DOE/CF-021

Department of Energy

FY 2008 Congressional Budget Request

Budget Highlights

February 2007

Office of Chief Financial Officer

DOE/CF-021

Department of Energy

FY 2008 Congressional Budget Request

Budget Highlights

February 2007

Office of Chief Financial Officer

Table of Contents

INVESTING IN SCIENCE AND ENERGY SECURITY

The strength and prosperity of America's economy is built on the security of our nation and the reliability of energy sources. Since 2001, the Administration has invested $158 billion through the Department of Energy (DOE) to help drive America's economic growth, provide for our national security, and address the energy challenges that face our nation. The Department of Energy's fiscal year (FY) 2008 budget request of $24.3 billion stays on course to address the growing demand for affordable, clean and reliable energy; preserve our national security; and enable scientific breakthroughs that will have significant impacts on our quality of life and the health of the American people. The FY 2008 budget was developed to meet those goals.

With a total investment of $24.3 billion in FY 2008, the Department will seek to advance the President's American Competitiveness Initiative aimed at ensuring U.S. technological competitiveness and economic security, and implement the Advanced Energy Initiative which seeks to accelerate the research, development and deployment of clean energy technologies to diversify our nation's energy supply. These efforts, combined with investments to meet our commitment to protect the United States as stewards of our nation's nuclear weapons stockpile and to environmental cleanup, will foster continued economic growth and promote a sustainable energy future.

This budget, while focused on delivering results to meet the nation's priorities, also serves as the roadmap for the future of America's energy security. It is a budget poised to support the President's pro-growth economic policies and spending restraints. In addition, the FY 2008 budget request was shaped to reflect the Department's five strategic themes consistent with the President's Management Agenda to improve performance and accountability across the Department of Energy. They are:

- Promoting America's energy security through reliable, clean, and affordable energy;
- Strengthening U.S. scientific discovery, economic competitiveness, and improving quality of life through innovations;
- Ensuring America's nuclear security;
- Protecting the environment by providing a responsible resolution to the environmental legacy of nuclear weapons; and
- Enabling the Mission through sound management.

To highlight, the FY 2008 budget for the Department of Energy emphasizes investments that will:

- **Advance the American Competitiveness Initiative**
  Last year President Bush launched the American Competitiveness Initiative -- (ACI) -- to encourage innovation throughout the economy and to give America's children a firm grounding in math and science. The FY 2008 budget investment of $4.4 billion from the Department, an increase of approximately $300 million from the FY 2007 budget request, increases basic research in the physical sciences, builds the large-

scale scientific facilities essential for U.S. world leadership, supports thousands of scientists and students – our current and future scientific and technical workforce – and encourages entrepreneurship and technology discovery. Scientific and technological discovery and innovation are the major engines of increasing productivity—indispensable to ensuring growth, job creation, and rising incomes for American families in the technologically driven twenty-first century. The investment is essential if the United States is to maintain its world-class, scientific leadership and global competitiveness.

- **Accelerate the Advanced Energy Initiative**
  At a request of $2.7 billion, $557 million above the FY 2007 budget request of $2.1 billion, the President's Advanced Energy Initiative (AEI) will continue to support clean energy technology breakthroughs that will improve our energy security through diversification and could help to reduce our dependence on foreign oil. The FY 2008 budget for AEI includes funding for the advancement of renewable energy technologies such as biomass, wind, and solar energy, as well as hydrogen research and development. Also, AEI's diverse energy portfolio includes accelerating the development of clean coal technology, including building a near-zero atmospheric emissions coal plant known as FutureGen. AEI also includes funding for nuclear energy technologies, including the Global Nuclear Energy Partnership, and basic science research that supports developments in many of the aforementioned technologies as well as fusion energy research.

- **Expand the Resurgence of Nuclear Energy**
  Nuclear energy is an important source of energy in the United States and is a key component of the AEI portfolio. Nuclear energy is clean, safe, and reliable, and already supplies about 20 percent of the nation's electricity. Recognizing the potential of nuclear energy, the President announced in February 2006 the Global Nuclear Energy Partnership (GNEP). GNEP seeks to bring about significant, wide-scale use of nuclear energy through the development of better, more efficient and proliferation-resistant nuclear fuel cycles while reducing the volume of nuclear waste requiring ultimate disposal. GNEP also helps reduce the threat of nuclear proliferation around the world. In addition, it helps address the Department's long-term nuclear waste disposal challenges. A total of $405 million ($10 million in Defense Nuclear Nonproliferation) is requested in this budget for GNEP, which is an increase of $155.0 million above the FY 2007 budget request of $250 million.

  We can not forget that expansion of nuclear power is only possible if we continue to develop a responsible path for disposing of spent nuclear fuel. Therefore, $494.5 million is requested in FY 2008 for the continued development of a geologic waste repository at Yucca Mountain, Nevada. Not later than June 30, 2008, the Department intends to complete and submit a License Application to the Nuclear Regulatory Commission for authorization to construct the repository.

  GNEP has important implications for the permanent repository at Yucca Mountain. The increased efficiency in recycling spent nuclear fuel would ensure that even with expanded use of nuclear energy, the U.S. would need only one geologic repository. GNEP is consistent with the Yucca Mountain Project and extends its benefits beyond the 21st century.

- **Transform Our Nuclear Weapons Complex**
  The FY 2008 budget reconfirms the Department of Energy's steadfast commitment to the national security interests of the United States through stewardship of a reliable and responsive nuclear weapons stockpile and by advancing the goals of global non-proliferation. Through the National Nuclear Security Administration (NNSA), the Department directs $6.5 billion in this request for **Weapons Activities**, a $103 million increase from the FY 2007 request, to meet the existing requirements for stewardship of the Nation's nuclear weapon stockpile, technologies and facilities, as well as to continue to revitalize the nuclear weapons complex with the goal of a much smaller size by 2030. This effort, called "**Complex 2030,**" is structured to achieve President Bush's vision to create a more efficient Nuclear Weapons Complex of the future that is able to respond to changing national and global security challenges.

