerated cleanup at East Tennessee Technology Park. Request also reflects completion of defueling stabilization of the **Molten Salt Reactor Experiment** (MSRE) facility.

Richland (FY 2005 $377.2; FY 2006 $314.7) ..... -$62.5
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, 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 2006 request reflects a reduced number of transuranic waste shipments to WIPP, with increased retrieval of suspect transuranic waste from burial grounds; increased treatment and management of groundwater plumes, including installation of an integrated monitoring well network; continuing operation of the waste disposal facilities for low-level and mixed low-level waste; and reduced D&D activities.

River Protection (FY 2005 $391.3; FY 2006 $301.9) ..... -$89.4
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; develops waste retrieval and transfer systems to support disposition of the waste; and carries out interim closure of tanks. The FY 2006 request maintains the tank farm in a safe and compliant manner, continues operation of the 222S Laboratory and the 242A

Evaporator, completes construction of the integrated disposal facility, and starts initial tank waste supplemental treatment. It also supports continued development of the supplemental technology alternative. Decrease reflects uncertainties regarding classification and management of tank wastes.

Savannah River Site (FY2005 $910.0; FY 2006 $951.8) .....+$41.8
This site treats and disposes of legacy materials and wastes resulting from nuclear materials produced during the Cold War. FY 2006 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 nuclear materials and spent nuclear fuel; 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 2006); the start of construction of the **Salt Waste Processing Facility**; cleanup of contaminated soil and groundwater; and decommissioning of contaminated nuclear facilities. Increase reflects the initiation of conceptual design for the Plutonium Disposition Facility to disposition fissile material that cannot go into the MOX process, and the start of operating activities associated with completion of 235-F surveillance capabilities and K-Area Material Storage operational needs.

Los Alamos National Laboratory (FY 2005 $76.1; FY 2006 $99.4).....+$23.3
Request covers cleanup activities at Los Alamos National Lab, including continued remediation activities, groundwater investigations, and deep well installations. Funding increases support an increase in the number of release sites remediated based on the Consent Order between the State of New Mexico and the Department completed in FY 2004.

Nevada Offsites (FY 2005 $7.5; FY 2006 $2.8) **..... -$4.7**
Request addresses contamination at former nuclear testing sites in multiple locations. FY 2006 supports characterization and monitoring efforts to achieve regulatory closure. Decrease reflects less intensive field work and increased emphasis of modeling, data analysis, and lab studies.

Safeguards and Security (FY 2005 $262.9; FY 2006 $287.2).....+$24.3
Ensures appropriate levels of protection for EM facilities and cleanup sites. FY 2006 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 enhancements to meet the Department's revised Design Basis Threat analysis, which elevated the level of response required. The increase reflects security enhancements to the Canister Storage Building at the Hanford Site for long-term storage of nuclear materials, as well as at ETTP, Paducah, and Portsmouth. These increases are partially offset by decreases due to reduced requirements at closure sites, primarily at Rocky Flats. .

Technology Development and Deployment (FY 2005 $59.7; FY 2006 $21.4) ..... -$38.3
Provides technical solutions and alternative technologies to enable accelerated cleanup. Areas of investment are critical high-return activities. Technology Development and Deployment program addresses technology needs being identified by the sites, enabling them to accelerate their cleanup schedules. It is also providing risk reduction assistance to support sites' risk-based end state visions. Decrease reflects reliance on market-driven technology solutions through new cleanup contracts. In addition, request does not include funding for $40.7 million in congressionally-directed projects in FY 2005.

Defense Environmental Services

(discretionary dollars in thousands)

	FY 2004 Comparable Approp	FY 2005 Comparable Approp	FY 2006 Request to Congress	FY 2006 vs. FY 2005	
Defense Environmental Services					
Community and regulatory support	54,528	54,324	62,032	+7,708	+14.2%
Federal contribution to the uranium enrichment	449,333	459,296	451,000	-8,296	-1.8%
Non-closure environmental activities	155,841	101,250	87,368	-13,882	-13.7%
Program direction	258,943	250,834	230,931	-19,903	-7.9%
Subtotal, Defense Environmental Services	918,645	865,704	831,331	-34,373	-4.0%
Use of prior year balances and other adjustments	-23,630	-20,000	——	+20,000	+100.0%
Total, Defense Environmental Services	**895,015**	**845,704**	**831,331**	**-14,373**	**-1.7%**

PROGRAM DESCRIPTION

The **Defense Environmental Services** appropriation 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 appropriation funds management of newly generated waste for the Office of Science. The appropriation has accounts of Community and Regulatory Support, Defense UED&D Fund Contribution, Non-Closure Environmental Activities, and Program Direction. Defense Environmental Service activities are funded at all defense sites across the complex.

Responsibility for cleanup and waste management activities at seven defense sites will transfer to the National Nuclear Security Agency in FY 2006. These include activities previously funded in this appropriation, including management of newly generated waste at Y-12 and Lawrence Livermore National Laboratory; and community and regulatory support and program direction associated with the transferred sites.

SIGNIFICANT FUNDING CHANGES – FY 2005 to FY 2006 Request ($ in millions)

Community and Regulatory Support (FY 2005 $54.3; FY 2006 $62.0) ..... +$7.7
FY 2006 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. Funding changes are due to small increases in requirements at a number of sites, such as increases for Payments-in-Lieu of Taxes at Hanford and Savannah River Sites, legally required economic assistance payments to New Mexico, and regulatory and public involvement requirements as the final Record of Decision is completed at Rocky Flats.

Non-Closure Environmental Activities (FY 2005 $101.3; FY 2006 $87.4)..... -$13.9
Activities funded indirectly support the Environmental Management (EM) core mission of risk reduction and closure or other Departmental missions.

Headquarters (FY 2005 $32.7; FY 2006 $32.6) ..... -$0.1
FY 2006 request supports continued policy, management, and technical support of the EM program, including efforts to accomplish workforce planning; conduct crosscutting program analysis; and provide a central information database for the program. There is no significant change in funding.

Oak Ridge (FY 2005 $32.8; FY 2006 $18.3) ..... -$14.5
Funding provides for management of newly generated waste for DOE's Science program at the **Oak Ridge National Laboratory**. In addition, EM provides for EM-related post-contract benefits to former and disabled contract employees on the Oak Ridge Reservation. In FY 2006, these activities will be funded entirely in the Uranium Enrichment Decontamination and Decommissioning Fund, which accounts for the funding decrease.

Rocky Flats (FY 2005 $2.3; FY 2006 $2.7)..... +$0.4
FY 2006 request supports site litigation activities and worker liabilities related to former site management and operations, and existing site contractor closeouts. Funding also supports transition activities for the transfer of Rocky Flats to the U.S. Fish and Wildlife Service for management as a wildlife refuge. There is no significant change in funding.

Savannah River (FY 2005 $16.3; FY 2006 $19.3)..... +$3.0
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,** as well as U.S. owned domestic and **Foreign Research Reactor Fuel**. Although the National Nuclear Security Administration is now responsible for management of the Foreign Research Reactor Program, EM retains responsibility for safe storage of the fuels. FY 2006 request supports safe storage of non-legacy 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. Increase in funding reflects the relative increase in amounts of foreign research reactor fuel in L-Basin compared to EM legacy fuels. Operating cost is split between this account and other EM accounts based on the relative amount of fuels being stored.

Idaho National Laboratory (FY 2005 $16.3; FY 2006 $12.7)..... -$3.6
Responsible for interim storage, preparation and disposition of certain non-legacy, non-DOE owned spent nuclear fuel, such as domestic and Foreign Research Reactor Fuel. Although the National Nuclear Security Administration is now responsible for management of the Foreign Research Reactor Program, EM retains responsibility for safe storage of those fuels. Funding in this account also supports construction and operation of the Spent Nuclear Fuel Dry Storage facility. FY 2006 request supports safe storage of non-legacy spent nuclear fuels and transfer of fuels to dry storage. Overall decrease is due to the end of construction funding for the Spent Nuclear Fuel Dry Storage Project in FY 2005, partially offset by an increase in operating funds for the project in FY 2006.

Program Direction (FY 2005 $250.8; FY 2006 $230.9)..... -$19.9
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 1,350 FTE; 945 of these FTE are located in field offices, and 140 are assigned to the EM Consolidated Business Center. Reduced funding reflects management's on-going efforts to meet closure schedules and limit non-labor expenses complex-wide.

D&D Fund Deposit (FY 2005 $459.3; FY 2005 $451.0)..... -$8.3
Provides EM program's contribution to the Uranium Enrichment Decontamination and Decommissioning Fund.

Non-Defense Site Acceleration Completion

(discretionary dollars in thousands)

	FY 2004 Comparable Approp	FY 2005 Comparable Approp	FY 2006 Request to Congress	FY 2006 vs. FY 2005	
Non-Defense Site Acceleration Completion					
2006 Accelerated completions	39,446	36,687	14,954	-21,733	-59.2%
2012 Accelerated completions	132,906	112,471	128,950	+16,479	+14.7%
2035 Accelerated completions	4,920	8,158	28,496	+20,338	+249.3%
Subtotal, Non-Defense Site Acceleration Completion	177,272	157,316	172,400	+15,084	+9.6%
Use of prior year balances and other adjustments	-10,000	——	——	——	——
Total, Non-Defense Site Acceleration Completion	**167,272**	**157,316**	**172,400**	**+15,084**	**+9.6%**

PROGRAM DESCRIPTION

The **Non-Defense Site Acceleration Completion** appropriation 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 Office of Legacy Management for long-term surveillance and maintenance. Non-Defense Site Acceleration Completion provides funding in several accounts: 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, the Atlas Mill Site in Moab, Utah, and various other locations.

SIGNIFICANT FUNDING CHANGES – FY 2005 to FY 2006 Request ($ in millions)

2006 Acceleration Completions (FY 2005 $36.7; 2006 $15.0) ..... -$21.7
Activities include non-defense sites and projects that will be completed in or before FY 2006 (for example, Stanford Linear Accelerator Center). Decreased funding reflects the conclusion of projects and sites at the Chicago Operations Office and other locations.

Chicago (FY 2005 $29.2; FY 2006 $7.2)..... -$22.0
FY 2006 request funds long-term response actions and long-term stewardship activities as well as soil and water remediation at **Argonne National Laboratory-East** and **Brookhaven National Laboratory.** Funding decrease reflects the completion of remedial action projects at Brookhaven in FY 2005.

Consolidated Business Center (FY 2005 $7.0; FY 2006 $7.7) ..... +$0.7
FY 2006 request funds soil and water remediation activities at **Lawrence Berkeley National Laboratory**, the **Stanford Linear Accelerator Center**, and the **Inhalation Toxicology Laboratory**. No significant change in funding supports continued progress and closures.

2012 Acceleration Completions (FY 2005 $112.5; FY 2006 $129.0) .....+$16.5
Activities include non-defense sites and projects that will be completed in or before FY 2012. Includes cleanup and decontamination and decommissioning activities at the **Chicago**

Operations Office (Argonne National Laboratory-East and Brookhaven), **Ohio Operations Office (West Valley Demonstration Project)**, and the **Consolidated Business Center (Energy Technology Engineering Center (ETEC) and California site)**. This account also includes non-defense spent nuclear fuel operations funded through the **Idaho National Laboratory**.

Chicago (FY 2005 $13.9; FY 2006 $37.6).....+$23.7
Primarily funds decontamination and decommissioning activities for the **Graphite Research Reactor** and the **High Flux Beam Reactor** at the **Brookhaven National Laboratory.** FY 2006 request continues pile removal of the Graphite Reactor and continue planning and decontamination and decommissioning activities at the High Flux Beam Reactor. Also funds completion of decontamination and decommissioning efforts at the **Zero Power Reactor** at **Argonne National Laboratory-East**. FY 2006 increase provides for a significant increase in scope associated with the Graphite Research Reactor and support for the accelerated cleanup of the Zero Power Reactor.