- **Reduce the Risk of Weapons of Mass Destruction Worldwide**
  The Department has provided $1.7 billion in this request for **Defense Nuclear Nonproliferation**, for a comprehensive set of programs to meet our commitment to detect, prevent, and reverse the proliferation of Weapons of Mass Destruction (WMD) in close cooperation with our partners around the world. This program is an Administration priority and while the funding amount shows a 3% decrease, this reflects accelerated completions in FY 2007. Further, the request provides significant out-year growth to fulfill our international agreements and accelerate our work to reduce the risk of WMD threats. Among many advances, the FY 2008 budget for example will further our work in the Megaports program by initiating the installation of radiation detection equipment at the Port of Hong Kong.

- **Meet Our Commitments to Public Health and Safety and the Environment**
  Secretary Bodman, during his first days at the Department of Energy, announced safety as his top priority and the number one operating principle of the Department. To implement his vision, the Secretary created a new **Office of Health, Safety and Security**. Secretary Bodman said, "As Secretary of Energy, ensuring the safety of workers across the DOE complex is my top priority and this new office will go a long way in strengthening our safety and security organization. We must be world class not only in how we carry out our mission, but in the safe, secure, and environmentally responsible way in which we manage operations at our facilities across the country." The organization's FY 2008 budget request of $428 million, builds on a number of actions the Department has taken over the past two years to increase safety of DOE workers.

  The FY 2008 budget includes $5.7 billion for the **Environmental Management** program to protect public health and safety by cleaning up hazardous, radioactive legacy waste left over from the Manhattan Project and the Cold War. Past investments have resulted in the completed clean up of 81 sites through the end of FY 2006, including Rocky Flats, Colorado, and a total of 86 sites by the end of FY 2007, including the Fernald site in Ohio, which was completed in January 2007. This budget allows the program to continue to make progress towards cleaning up and closing sites and focuses on activities with the greatest risk reduction.

As the Department continues to make progress in completing clean up, the FY 2008 budget request of $194 million for **Legacy Management** supports the Department's long-term stewardship responsibilities and payment of pensions and benefits for our former contractor workers after site closure.

The GNEP strategy complements the Department's Civilian Radioactive Waste Management program, which is working to address the problems of long-term nuclear waste disposal in an environmentally sound manner. The program office is working to construct a permanent repository for spent nuclear fuel at **Yucca Mountain**. Funding of $494.5 million is proposed in FY 2008 to support the development of a repository that will protect public health and safety in ways that are both environmentally and economically viable. The funding also supports the submission, not later than June 30, 2008, of a comprehensive License Application to the Nuclear Regulatory Commission for authorization to construct the repository.

In light of the increased number of sophisticated cyber attacks directed at all facets of our communities, from military to civilian to private users, the Department is taking significant steps to secure the virtual pathways and mitigate the threat from cyber intrusions. Implementing these steps will be seamless and will not interrupt the availability of information systems resources while preserving the confidentiality and integrity of the information and their contents. A budget request of $135 million in FY 2008 supports the Department's efforts to defend against emerging, complex cyber attacks. Through these efforts, the Department will be in a better position to effectively manage and monitor cyber risk across the complex. In FY 2008, DOE will increase support on a Department-wide basis to deploy new cyber security tools and cyber security management activities to detect, analyze, and reduce the threat across the complex.

PROMOTING AMERICA'S ENERGY SECURITY THROUGH RELIABLE, CLEAN, AND AFFORDABLE ENERGY

The FY 2008 budget request addressing energy and environmental security is an essential component of the Department's strategic goals. This priority is reflected in the increase of $506 million or 20 percent of the Department's energy programs compared to the FY 2007 budget request. These investments in research, development and deployment could directly strengthen America's energy security, environmental quality, and economic vitality through public-private partnerships that expand the use of cost-effective energy efficient technologies; enable and accelerate market adoption of clean, reliable and affordable energy technologies; and support the implementation of the President's National Energy Policy. Additionally, the energy programs at DOE are working with the basic research and scientific community to focus on development of technology components that could enable and catalyze the rapid development, commercialization and deployment of next generation energy technologies.

This budget includes President Bush's **Advanced Energy Initiative** (AEI) which aims to reduce our dependence on foreign sources of oil and transforming our national energy economy by promoting development of cleaner sources of electricity production. For too long, our nation has been dependent on oil. America's dependence leaves us more vulnerable to disruptions to domestic production like hurricanes, to hostile regimes, and to terrorists - who could cause huge disruptions of oil shipments, raise the price of oil, and do

great harm to our economy. In concert with the President's **Twenty In Ten** initiative to reduce U.S. gasoline usage by 20 percent in the next ten years, or by 2017, a total of $2.7 billion is requested in FY 2008 to support the **AEI**. These funds support a diverse portfolio of energy research and development (R&D) and deployment programs designed to help meet the energy challenges of the 21st century. Highlights of the request include the following components of the President's AEI:

- **The President's Biofuels Initiative.** The President's goal to make cellulosic ethanol cost-competitive by 2012 is the focus of the biomass program. Biomass is the key renewable resource supported by the Department because it is a promising renewable option for producing liquid transportation fuels in the near term, thereby reducing our dependence on imported oil. In FY 2008, the Department is investing $179 million to support the goals of the initiative.
- **The President's Hydrogen Fuel Initiative**. This budget request includes $309 million (an increase of $19.5 million above the FY 2007 request) for the President's Hydrogen Fuel Initiative and completes the President's commitment of $1.2 billion over five years for this initiative. Increased funding is proposed to expand research in several areas, including: hydrogen production from renewables; materials for hydrogen storage; fuel cell stack components; and a new R&D effort on cost-effective manufacturing technologies to help industry build a competitive, domestic hydrogen and fuel cell supplier capability.
- **Vehicles Technologies and FreedomCAR.** This year's request emphasizes plug-in hybrid vehicle component technologies by increasing the requested research support to $81 million. These technologies offer the potential to make significant additional improvements in petroleum reduction beyond that achievable with standard hybrid configurations. By utilizing energy drawn from the nation's electricity grid at off-peak times to charge high energy batteries, these technologies will be able to operate in an electric vehicle mode for expanded distances, potentially meeting most drivers' needs for commuting and short distance driving.
- **The President's Solar America Initiative (SAI).** Launched in FY 2007, SAI is designed to achieve cost competitiveness for photovoltaic (PV) solar electricity by 2015. With a request of $148 million in FY 2008, SAI seeks to achieve its mission through public-private partnerships with industry, universities, national laboratories, states, and/or other government entities.

The FY 2008 budget request also supports renewable energy and energy efficiency R&D that could help reduce the overall demand for natural gas and lower emissions in the electricity sector. The FY 2008 request for the **Wind Energy** program includes $40 million to continue wind energy research to reduce costs and overcome barriers to large-scale use of wind power. The FY 2008 budget also includes $19 million to continue the accelerated development of **Solid State Lighting** technologies that have the potential to reduce commercial building lighting electricity consumption by 50 percent and could revolutionize the energy efficiency, appearance, visual comfort, and quality of lighting.

Our energy portfolio also recognizes the abundance of coal as a domestic energy resource and remains committed to research and development to promote its clean and efficient use. Coal in the U.S. accounts for 25 percent of the world's coal reserves. The foundation of the Department's clean coal research program is the **FutureGen** project, which will establish the capability and feasibility of co-producing electricity and hydrogen from coal with near-zero atmospheric emissions. The Administration remains strongly committed to FutureGen and

is requesting $108 million in FY 2008, consistent with the project plan to keep the project on schedule for start-up in 2012. An additional $267 million is requested within the Coal program to support research and development on technologies needed to realize the concept.

Funding for the Coal program will be partially derived from transferring $166 million in prior year balances from the **Clean Coal Technology** appropriation to the **Fossil Energy Research and Development** appropriation. These prior year balances are no longer needed for active Clean Coal Technology projects and will be used to support FutureGen ($108 million) and the **Clean Coal Power Initiative** ($58 million). Better utilization of these fund balances to support FutureGen and related technologies will generate real benefits for America's energy security and environmental quality. Using fund balances and new appropriations, in 2008 the Clean Coal Power Initiative will issue a solicitation for demonstration of technologies focusing on carbon sequestration.

As part of the greenhouse gas mitigation strategy, the Department continues to develop low cost **carbon sequestration** technology for both new and existing coal plants. To that end, the Department includes $79 million in FY 2008 for sequestration research and development, including initiating work on four large-scale sequestration field tests, each of which will inject about one million tons per year of carbon dioxide. The carbon sequestration program, together with FutureGen and other supporting research, will assure the timely development of this technology that will be capable of virtually eliminating carbon emissions from all coal fired plants.

Consistent with the FY 2006 and FY 2007 budget requests, the FY 2008 budget request continues to shift resources away from oil and gas research and development programs, which have sufficient market incentives for private industry support, to other energy priorities. 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. Federal staff, paid from the program direction account, will work toward an orderly termination of the program in FY 2008.

The Energy Policy Act of 2005 established a new mandatory oil and gas research and development (R&D) program, called the Ultra-Deep and Unconventional Natural Gas and Other Petroleum Research program, that is funded from federal revenues from oil and gas leases beginning in FY 2007. These R&D activities are more appropriate for the private-sector oil and gas industry to perform. Therefore the FY 2008 budget proposes to repeal the program through a separate legislative proposal.

To further assure against oil supply disruptions that could harm our economy, this budget also proposes $168 million to begin expanding the **Strategic Petroleum Reserve** to an ultimate capacity of 1.5 billion barrels by 2027 as announced by President Bush in his State of the Union address. Efforts will begin with filling the reserve to its current 727 million barrel capacity in 2007, and then expand capacity further at existing sites and new sites beginning in 2008. The Administration will, through a separate legislative proposal, seek the necessary authority to increase the authorized capacity of the Reserve from one billion barrels to 1.5 billion barrels.

The Energy Policy Act of 2005 authorized the establishment of a new **Loan Guarantee Program**. This budget request includes $8.4 million to operate a Loan Guarantees Office. This program will establish procedures and regulations and manage the assessment of all

loan guarantee applications submitted to the Department in compliance with Title XVII of the Energy Policy Act of 2005, Section 1703 of that Act authorizes the Department to provide loan guarantees for renewable energy systems, advanced nuclear facilities, coal gasification, carbon sequestration, energy efficiency, and many other types of projects. The budget proposes an FY 2008 loan volume limitation of $9 billion. Of this amount, the Department will seek to guarantee approximately $4 billion in loans for central power generation facilities (for example, nuclear facilities or carbon sequestration optimized coal power plants); $4 billion in loans for projects that promote biofuels and clean transportation fuels; and $1 billion in loans for projects using new technologies for electric transmission facilities or renewable power generation systems.

Reliable energy information plays a critical role in promoting efficient energy markets and informing the public and policy makers. This budget requests a total of $105 million for the Energy Information Administration to improve energy data and analysis programs, reflecting a 17 percent increase over the FY 2007 budget request.

The Department of Energy's **Power Marketing Administrations** (PMAs), consisting of the Southeastern (SEPA), Southwestern (SWPA), Western Area (WAPA) and Bonneville (BPA) Power Administrations, play an important role in meeting energy demands and powering our economy. The electricity generated at federal hydroelectric facilities and marketed and delivered by the PMAs, represents approximately four percent of the nation's electricity supply. In FY 2008, $238 million is requested for SEPA, SWPA, and WAPA to continue their activities.

The budget includes certain proposals regarding the PMAs. The first proposal provides that the interest rate for future obligations owed to the Treasury by SEPA, SWPA, and WAPA for power-related investments be set at the rate at which governmental corporations borrow in the market, similar to the interest rates current law sets BPA's borrowing from the Treasury. This new policy will be applied to all power-related investments occurring after September 30, 2006, whose interest rates are not set by law. PMA obligations owed to Treasury that were incurred before September 30, 2006, will retain their existing interest rates. This change is expected to increase total receipts to the U.S. Treasury, beginning in FY 2007, by approximately $2-3 million annually.

The second proposal would accelerate the recovery of purchase power and wheeling (PPW) costs which are funded through the Continuing and Emergency Funds of SEPA, SWPA and WAPA to provide service to customers. These PMAs currently have different policies that govern how these PPW costs are recovered. For example, some PPW costs are recovered from ratepayers within one year, while others take up to five years. Beginning in FY 2008, the PMAs will adopt policies that require future PPW costs funded through the Continuing Funds for SEPA and SWPA and the Emergency Fund for WAPA to be repaid by ratepayers within one year from the time the costs are incurred. Implementation of the proposal is expected to be completed by all PMAs in FY 2009.