West Valley Demonstration Project (FY 2005 $73.6; FY 2006 $77.1)..... +$3.5
Funds solid waste stabilization and disposition activities and nuclear facility decontamination and decommissioning activities at West Valley. FY 2006 increase reflects both the completion of legacy low-level Class A waste disposal, a significant ramp up in decontamination efforts at the former spent fuel reprocessing facility, and award of an indefinite delivery/indefinite quantity contract to accelerate risk reduction.

Consolidate Business Center (FY 2005 $18.3; FY 2006 $9.1) ..... -$9.2
Request continues decontamination and decommissioning activities at **ETEC** and the decreased reflects ramp down in advance of completion in FY 2007.

Idaho National Laboratory (FY 2005 $6.7; FY 2006 $5.2) ..... -$1.5
Request continues to maintain non-defense fuels stored on site at the Idaho National Laboratory including fuel from **Three Mile Island-2** and fuels stored **at Fort St. Vrain** in Colorado. Decrease reflects completion of repackaging of fuel at the **Lynchburg Technology Center** in Virginia at the direction of Congress.

2035 Acceleration Completions (FY 2005 $8.2; FY 2006 $28.5).....+$20.3
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**, New Mexico. Consolidated Business Center manages the remediation of the former Atlas Mill site. Increase in funding reflects the ramp up in remedial activities in 2006. Those activities include completion of detailed reclamation design and the Remedial Action Plan, and initiate construction of the final groundwater remedial action systems.

Non-Defense Environmental Services

(discretionary dollars in thousands)

	FY 2004 Comparable Approp	FY 2005 Comparable Approp	FY 2006 Request to Congress	FY 2006 vs. FY 2005	
Non-Defense Environmental Services					
Community and regulatory support	1,030	89	90	+1	+1.1%
Environmental cleanup projects	43,589	45,715	46,113	+398	+0.9%
Non-closure environmental activities	273,178	243,162	131,331	-111,831	-46.0%
Subtotal, Non-Defense Environmental Services	317,797	288,966	177,534	-111,432	-38.6%
Use of prior year balances and other adjustments	-10,002	——	——	——	——
Total, Non-Defense Environmental Services	**307,795**	**288,966**	**177,534**	**-111,432**	**-38.6%**

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.

SIGNIFICANT FUNDING CHANGES – FY 2005 to FY 2006 Request ($ in millions)

Community and Regulatory Support (FY 2005 $0.1; FY 2006 $0.1) $0
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 Consolidated Business Center, California Site Support. FY 2006 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 funds 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.

Environmental Cleanup Projects (FY 2005 $45.7; FY 2006 $46.1) ..... +$0.4
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. FY 2006 request supports ongoing surveillance and maintenance activities, deactivation and decommissioning (D&D) activities, including completion of washing, drying and movement of fuel to above ground storage, the initiation of D&D of the support facilities and structures, and completion of the draining of sodium from the Fuel Storage Facility vessel and Interim Decay vessel to the Sodium Storage Facility.

Non-Closure Environmental Activities (FY 2005 $243.2; FY 2006 $131.3) .....-$111.9
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 and pre-existing liabilities. Decrease in funding results primarily from cessation of cold standby activities at Portsmouth, and reduced requirements for construction activities at the two depleted uranium hexafluoride conversion facilities at Portsmouth and Paducah.

East Tennessee Technology Park (ETTP) (formerly K-25)
(FY 2005 $7.9; FY 2006 $1.5)..... -$6.4
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. 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. Decrease in funding reflects ramp down in cylinder shipments from 3,200 in FY 2005 to 1,600 cylinders in FY 2006. FY 2006 request also supports the management, maintenance, and storage of the uranium hexafluoride cylinders awaiting shipment.

Paducah (FY 2005 $55.5; FY 2006 $50.8)..... -$4.7
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 2006 request supports continued construction of a **Depleted Uranium Hexafluoride (DUF6) Conversion Facility**, along with the management, maintenance, and storage of uranium hexafluoride cylinders awaiting conversion. Decrease in funding reflects reduced resource requirements for the construction of the DUF6 Plant.

Portsmouth (FY 2005 $179.8; FY 2006 $78.9) .....-$100.8
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 2006 request reflects the cessation of cold standby activities; 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. Decrease primarily reflects the planned cessation of cold standby activities permitting transition of facilities for decontamination and decommissioning and reduced resource requirements for the construction of the DUF6 Plant.

Uranium Enrichment Decontamination and Decommissioning Fund

(discretionary dollars in thousands)

	FY 2004 Comparable Approp	FY 2005 Comparable Approp	FY 2006 Request to Congress	FY 2006 vs. FY 2005	
Uranium Enrichment Decontamination and Decommissioning Fund					
Decontamination and decommissioning	363,328	415,655	571,498	+155,843	+37.5%
Uranium/thorium reimbursement	50,699	79,360	20,000	-59,360	-74.8%
Total, Uranium Enrichment D&D Fund	**414,027**	**495,015**	**591,498**	**+96,483**	**+19.5%**

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 2005 to FY 2006 Request ($ in millions)

Decontamination and Decommissioning
(FY 2005 $415.7; FY 2006 $571.6) .....+$155.9
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 (ETTP) in Oak Ridge, Tennessee. Increased funding reflects acceleration of activities leading to closure of ETTP and resources to transition facilities previously held in cold standby at Portsmouth.

Oak Ridge East Tennessee Technology Park (ETTP) (formerly K-25)
(FY 2005 $213.3; FY 2006 $281.3) .....+$68.0
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 2006 request supports continued decontamination and decommissioning activities for **K-25** and **K-27**, initiation of deactivation and demolition at **K-29, K-31** and **K-33**, ramp up of Zone 2 remedial actions, and continued surveillance and maintenance. Increase enables acceleration of decommissioning actions leading to early closure in FY 2008.

Paducah (FY 2005 $111.3; FY 2006 $98.0) ..... -$13.3
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 2006 request supports initiation of a remedial action to treat groundwater at C-400 contaminated with a dense phase liquids (DNAPLs), continues characterization and disposition activities of **DOE Material Storage Areas,** and continues decontamination and decommissioning of the **C-410 Complex**. Decrease reflects primarily a drop in funding for pension plans after making a substantial payment in FY 2005 (-$10.0) and reduced disposal requirements in FY 2006.

Portsmouth (FY 2005 $91.0; FY 2006 $192.2) .....+$101.2
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 2006 request supports continued accelerated disposition of legacy mixed low-level and low-level wastes, and safe storage of the remaining inventory awaiting disposal. Portsmouth will transistion from cold standby to final shutdown and begin preliminary decontaminaiton and decommissioning activities. Activities will include initiating plans for an integrated final decommissiong strategy for the diffusion facilities. DOE will develop procurement strategies and evaluate the regulatory transition from the Nuclear Regulatory Commission to DOE. This will require additional regulatory coordination with the state and the Environmental Protection Agency.

Uranium/Thorium Reimbursements (FY 2005 $79.4; FY 2006 $20.0)..... -$59.4
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). Reduced request reflects payment of all or nearly all of the backlog of unpaid claims to uranium/thorium licensees in FY 2005. Request level is sufficient to pay all new claims submitted in 2005.

Legacy Management

(discretionary dollars in thousands)

	FY 2004 Comparable Approp	FY 2005 Comparable Approp	FY 2006 Request to Congress	FY 2006 vs. FY 2005	
Office Of Legacy Management					
Energy Supply					
Legacy management	28,189	30,883	33,522	+2,639	+8.5%
Use of prior year balances and other adjustments	——	-266	——	+266	+100.0%
Total, Energy Supply	28,189	30,617	33,522	+2,905	+9.5%
Other Defense Activities					
Office of Legacy Management	11,615	33,425	31,421	-2,004	-6.0%
Worker and community transition	10,666	——	——	——	——
Program direction	13,191	13,095	13,655	+560	+4.3%
Total, Office of Legacy Management	35,472	46,520	45,076	-1,444	-3.1%
Use of prior year balances and other adjustments	-1,500	——	——	——	——
Total, Other Defense Activities	33,972	46,520	45,076	-1,444	-3.1%
Total, Office Of Legacy Management	**62,161**	**77,137**	**78,598**	**+1,461**	**+1.9%**

PROGRAM DESCRIPTION

The **Office of Legacy Management** (LM) 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 2006, funding for these activities is requested within the Energy Supply (non-defense) and Other Defense Activities (defense) appropriations.

This program supports 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 current Departmental needs.

PROGRAM HIGHLIGHTS

The FY 2006 request provides $45.1 million to carry out legacy management functions for defense activities and $33.5 million for energy supply activities. FY 2006 will focus on the establishment of an effective mechanism to deliver contractor pension and benefit payments at sites where legacy cleanup has been completed and post closure responsibility has been transferred to LM.

SIGNIFICANT FUNDING CHANGES – FY 2005 to 2006 Request ($ in millions)

Energy Supply

Legacy Management (FY 2005 $30.6; FY 2006 $33.5) ..... +$2.9
Increase reflects higher than estimated requirements for post-retirement life, medical, and long-term disability benefits.

Other Defense Activities

Legacy Management (FY 2005 $33.4; FY 2006 $31.4) ..... -$2.0
Funding will support working with the closure site contractors to enhance the delivery system for pension and health benefits for closure site. This funding is needed to reimburse the anticipated costs of a closure site contractor to procure the services of a subcontractor to assist that contractor and others who may elect to use it in administering former contractor employee pension and medical benefits once these sites are closed and transferred to Legacy Management (+$10.5), which is offset by reductions for congressionally-directed projects in FY 2005.

Program Direction (FY 2005 $13.1; FY 2006 $13.7)..... +$0.6
Increase funds salaries and benefits, travel, and other related expenses for 81 full time equivalent employees.

Civilian Radioactive Waste Management

(discretionary dollars in thousands)

	FY 2004 Comparable Approp	FY 2005 Comparable Approp	FY 2006 Request to Congress	FY 2006 vs. FY 2005	
Office Of Civilian Radioactive Waste Management					
Defense Nuclear Waste Disposal					
Defense nuclear waste disposal	387,699	229,152	351,447	+122,295	+53.4%
Nuclear Waste Disposal					
Repository program	109,152	263,872	218,536	-45,336	-17.2%
Program direction	79,727	79,360	81,464	+2,104	+2.7%
Total, Nuclear Waste Disposal	188,879	343,232	300,000	-43,232	-12.6%
Total, Civilian Radioactive Waste Management	**576,578**	**572,384**	**651,447**	**+79,063**	**+13.8%**

Funding for the **Office of Civilian Radioactive Waste Management** is requested in two accounts within the Energy and Water Development Appropriation: Nuclear Waste Fund and Defense Nuclear Waste Disposal. All 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.

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, 2004, there is a total of $22.7 billion in fees and interest collected in the Nuclear Waste Fund, of which $6.2 billion has been disbursed for a balance of $16.5 billion.

The Administration is committed to completing the license application process and constructing the repository expeditiously, always mindful of health, safety, and sound science. To accomplish this, the budget includes $651 million for the repository in 2006. The Administration believes that the fees currently paid to the government by utilities to finance the repository should be treated as offsetting collections against the appropriation from the Nuclear Waste Fund. The amount credited as offsetting collections should not exceed the amount appropriated for the repository.