BPA, unlike the other three PMAs, is "self-financed" by the ratepayers of the Pacific Northwest and receives no direct annual appropriations from Congress. Under the Federal Columbia River Transmission System Act of 1974, BPA funds the expense portion of its budget and repays the Federal investment and debt owed to the Treasury with revenues from electric power and transmission rates. The budget re-proposes an initiative calling for BPA to apply net secondary market revenues in excess of $500 million annually towards the prepayment of its $2.2 billion outstanding Treasury bonded debt. BPA's total borrowing

authority from the Treasury is currently limited to $4.45 billion by federal law. This proposal, combined with other debt management tools, could extend to 2016; the date when BPA's Treasury borrowing will reach the $4.45 billion cap. The Administration encourages a continued ongoing dialogue in the Pacific Northwest to address the manner in which this proposal can be implemented in manner that will improve BPA's ability to meet its long-term capital investment needs with minimal rate impact.

Global Nuclear Energy Partnership (GNEP)

A staple in our energy portfolio, nuclear energy has the potential to drive our 21st century economy to produce vast quantities of economical hydrogen for transportation use without emitting greenhouse gases and to generate heat and clean water to support growing industry and populations worldwide. In FY 2008, a total of $874.6 million is requested for nuclear energy activities. Included in the total is $395 million for the **Advanced Fuel Cycle Initiative** to support the Global Nuclear Energy Partnership (GNEP). GNEP is a comprehensive strategy to: enable an expansion of nuclear power in the United States and around the world; promote nuclear nonproliferation goals; and help resolve nuclear waste disposal issues. An additional $10 million is requested within the nuclear nonproliferation budget to support safeguards technology development as part of the far-reaching GNEP strategy.

GNEP will build upon the Administration's commitment to develop nuclear energy technology and systems and enhance the work of the United States and our international partners to strengthen nonproliferation efforts. The GNEP strategy will accelerate efforts to:

- Provide abundant energy without generating carbon emissions or greenhouse gases;
- Recycle used nuclear fuel to minimize waste and reduce proliferation concerns;
- Safely and securely allow developing nations to deploy nuclear power to meet their energy needs;
- Assure maximum energy recovery from still-valuable used nuclear fuel; and
- Reduce the number of required U.S. geologic waste repositories to one for the remainder of this century.

Through GNEP, the United States will work with key international partners to develop new recycling technologies. Recycled fuel would be processed through advanced burner reactors to extract more energy, reduce waste and consume plutonium, dramatically reducing proliferation risks. As part of GNEP, the U.S. and other nations with advanced nuclear technologies would provide developing nations a reliable supply of nuclear fuel in exchange for their commitment to forgo enrichment and reprocessing facilities of their own, also alleviating a traditional proliferation concern.

GNEP would also help resolve America's nuclear waste disposal challenges. By recycling spent nuclear fuel, the heat load and volume of waste requiring permanent geologic disposal would be significantly reduced, delaying the need for another repository in addition to the one at Yucca Mountain for the remainder of this century.

To support the near-term domestic expansion of nuclear energy, the FY 2008 budget seeks $114 million for the **Nuclear Power 2010** program to support continued cost-shared efforts with industry to reduce the barriers to the deployment of new nuclear power plants in the United States.

The technology focus of the Nuclear Power 2010 program is on Generation III+ advanced light water reactor designs, which offer advancements in safety and economics over older designs. If successful, this seven-year, $1.1 billion project (50 percent to be cost-shared by industry) could result in a new nuclear power plant order by 2009 and a new nuclear power plant constructed by the private sector and in operation by 2014.

The Energy Policy Act of 2005 authorized the Secretary to enter into standby support contracts for six new advanced nuclear reactors. The program will allow DOE to offer **standby support/risk insurance** to protect sponsors of the first new nuclear power plants against the financial impact of certain delays that are beyond the sponsors' control. This program would cover 100 percent of the covered cost of delay, up to $500 million for the first two new reactors, and 50 percent of the covered cost of delay, up to $250 million each, for up to four additional reactors. This risk insurance offers project sponsors additional certainty and incentive to provide for the construction of a new nuclear power plant by 2014. In FY 2008, the Department will receive and evaluate applications for standby support contracts from sponsors of new nuclear power plants.

The FY 2008 budget request includes $36 million to continue to develop next-generation nuclear energy systems known as "**Generation IV** (GenIV)." These technologies will offer the promise of a safe, economical, and proliferation resistant source of clean, reliable, sustainable nuclear power with the potential to generate hydrogen for use as a fuel. Resources in FY 2008 for GenIV will be primarily focused on long-term research and development of a gas-cooled very-high temperature reactor, the reactor technology of choice for the Next Generation Nuclear Plant (NGNP) project.

STRENGTHENING U.S. SCIENTIFIC DISCOVERY, ECONOMIC COMPETITIVENESS, AND IMPROVING QUALITY OF LIFE THROUGH INNOVATIONS IN SCIENCE AND TECHNOLOGY

Today our nation's ability to sustain a growing economy and a rising standard of living for all Americans depends on continued advances in science and technology. Scientific and technological discovery and innovation are the major engines of increasing productivity and are indispensable to ensuring economic growth, job creation, and rising incomes for American families in the technologically driven 21st century. Today it is especially vital that nations around the globe—not only the developed nations but also the largest developing ones—increase their strategic national investments in scientific research with an eye to global economic competition.

The FY 2008 Office of Science budget request of $4.4 billion or 7 percent above the FY 2007 request is designed to sustain the planned doubling of Federal support for physical sciences research over the FY 2006 level by FY 2017 under the American Competitiveness Initiative launched in FY 2007. Given the large-scale nature of Office of Science facilities and the thousands of scientists and researchers receiving DOE support for their research and education, sustained and predictable budgetary trajectories are essential to preserve America's vitality in science and avoid an attrition of U.S. scientific talent.