Defense Nuclear Waste Disposal

Congress provides appropriations for the disposal of high-level waste generated over the past 50 years by defense activities of the U.S. military, the cleanup of World War II- era weapons plants, and the reduction of the nation's nuclear arsenal.

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. DOE is in the process of developing a license application, which will be submitted to the Nuclear Regulatory Commission (NRC) to authorize construction of a repository. DOE had planned to submit the license application in December of 2004. However, several pronouncements have required DOE to delay submission of the license application:

- The Environmental Protection Agency's (EPA) rule for radiation protection at Yucca Mountain has been vacated by the United States Court of Appeals in Washington, D.C. The NRC rule under which the license application will be evaluated must confirm to this EPA standard.
- The NRC ruling that struck down DOE's initial certification of the availability of its licensing documentation on the licensing Support Network.

In addition to the development of a repository, the development and operation of transportation systems are critical to support the initial shipments of high-level waste to Yucca Mountain. In FY 2006, transportation activities will focus on the design, procurement, and operational readiness efforts to support the overall CRWM mission.

SIGNIFICANT FUNDING CHANGES – FY 2005 to FY 2006 Request ($ in millions)

Nuclear Waste Fund

Yucca Mountain Project (FY 2005 $407.6; FY 2006 $427.3) .....+$19.7
Funding will allow the program to proactively participate in the licensing proceedings needed to support the licensing process. Funding increase supports emphasis on development of the Fuel Handling Facility which is critical to initial operational capability (+9.2) and the development of preliminary designs for waste packages (+14.5). Funding will provide necessary site safety and/or infrastructure upgrades to the Exploratory Shaft Facility in preparation for receipt of construction authorization from the NRC (+$12.2).

Transportation (FY 2005 $32.7; FY 2006 $85.4) .....+$52.7
Increase in funds provides for the resumption of design activities for the procurement of prototypes for escort, buffer and cask rail cars (+17.0) for the National Transportation Program. In addition, the increased funding will support critical engineering and design work for the Nevada rail line and associated support facilities to include procurement of long-lead equipment and trackway (+23.4).

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.

(discretionary dollars in thousands)

	FY 2004 Comparable Approp	FY 2005 Comparable Approp	FY 2006 Request to Congress	FY 2006 vs. FY 2005	
Corporate Management					
Departmental Administration	109,276	119,284	130,259	10,975	+9.2%
Inspector General	39,229	41,176	43,000	1,824	+4.4%
Security and Safety Performance Assurance	304,467	306,099	301,095	-5,004	-1.6%
Environment, Safety and Health	165,230	141,096	107,029	-34,067	-24.1%
Hearings and Appeals	4,809	4,283	4,353	70	+1.6%
Total, Corporate Management	**623,011**	**611,938**	**585,736**	**-26,202**	**-4.3%**

The Department's Corporate Management includes the following organizations:

Departmental Administration

Inspector General

Security and Safety Performance Assurance

Environmental, Safety and Health

Hearings and Appeals

Departmental Administration

(discretionary dollars in thousands)

	FY 2004 Comparable Approp	FY 2005 Comparable Approp	FY 2006 Request to Congress	FY 2006 vs. FY 2005	
Departmental Administration					
Administrative operations:					
Salaries and expenses:					
Office of the Secretary	4,233	4,644	5,399	755	+16.3%
Board of contract appeals	651	648	648	——	——
Chief information officer	86,159	94,678	106,177	11,499	+12.1%
Congressional and intergovernmental affairs	4,430	4,826	5,089	263	+5.4%
Economic impact and diversity	6,127	5,922	6,182	260	+4.4%
General counsel	21,163	21,774	24,217	2,443	+11.2%
Management, budget and evaluation	105,408	108,558	111,806	3,248	+3.0%
Policy and international affairs	15,383	15,947	19,806	3,859	+24.2%
Public affairs	3,837	2,459	4,504	2,045	+83.2%
Competitive sourcing initiative (A-76)	——	2,480	3,000	520	+21.0%
Total, Administrative operations	247,391	261,936	286,828	24,892	+9.5%
Cost of work for others	69,682	71,048	80,723	9,675	+13.6%
Subtotal, Departmental Administration (gross)	317,073	332,984	367,551	34,567	+10.4%
Use of prior year balances and other adjustments	-10,650	——	——	——	——
Funding from other defense activities	-86,168	-91,700	-87,575	4,125	+4.5%
Total, Departmental Administration (gross)	317,073	332,984	367,551	34,567	+10.4%
Miscellaneous revenues	-110,979	-122,000	-149,717	-27,717	-22.7%
Total, Departmental Administration (Net)	**109,276**	**119,284**	**130,259**	**10,975**	**+9.2%**

PROGRAM DESCRIPTION

The **Departmental Administration** (DA) appropriation 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 appropriation. The DA appropriation 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 2004 Actual	FY 2005 Estimate	FY 2006 Estimate
Business Line Activities			
Supplies	2,759	2,759	2,759
Mail Services	2,389	2,314	2,232
Photocopying	2,242	2,249	2,271
Printing and Graphics	3,053	2,993	2,993
Building Occupancy	62,639	63,481	63,926
Telephones	8,201	9,161	9,161
Desktop	943	908	908
Networking	5,925	5,920	5,920
Contract Closeout	1,035	1,078	1,048
Payroll and Personnel	4,270	4,217	4,416
Corporate Training Center	700	409	643
Project Management Dev Program	2,498	1,000	1,000
Standard Acctg & Reporting Sys.	0	0	3,500
Indirect	120	120	120
Total, Working Capital Fund	**96,774**	**96,609**	**100,897**

PROGRAM HIGHLIGHTS

The FY 2006 request provides $5.4 million for 34 full-time equivalent employees within the Office of the Secretary. This request also provides $281.4 million for salaries and benefits, travel, contractual services, and program support expenses for 1,135 full-time equivalent employees for the other organizations within the DA account. The Cost of Work for Others and Revenues are budgeted at $80.7 million and -$149.7 million, respectively. Within the request for Cost of Work for Others is $40 million for safeguards and security activities in FY 2006.