DOE's Office of Science has played a central role over the last 50 years in supporting and sustaining institutional research in the physical sciences in the United States. Among Federal agencies, it is the largest supporter of basic research in the physical sciences, providing over 40 percent of such funding. The Office of Science is the main builder and

operator of large-scale scientific facilities and instruments that are increasingly important to physical sciences research and maintains and operates ten major national laboratories that have been seedbeds of scientific discovery, technological innovation, and economic progress. Office of Science funding also plays an indispensable role in training, educating, and sustaining the nation's scientific workforce. Each year, Office of Science facilities meet the needs of a diverse set of 20,000 researchers. Thousands of university researchers—professors, "post-docs", and undergraduate students—also rely, each year, on Office of Science support. Roughly half of the researchers at Office of Science-run facilities come from universities, and about a third of Office of Science research funds go to institutions of higher learning.

The Office of Science is also the main federal sponsor of basic research aimed at achieving the scientific breakthroughs necessary to meet our nation's growing energy challenge by developing alternative, carbon-free or carbon neutral sources of energy to enhance our energy security and protect the global environment. Today the Office of Science is supporting transformational discoveries in essential new fields—biotechnology, nanotechnology, and high-speed computation—that will revolutionize the 21st century economy not only in energy, but also across the nation's industrial base.

The field of biotechnology has revolutionized medicine. Many scientists believe there is a real promise that it may transform the field of energy production—providing transformational breakthroughs that will enable the cost-effective, homegrown production of biofuels that can eventually meet much of our transportation energy demand and substantially reduce net carbon dioxide emissions. DOE's science activities have played a critical role in the biotech revolution. In 1986, the Department initiated the Human Genome Project. Today the Genomics: GTL program supports the most advanced biotechnology tools and techniques to probe for biological and biologically inspired solutions to Department mission challenges in energy, carbon sequestration, and environmental remediation. The FY 2008 request includes $75 million for three innovative Bioenergy Research Centers that will bring together multi-disciplinary teams of some of the nation's leading researchers in a mission-driven laboratory setting to probe plants and microbes at all levels (molecular, cellular, system) in an effort to crack nature's code and achieve the breakthroughs that will make biofuel production truly cost-effective on a national scale.

The capacity to create new, stronger, more durable, or more energy efficient materials—"smart" materials that respond to the environment, improved catalysts for oil refining, better batteries, more efficient windows, to name only a few applications—becomes almost limitless as we gain the tools and expertise to manipulate matter at the atomic level. These scientific advances contribute greatly to improving our way of living. This year, the Office of Science will continue this work by completing construction of the last Nanoscale Science Research Center in FY 2008, and the FY 2008 request provides $20 million each for operations at the Office's five Nanoscale Science Research facilities. In addition, construction continues on the Linac Coherent Light Source, the world's first x-ray free electron laser, which will enable us to observe chemical reactions at the molecular level in real time. Project engineering and design funds are also provided for the National Synchrotron Light Source II, which will provide unique capabilities for probing structural biology and nanostructures and observing materials under extreme conditions.

Computational modeling and simulation have been described as a third pillar of the scientific revolution. Computational power gives scientists an extraordinary capability to explore complex systems and simulate crucial experiments that would be impossible to perform in a

laboratory. With the FY 2008 budget request, the Office of Science goal is attainment of an unprecedented petaflop, which is a million billion operations per second, of computational capability to sustain the Department's position as world leader in civilian computing power. The Advanced Scientific Computing Research request increases by $21.5 million over the FY 2007 request.

Progress in energy-related and use-inspired basic science builds on the foundation of discovery in more fundamental science. Modern light source technologies, so crucial to biotechnology and nanotechnology, for example, are an outgrowth of accelerator science originally developed for particle accelerators in nuclear and high energy physics. These investigations into the very nature and origins of our universe expand the horizons of our knowledge, providing insight into who we are and where we come from. Within the $4.4 billion request for Science, $146.5 million is provided for operations of the Relativistic Heavy Ion Collider (RHIC), which enables us to glimpse conditions of the very early universe, and $79.2 million is for the Continuous Electron Beam Accelerator Facility (CEBAF), which provides insight into the quark structure of matter.

Within high energy or particle physics, scientists stand on the threshold of discovery, as accelerators increase in energy and permit research of matter beyond the Standard Model that has reigned for the last half-century. The research promises to radically transform our understanding of the structure of matter, space, and time. Within the Office of Science budget request, $158 million is provided for operations of the Tevatron at Fermilab for collider and neutrino physics programs. In addition, the request provides $62 million to support the research of U.S. scientists at the Large Hadron Collider in CERN, which will be the world's most powerful accelerator. R&D support is maintained for the International Linear Collider, to maintain a U.S. leadership role in the development of this next-generation accelerator, which promises to further illuminate the nature of matter at terascale energies.

Finally, on November 21, 2006, the U.S. Department of Energy signed an agreement with China, the European Union, India, Japan, the Republic of Korea and the Russian Federation to build the international fusion energy project known as ITER. Under this arrangement of international scientific cooperation, these nations will collaborate to construct an experimental reactor that will put the world on a path toward harnessing fusion energy—the fuel that powers the stars—for the production of plentiful, environmentally friendly, carbon-free energy. The request provides $160 million for the U.S. contribution to this international effort.

ENSURING AMERICA'S NUCLEAR SECURITY

The President, in his first days in office, was faced with the new and challenging realities of national security in the 21st century. The War on Terror has substantially and fundamentally reshaped the national security programs and activities in the Department. This budget of $24.3 billion for the Department is an important component of the President's strategy to address some of these very important issues facing our nation. Within the $24.3 billion request in FY 2008, $9.4 billion or 39 percent is proposed to support DOE's contribution to the Federal government-wide effort to ensure the security of our nation.

The National Nuclear Security Administration (NNSA) continues significant efforts to meet Administration and Secretarial priorities leveraging science to promote national security. The FY 2008 budget proposes $9.4 billion to meet defense- and homeland security-related

objectives. The budget request maintains current commitments to the nuclear deterrence policies of the Administration's Nuclear Posture Review. To implement those policies for the long term, NNSA has established a new planning scenario, "Complex 2030", to guide the transformation of the complex. The FY 2008 budget also continues to fund a high profile strategy to mitigate throughout the world the threat of weapons of mass destruction, and provides for the nuclear propulsion needs of the U.S. Navy. Key investments include:

- Transforming the nuclear weapons stockpile and infrastructure while meeting Department of Defense requirements, through the Reliable Replacement Warhead and other Complex 2030 initiatives;
- Conducting innovative programs in the nations of the former Soviet Union and other countries to address nonproliferation priorities;
- Supporting naval nuclear propulsion requirements of the U.S. Navy;
- Maintaining comprehensive security for facilities, employees and information implementing and sustaining upgrades throughout the complex;
- Providing nuclear emergency response assets in support of homeland security;
- Reducing the deferred maintenance backlog and achieving facility footprint reduction goals; and,
- Providing corporate management and oversight for NNSA programs and operations.

The United States continues a fundamental shift in national security strategy to address the realities of the 21st century. The Administration's Nuclear Posture Review (NPR) addressed a national security environment in which threats may evolve more quickly and be less predictable and more variable than in the past. The NPR recognizes the need to transition from a threat-based nuclear deterrent with large numbers of deployed and reserve weapons, to a deterrent consisting of a smaller nuclear weapons stockpile with greater reliance on the capability and responsiveness of the Department of Defense (DoD) and NNSA infrastructure to respond to threats. The NNSA infrastructure must be able to meet new requirements in a timely and agile manner while also becoming more sustainable and affordable. The Department of Energy has created a plan for a revitalized nuclear weapons complex called "Complex 2030." This significantly more agile and responsive complex will allow further reductions in the nuclear stockpile by providing an industrial hedge against geopolitical or technical problems and will reduce security costs by consolidating nuclear materials. The FY 2008 President's Budget contains some of the resources required for transformation of the Complex in ongoing base program activities that are already underway and contributing to Complex 2030 objectives. The Administration is still studying plans and funding projections for other parts of the effort.

The FY 2008 budget request of $6.5 billion for **Weapons Activities** includes all programs to meet the immediate needs of the stockpile, stockpile surveillance, annual assessment, and life extension programs. On November 30, 2006, the Nuclear Weapons Council approved the **Reliable Replacement Warhead** (RRW) program as the long-term strategy for maintaining a safe, secure and credible nuclear deterrent. This shift in strategy from a Life Extension Program to a RRW program will require substantial planning and resource realignments by the Departments of Defense (DoD) and Energy. The Campaigns are focused on long-term vitality in science and engineering and on R&D supporting current and future stockpile stewardship and DoD requirements. A number of these NNSA programs and facilities also support scientific research users from other elements of the Department, Federal government, and the academic and industrial communities. Within the Nuclear

Weapon Incident Response programs, a new National Technical Nuclear Forensics R&D and operations program is established, as well as a stabilization program through leveraged Render Safe R&D development of first generation equipment in support of homeland security. NNSA's **Safeguards and Security** activities are also encompassed within the request for Weapons Activities. The Defense Nuclear Security program supports the physical security needs at NNSA sites. These activities increase by 17 percent to sustain base program increases associated with the FY 2003 DBT upgrades, and a revised schedule for 2005 Design Basis Threat implementation at NNSA sites. Cyber Security activities, protecting information and information technology infrastructure, increase by over 15 percent. This will provide for the first step in a major five-year effort focused on revitalization, certification, accreditation and training across the NNSA complex.

Preventing weapons of mass destruction from falling into the hands of terrorists is one of this Administration's top national security priorities. The FY 2008 request of $1.67 billion for nuclear nonproliferation activities strongly supports the international programs that are denying terrorists the nuclear materials, technology and expertise needed to develop or otherwise acquire nuclear weapons. NNSA continues unprecedented efforts to protect the U.S. and our allies from threats, including $265 million for cutting-edge **nonproliferation research and development** for improved technologies to detect and monitor nuclear proliferation and nuclear explosions worldwide. There are additional major efforts focused on potential threats abroad. For example, in the area of **nuclear material protection and cooperation** the program has completed security upgrades for Russian navy nuclear fuel and weapons storage at the end of FY 2006 and will complete security upgrades for Rosatom facilities by the end of FY 2008. Also by the end of FY 2008, the program will complete security upgrades at the nuclear warhead sites of the Russian Strategic Rocket Forces and the 12th Main Directorate. To help complete the shutdown of three Russian nuclear reactors still producing 1.2 metric tons of plutonium per year and to replace them with conventional fossil fuel power plants, this budget request includes $182 million for the Elimination of Weapons Grade Plutonium Production program.

The budget includes a request of $334 million for the U.S. **Mixed Oxide Fuel Fabrication Plant** project at DOE's Savannah River Site in South Carolina. This facility will dispose of 34 metric tons of U.S. surplus plutonium and facilitate complex-wide consolidation of nuclear material. The project is awaiting authorization to proceed to construction. Various programs funded by NNSA's Defense Nuclear Nonproliferation appropriation support the Bratislava Agreement (about $293 million) including security upgrades at Russian nuclear warhead sites, and also support the Global Partnership against the Spread of Weapons of Mass Destruction ($537 million) to meet the U.S. commitment to the G8 nations. In coordination with the Office of Nuclear Energy, the budget request also includes $10 million to support the Global Nuclear Energy Partnership (GNEP), which is focused on safeguards technology development that is crucial to the ultimate success of the GNEP initiative.
NNSA continues to support the United States Navy's nuclear propulsion systems. The FY 2008 request of $808.2 million is an increase of 1.6 percent over the FY 2007 request level. The funding increase assists the Naval Reactors program to ensure the safe and reliable operation of reactor plants in nuclear-powered submarines and aircraft carriers and fulfills the Navy's requirements for new nuclear propulsion plants that meet current and future national defense requirements.

PROTECTING THE ENVIRONMENT BY PROVIDING A RESPONSIBLE RESOLUTION TO THE ENVIRONMENTAL LEGACY OF NUCLEAR WEAPONS PRODUCTION

The federal government must address the legacy of our past and our responsibility to the American taxpayers to provide a clean, safe and healthy environment to live in. A total of $6.34 billion is dedicated in FY 2008 to support the three key pillars that set the framework for the Department to reach that goal. The first pillar is to continue our **environmental cleanup** ($5.7 billion) of contaminated Cold War sites across the country. The second pillar is to continue to provide **site post-closure management** and to carry out our responsibilities ($194 million) to our former contractor workers. The third pillar completes the framework by working to construct a permanent nuclear waste repository at **Yucca Mountain** ($494.5 million) to address long-term nuclear waste disposal and for authorization of which the Department will submit a License Application to the Nuclear Regulatory Commission not later than June 30, 2008. And it goes without saying that Secretary Bodman's core principle of safe operations throughout the Department will be applied with vigor within this framework.