SIGNIFICANT FUNDING CHANGES – FY 2005 to 2006 Request ($ in millions)

Office of the Secretary (FY 2005 $4.6; FY 2006 $5.4) ..... +$0.8
Increase reflects the full effect of the FY 2005 pay raise and the partial effect of the FY 2006 pay raise for 34 FTE.

Office of Management, Budget and Evaluation (FY 2005 $108.6; FY 2006 $111.8) ... +$3.2
Increase reflects the full effect of the FY 2005 pay raise and the partial effect of the FY 2006 pay raise (+$4.0) which is offset by reductions in travel (-$0.2), support services (-$0.4) and other related expenses (-$0.2).

Office of the Chief Information Officer (FY 2005 $94.7; FY 2006 $106.2) .....+$11.5
Program Direction increase supports the construction of a Continuity of Operations (COOP) and Continuity of Government (COG) site, disaster recovery infrastructure, licensing and maintenance requirements, public key infrastructure operations, email and messaging support and hardware, as well as software and information technology support.
(FY 2005 $38.1; FY 2006 $51.1) .....+$13.0

Cyber Security increase supports cyber security policy planning and risk management (+$3.4), training ($2.7) and Engineering and Assessments ($1.2)
(FY 2005 $24.7; FY 2006 $32.0). ..... +$7.3

Corporate Management Information Program – I-MANAGE decreases overall by $3.4 which is due to the implementation of STARS in FY 2005, migration to E-Travel System, and the implementation of the Data Warehouse. Decrease is offset by increases in eProcurement, Collaborative tools, EContent Management System and the Standard Budget System. Other reductions were made in Architecture and Planning and Modernization Initiatives. Increase of $0.5 is provided to facilitate continuity of operations. (FY 2005 $31.9; FY 2006 $23.1)..... -$8.8

General Counsel (FY 2005 $21.8; FY 2006 $24.2)..... +$2.4
Increase will support 144 FTE and the full effect of the FY 2005 pay raise and the partial effect of the FY 2006 pay raise. Increase also reflects additional support services for intellectual property, alternate dispute resolution, and information technology services.

Office of Policy and International Affairs (FY 2005 $15.9; FY 2006 $19.8) ..... +$3.9
Increase supports 120 FTE and reflects the full effect of the FY 2005 pay raise and the partial effect of the FY 2006 pay raise (+$2.7). Increase also reflects +$1.0 for technical analyses, and contract support for the Climate Change Technology Program (CCTP). Slight increases in travel (+$0.2) and other related expenses (+$0.2) is offset by a reduction in support service contracts (-$0.2).

Public Affairs (FY 2005 $2.5; FY 2006 $4.5)..... +$2.0
Increase will support 26 FTE, an increase of 10 over the FY 2005 on-board level. Increase is needed to effectively manage DOE's public affairs activities.

Competitive Sourcing Initiative (FY 2005 $2.5; FY 2006 $3.0) ..... +$0.5
Increase reflects DOE's commitment to support the implementation of the competitive sourcing goals in the President's Management Agenda. Additional funding covers the costs of implementing corporate competitive sourcing activities and studies and will support complex-wide competitive sourcing costs, including contractor support costs for feasibility and functional area studies, and implementation costs.

Cost of Work for Others (FY 2005 $71.0; FY 2006 $80.7)..... +$9.7
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 the evaluation of leaking underground fuel tanks and structural inspection of dams and water contaminants.

Revenues (FY 2005 -$122.0; FY 2006 -$149.7)..... -$27.7
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 the evaluation of leaking underground fuel tanks and structural inspection of dams and water contaminants. Change also reflects increased estimates for the federal administrative charge and for handling and basin storage of spent fuel cores for the Department of Navy.

Defense Related Administrative Support (FY 2005 -$91.7; FY 2006 -$87.6)..... +$4.1
Change reflects the proportional contribution from the Other Defense Activities appropriation for DA costs. FY 2006 funding represents 31 percent of DA administrative costs, which is the approximate level of defense related activities in the FY 2006 request (not including NNSA)

All Other Departmental Administration Offices (FY 2005 $11.4; FY 2006 $12.0)..... +$0.6
Increase in remaining DA support accounts is the result of the full effect of the FY 2005 pay raise and partial effect of the FY 2006 pay raise.

Inspector General

(discretionary dollars in thousands)

	FY 2004 Comparable Approp	FY 2005 Comparable Approp	FY 2006 Request to Congress	FY 2006 vs. FY 2005	
Office of Inspector General	**39,229**	**41,176**	**43,000**	**1,824**	**+4.4%**

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 2006 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 2005 to 2006 Request ($ in millions)

Inspector General (FY 2005 $41.2; FY 2006 $43.0) ..... +$1.8
Increase reflects 16 additional FTE from the FY 2005 level of 263 FTE. In addition, funding provides analytical support to conduct additional performance audits and meet requirements associated with the reviews of DOE's critical management challenge areas.

Security and Safety Performance Assurance

(discretionary dollars in thousands)

	FY 2004 Comparable Approp	FY 2005 Comparable Approp	FY 2006 Request to Congress	FY 2006 vs. FY 2005	
Office Of Security And Safety Performance Assurance					
Other Defense Activities					
Nuclear safeguards and security	185,369	183,845	176,878	-6,967	-3.8%
Security investigations	54,234	44,561	48,725	+4,164	+9.3%
Program direction	71,639	77,693	75,492	-2,201	-2.8%
Subtotal, Office of Security and Performance Assurance	311,242	306,099	301,095	-5,004	-1.6%
Use of prior year balances and other adjustments	-6,775	——	——	——	——
Total, Security and Safety Performance Assurance	**304,467**	**306,099**	**301,095**	**-5,004**	**-1.6%**

PROGRAM DESCRIPTION

The Office of **Security and Safety Performance Assurance** (SSA) is responsible for the development, promulgation, and evaluation of security programs and the oversight of safeguards and security; cyber security; emergency management; and environment, safety, and health programs throughout DOE. Funding supports activities in the following areas.