To deliver on the Department's cleanup obligations stemming from 50 years of nuclear research and weapons production during the Cold War, the Environmental Management program (EM) continues to focus its resources on the highest health and safety risks, such as treatment of over 90 million gallons of radioactive liquid waste stored in decades old tanks; disposition of thousands of metric tons of special nuclear material (surplus weapons-grade uranium and plutonium), spent nuclear fuel, and solid waste stored in older facilities that do not meet today's environmental requirements; and remediation of contaminated soil and groundwater. Up through FY 2007, DOE has completed cleanup of 86 of 108 legacy nuclear waste sites, with another three site cleanup completions – the Pantex Plant in Texas; Lawrence Livermore National Laboratory - Site 300 in California, and the Inhalation Toxicology Lab in New Mexico – planned for completion in FY 2008.

In FY 2008, the budget includes $5.7 billion to continue cleanup, giving priority to those activities that offer the greatest risk reduction while staying focused on completing cleanup and closing sites. This is a reduction from the FY 2007 request of $173 million, which in part reflects completion of some sites, but also reflects hard choices that must be made. Safety remains the utmost priority. EM is committed to applying Secretary Bodman's safety principles and will continue to maintain and demand the highest safety performance to protect the workers and the communities where EM operates.

In keeping with the principles of reducing risks and environmental liabilities, the FY 2008 request of $5.7 billion will support the following priority activities:

- Stabilizing radioactive tank waste in preparation for treatment (about 31 percent of the FY 2008 request);
- Storing and safeguarding nuclear materials and spent nuclear fuel (about 17 percent of the FY 2008 request);
- Dispositioning transuranic, low-level and other solid wastes (about 16 percent of the FY 2008 request);
- Remediating major areas of our sites and decontamination and decommissioning excess facilities (about 26 percent of the FY 2008 request).

One of the significant cleanup challenges the EM program faces is the construction of the Hanford Waste Treatment and Immobilization Plant (WTP), which will treat highly radioactive tank waste at Hanford. WTP has encountered significant technical and project management problems, which have caused the project to slow down while the problems were addressed. With the help of senior professionals from private industry, academia and other Government agencies, EM has undertaken an intensive review scrutinizing key elements of the project, including the technology, cost and schedule, project management, project controls, and earthquake seismic criteria. In December 2006, the Department approved a revised, validated baseline of $12.3 billion for WTP. The Department believes WTP is now back on a sound technical and project management footing, and is ready to move forward.

Despite numerous accomplishments and successfully accomplishing site completions, the EM program has experienced setbacks in achieving its vision of accelerated cleanup. At the core of these setbacks are optimistic planning assumptions that have not materialized, combined with new scope and requirements that were not anticipated. As a result, EM estimates the lifecycle cost of the program could increase by $50 billion. EM continues to take steps to address challenges and improve the effectiveness and efficiency of its operation. The Department remains committed to completing this important and necessary mission.

After the Environmental Management program completes cleanup of sites throughout the DOE complex, post closure stewardship activities are transferred to the **Office of Legacy Management** (LM). Post closure stewardship includes long-term surveillance and maintenance activities such as groundwater monitoring, disposal cell maintenance, records management, and management of natural resources at sites where active remediation has been completed. At some sites the program includes management and administration of pension and benefit continuity for contractor retirees. In FY 2008, $194.2 million is requested to carry out legacy management functions. The majority of the funding is for long-term stewardship activities and pension and post-retirement benefits for former contractor employees at the Rocky Flats, Colorado, and the Fernald, Ohio, closure sites.

Over the last 50 years, our country has benefited greatly from nuclear energy and the power of the atom. We need to ensure a strong and diversified energy mix to fuel our nation's economy, and nuclear power is an important component of that mix. Currently more than 50,000 metric tons of spent nuclear fuel is located at over 100 above-ground sites in 39 states, and every year reactors in the United States produce an additional approximately 2,000 metric tons of spent fuel. In order to ensure the future viability of our nuclear generating capacity, we need a safe, permanent, geologic repository for spent nuclear fuel and high-level nuclear waste at **Yucca Mountain**. The FY 2008 budget of $494.5 million sets us on the path to meet that goal. The funding will support the development of a repository including:

- Filing and defending a high quality License Application at the Nuclear Regulatory Commission (NRC) based on a simpler and safer approach to handling spent nuclear fuel and operating the repository not later than June 30, 2008;
- Continuing the planning and design for facilities required for the receipt of spent nuclear fuel and high-level waste for emplacement in the repository;
- Making critical infrastructure upgrades at Yucca Mountain to ensure worker, regulator, and visitor safety and operational efficiency; and

- Continuing critical interactions needed to support national transportation planning activities and issuance of the Nevada Rail Alignment Environmental Impact Statement.

Designing, licensing and constructing a permanent geologic repository for spent nuclear fuel and high level waste will resolve the challenge of safe disposal of these materials and make construction of new nuclear power plants through the President's **Global Nuclear Energy Partnership** (GNEP) more feasible, helping to expand our energy options and secure our economic future. In addition, a repository is necessary to support nuclear nonproliferation goals, contributing to national security objectives.

In late 2006, the Department announced its plans to submit a License Application for the repository to the NRC by June 30, 2008, and to initiate repository operations in 2017. This opening date of 2017 is a "best-achievable schedule" and is predicated upon enactment of pending legislation. This proposed legislation addresses many of the uncertainties, currently beyond the control of the Department, that have the potential to significantly delay the opening date for the repository. The legislative proposal that the Administration submitted to Congress in 2006 and will resubmit in this Congress addresses significant funding reform and regulatory issues that, if enacted, would allow the Department to secure the necessary fiscal resources needed for program success and clears the path for the program to move forward expeditiously.