Nuclear Safeguards and Security consists of Operational Support, Technology and System Development, and the Classification, Declassification, and Controlled Information Program.

Operational Support includes support for the following activities. The *National Training Center* develops and maintains the proficiency and competency of DOE safeguards and security and safety personnel. The *Nuclear Materials Accountability* activity provides information necessary to track nuclear material, primarily within the United States, for the purposes of satisfying statutory requirements and international obligations; and developing and/or providing protection of the material. *Specialized Security Support* provides funding for risk management, vulnerability assessments, and safeguards and security system performance evaluations; engineering and technical support in evaluating DOE national security policy development requirements; support for a counter-terrorist capability to detect, assess, and protect DOE facilities and employees from adversarial use of Nuclear/Biological/Chemical weapons of mass destruction; the Safeguards and Security Information Management System (SSIMS); and the Foreign Visits and Assignments program that develops policies and implements programs to manage the security aspects of DOE interactions with foreign nationals. *Headquarters Security* provides for the security protective force engaged in the protection of employees in the National Capital Area, as well as the protection of classified information and facilities. Also, provides the management of the DOE Continuity of Operations (COOP) and Continuity of Government programs (COG).

Technology and Systems Development develops and deploys new and innovative security technologies to deal with today's threat environment for national security. Identifies and evaluates security vulnerabilities throughout DOE and then leverages technology solutions to enhance the operational capability to meet these emerging threat scenarios.

Classification, Declassification, and Controlled Information Program ensures that DOE meets its statutory responsibility to implement the government-wide program to classify and declassify nuclear weapons-related technology and to implement the requirements contained in Executive Order 12958 to classify other information that is critical to the national security.

Security Investigations manages all security background investigations associated with providing access authorization to DOE federal and contract personnel who, in the performance of their official duties, require access to classified information or certain quantities of special nuclear material.

Program Direction provides the federal staffing resources required to provide overall direction and execution including the Office of Security (SO) and the Office of Independent Oversight and Performance Assurance (OA). Funding also provides support for centralized leadership in resolving Defense Nuclear Facilities Safety Board issues. The OA conducts independent oversight activities of nuclear safeguards and security, cyber security, emergency management, and environment, safety and health programs throughout DOE and provides accurate, comprehensive analysis of the effectiveness of these programs to senior DOE leadership.

SIGNIFICANT FUNDING CHANGES – FY 2005 to 2006 Request ($ in millions)

FY 2006 **Security and Safety Performance Assurance** request is **$301.1 million**, about 1.6 percent less than the FY 2005 comparable appropriation.

Nuclear Safeguards and Security (FY 2005 $183.8; FY 2006 $176.8)..... -$7.0
Decrease in classification, declassification activities due to reprioritization that has eliminated or deferred work; the elimination of the Information Security activities due to efficiencies gained in the reorganization of SSA; and a reduction in Headquarters Support due to the completion of the purchase of needed equipment in FY 2005.

Security Investigations (FY 2005 $44.6; FY 2006 $48.8)..... +$4.2
Increase reflects increases in expected case load of a net 945 cases in National Agency Checks and in "Q" reinvestigations of 684 cases.

Program Direction (FY 2005 $77.7; FY 2006 $75.5)..... -$2.2
Decrease reflects a reduction in workforce due to the efficiencies gained in the formation of SSA, offset by an increase in Support Services including Cyber Security Appraisals and Safeguards and Security appraisals.

Environment, Safety and Health

(discretionary dollars in thousands)

	FY 2004 Comparable Approp	FY 2005 Comparable Approp	FY 2006 Request to Congress	FY 2006 vs. FY 2005	
Office Of Environment, Safety And Health					
Energy Supply					
Office of environment, safety and health (non-defense)	6,867	7,936	9,100	+1,164	+14.7%
Program direction	15,697	19,842	20,900	+1,058	+5.3%
Use of prior year balances and other adjustments	——	-285	——	+285	+100.0%
Total, Energy Supply	22,564	27,493	30,000	+2,507	+9.1%
Other Defense Activities					
Environment, safety and health (defense)	120,213	108,352	56,483	-51,869	-47.9%
Program direction	22,953	20,251	20,546	+295	+1.5%
Subtotal, Other Defense Activities	143,166	128,603	77,029	-51,574	-40.1%
Use of prior year balances and other adjustments	-500	-15,000	——	+15,000	+100.0%
Total, Other Defense Activities	142,666	113,603	77,029	-36,574	-32.2%
Total, Environment, Safety And Health	**165,230**	**141,096**	**107,029**	**-34,067**	**-24.1%**

The **Office of Environment, Safety and Health** (ESH) is funded in two appropriations within the Energy and Water Development Appropriations. Defense-related activities are funded in the Other Defense Activities appropriation 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 appropriation and support Policy, Standards and Guidance, DOE-Wide Environment, Safety, and Health, and Program Direction.

PROGRAM DESCRIPTION

ESH 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. ESH 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 ESH 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. ESH serves as DOE's advocate to assure that agency interests are reflected in the formulation of environmental regulations and standards. ESH develops environment, safety, and health directives and policies, performs Price-Anderson enforcement, and funds radiation health studies. ESH 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.

Corporate Safety Programs serve a crosscutting safety function for the DOE and its stakeholders in assessing, facilitating, achieving and assuring excellence and continuous improvement in safety management and performance in the conduct of its 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. ESH 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 Island. The RERF epidemiologic studies and medical surveillance program provides for the life span study of the Hiroshima and Nagasaki exposed population.

The **Employees Compensation Program** will continue record search activities in support of the Department of Labor's implementation of the Energy Employees Occupational Illness Compensation Program Act, Part E.

SIGNIFICANT FUNDING CHANGES – FY 2005 to 2006 REQUEST ($ in millions)

Energy Supply

Policy, Standards and Guidance (FY 2005 $3.2; FY 2006 $3.8) ..... +$0.6
Increase in funding supports expenditures for the increased Institute for Nuclear Power Operations fee and shift to the implementation phase of the Environmental Management Systems.

DOE-Wide ES&H Programs (FY 2005 $4.7; FY 2006 $5.3) ..... +$0.6
These programs improve worker and nuclear facilities safety and protect the public and the environment through the efficient management of several DOE-wide activities. Increase in funding supports the DOE Laboratory Accreditation Program, the Radiation Exposure Monitoring System, and new DOE strategic pollution prevention goals.

Program Direction – Energy Supply (FY 2005 $19.8; FY 2006 $20.9)..... +$1.1
Increase supports the highly skilled federal on-board workforce. Increases reflect government-wide pay assumptions for salaries and benefits and additional training and tuition costs for other related expenses.

Other Defense Activities

Health Programs (FY 2005 $54.8; FY 2005 $45.6)..... -$9.2
Decrease reflects elimination of funding for congressionally-directed projects in FY 2005.

Energy Employees Occupational Illness Compensation Program
(FY 2005 $43.0; FY 2006 $0) ..... -$43.0
No funding will be requested in FY 2006, because activities will be supported with prior-year carryover funds.

Program Direction – Other Defense (FY 2005 $20.3; FY 2006 $20.5) ..... +$0.2
Increase funds salaries and benefits, travel, and other related expenses for 127 FTE.

Hearings and Appeals

(discretionary dollars in thousands)

	FY 2004 Comparable Approp	FY 2005 Comparable Approp	FY 2006 Request to Congress	FY 2006 vs. FY 2005	
Office Of Hearings And Appeals					
Economic Regulation					
Office of hearings and appeals	1,034	——	——	——	——
Other Defense Activities					
Office of hearings and appeals	3,775	4,283	4,353	+70	+1.6%
Total, Hearings And Appeals	**4,809**	**4,283**	**4,353**	**+70**	**+1.6%**

PROGRAM DESCRIPTION

Previously, funding for the **Office of Hearings and Appeals** had been requested in both the Energy and Water Development Appropriations and Interior and Related Agencies Appropriations. Beginning in FY 2005, DOE no longer requested funds for the Economic Regulation function within the Interior Appropriations. Adjudicatory functions are now only funded in the Other Defense Activities appropriation within the Energy and Water Appropriations. 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 Appropriations.

Other Defense Activities

Hearings and Appeals 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 2006 request of $4.4 million for these programs is a 1.6-percent increase over FY 2005 (+$4.3 million).

SECTION 6. FEDERAL ENERGY REGULATORY COMMISSION

(discretionary dollars in thousands)

	FY 2004 Comparable Approp	FY 2005 Comparable Approp	FY 2006 Request to Congress	FY 2006 vs. FY 2005	
Federal Energy Regulatory Commission					
Federal energy regulatory commission.....	204,400	210,000	220,400	+10,400	+5.0%
FERC revenues.....	-204,400	-210,000	-220,400	-10,400	-5.0%
Total, Federal Energy Regulatory Commission.....	——	——	——	——	——
Excess fees and recoveries, FERC					
Fees & recoveries in excess of annual appropriations.....	-19,000	-15,000	-13,000	+2,000	+13.3%
Total, Federal Energy Regulatory Commission.....	**-19,000**	**-15,000**	**-13,000**	**+2,000**	**+13.3%**

PROGRAM DESCRIPTION

The **Federal Energy Regulatory Commission** (FERC) regulates key interstate aspects of the electric power, natural gas, oil pipeline, and hydroelectric industries. The Commission chooses regulatory approaches that foster competitive markets whenever possible, assures access to reliable service at a reasonable price, and gives full and fair consideration to environmental and community impacts in assessing the public interest of energy projects.

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 protecting the reliability, 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 both traditionally regulated and transitioning energy markets. This includes providing vigilant and effective oversight of market operations and preventing market manipulation by enforcing Commission rules.

PROGRAM HIGHLIGHTS

Confidence in the nation's energy markets has been affected by the problems in western energy markets, high prices for natural gas, and the August 2003 blackout in parts of the midwest, northeast, and Canada. The Commission has made progress in resolving the western energy markets issues and has begun addressing the natural gas markets issues that are within its authority. Electric reliability continues to be at the top of the Commission's agenda and shall continue to be for the near future. With regard to reliability, the Commission's agenda includes establishing a viable mechanism for strong, enforceable reliability standards as soon as possible by working with industry and market participants on such issues as appropriate reliability standards, reliability review measures, improved training for control room operators, and better reliability enforcement.

Crises can erupt quickly in energy markets, especially in electricity markets, and the Commission is acting to provide a much more stable long-term platform for these markets. Two initiatives remain especially important: market design and a strong market oversight and investigations program. The Commission has concluded that an ideal market design should meet certain customer-focused objectives and many industry participants are implementing

similar elements through filings involving ISOs and RTOs that establish single-state or multi-state regional power markets and market power mitigation within those markets. The Commission is committed to encouraging competitive market institutions across the lower 48 states, and to implementing clear, self-enforcing market rules across the nation's regional bulk power markets that balance the interests of all market participants. In addition, a strong market oversight and investigations program is a necessary part of restoring public confidence in energy markets and continues to give the Commission the ability to track market conditions and address market problems quickly and effectively.

SIGNIFICANT FUNDING CHANGES – FY 2005 to FY 2006 Request ($ in millions)

FERC (FY 2005 $210.0; FY 2006 $220.4).....+$10.4
FY 2006 request funds 1,295 FTE, an increase of 15 FTE over FY 2005. Increase in FTE for FY 2006 is targeted to support the expansion of the Commission's market oversight and investigation efforts. 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 2006.