ENABLING THE MISSION THROUGH SOUND MANAGEMENT

The Department of Energy is committed to continuing the transformation of its management culture and increasing its focus on results. The Department has redoubled its efforts to improve in key functional areas and is using its new strategic plan as the roadmap to instill management excellence to achieve the Department's strategic themes. To meet the challenge of the President's Management Agenda to become more efficient, effective, results-oriented, and accountable for performance, the Department will continue its focus on strengthening management discipline, especially in the areas of human capital, financial management, e-government, budget and performance integration, competitive sourcing, and real property.

People are the Department's most important resource. The Department's human capital management efforts are focused on an integrated approach that ensures human capital programs and policies are linked to the Department's missions, strategies, and strategic goals, while providing for continuous improvement in efficiency and effectiveness. The Department has revised its human capital management strategic plan to address future organizational needs, workforce size, skill gaps, performance management systems and diversity. In FY 2008, the Department will implement key components of this strategic plan, especially critical efforts to ensure the Department's workforce has the necessary skills to carry out its critical mission. To accomplish this goal, the Department will continue to implement strategies to attract, motivate and retain a highly skilled and diverse workforce to meet the future needs of the nation in such vital areas as scientific discovery and innovation.

To continually improve the Department's stewardship of taxpayer dollars, one of the top priorities for DOE is strengthening its financial performance. Throughout FY 2006, the Department made progress toward its goal of securing an unqualified audit opinion of its financial statements by implementing an aggressive plan to mitigate and remediate a

number of financial management challenges that were identified by the Department and its independent auditors. Most notably, a new automated cost accrual system was deployed improving the accuracy, consistency, and reliability of the accounting records.

The Department will continue its effort to build and improve its integrated business management system – I-MANAGE. In FY 2008, the Department will deploy the Strategic Integrated Procurement Enterprise System (STRIPES), which will provide a modernized procurement environment, replacing the Department's large number of disparate procurement systems. In addition, in FY 2008, development will continue on the I-MANAGE budget execution and formulation modules for future deployment.

To improve financial performance in project management, the Department enhanced the use of Earned Value Management (EVM) techniques that objectively track physical accomplishment of work and provide early warning of performance problems. The Department instituted a certification process for its contractors' EVM systems to improve the definition of project scope, communicate objective progress to stakeholders and keep project teams focused on achieving progress. To date, 43 of the Department's 103 capital asset projects have certified EVM systems. In FY 2008, the Department will continue toward our goal of ensuring all projects have certified systems. With the continued application of EVM, project management at the Department can be further enhanced, making projects far more likely to stay within planned cost and schedule.

The Department has strengthened information technology management by reenergizing its efforts to oversee project performance and remediate poorly performing projects. A comprehensive IT project manager's certification program has been instituted to further ensure vigorous project management. By establishing an Enterprise Architecture that aligns to the Federal Enterprise Architecture, DOE has ensured that all Department IT investments follow a comprehensive Modernization Roadmap.

The Department continues to take significant actions to improve its cyber security posture by implementing its Cyber Security Revitalization Plan. The Department is addressing long-standing, systemic weaknesses in protecting DOE's information and information systems. Specifically, the Department seeks to ensure that 100 percent of operational information technology systems are certified and accredited as secure and that the Department's Inspector General has rated the certification and accreditation process as "satisfactory." The Department will also take steps needed to ensure that electronic classified and personally identifiable information are secure.

To ensure its sustained focus on results, the Department will continue to use the Program Assessment Rating Tool (PART) to measure performance and ensure programs are producing results that matter to the American people. The Department is using PART as a key input to make better informed programmatic, policy, budget, and management decisions. The Department is also developing an executive management performance reporting tool to provide senior managers with just-in-time key performance data to monitor progress on critical initiatives, and is fine-tuning the metrics used to make decisions.

The Department will continue to ensure that competitive sourcing has been carefully and consistently considered as a management tool for enhancing performance and reducing costs. As of FY 2006, the Department completed nine competitive sourcing studies and has two others underway. The completed studies encompass over 1,300 federal and 1,000

contractor positions with $537.6 million in expected savings over five years. During fiscal years 2007 and 2008, DOE anticipates studying an additional 100 to 300 positions.

To manage the Department's large real property portfolio requires reliable data. The Department has improved its Facility Information Management System and satisfied the Federal Real Property Council's goal of 100% reporting of all data elements. Further, the Department implemented a statistical validation program to ensure the integrity of real property data and better support real property decision-making. To make continuous improvements, the Department will invest in its infrastructure to reduce overall facility square footage, improve energy efficiency and sustainability, and implement an active asset management plan to align resource needs with key Departmental goals.

A more detailed summary description of the Department of Energy's FY 2008 budget request follows.

Department of Energy

Budget by Organization

(discretionary dollars in thousands)

	FY 2006 Current Approp.	FY 2007 Congressional Request	FY 2008 Congressional Request	FY 2008 vs. FY 2007 $	FY 2008 vs. FY 2007 %
Discretionary Summary By Organization					
National Security					
Weapons	6,355,297	6,407,889	6,511,312	+103,423	+1.6%
Defense Nuclear Nonproliferation	1,619,179	1,726,213	1,672,646	-53,567	-3.1%
Naval Reactors	781,605	795,133	808,219	+13,086	+1.6%
Office of the Administrator	354,223	386,576	394,656	+8,080	+2.1%
Total, National Nuclear Security Administration	9,110,304	9,315,811	9,386,833	+71,022	+0.8%
Energy and Environment					
Energy					
Energy Efficiency and Renewable Energy	1,162,747	1,176,421	1,236,199	+59,778	+5.1%
Electricity Delivery & Energy Reliability	158,178	124,928	114,937	-9,991	-8.0%
Fossil Energy	829,814	648,876	863,036	+214,160	+33.0%
Nuclear Energy	550,226	632,698	874,649	+241,951	+38.2%
Total, Energy	2,700,965	2,582,923	3,088,821	+505,898	+19.6%
Environment					
Environmental Management	6,589,532	5,828,038	5,655,351	-172,687	-3.0%
Civilian Radioactive Waste Management	495,000	544,500	494,500	-50,000	-9.2%
Office of Legacy Management	77,812	200,990	194,167	-6,823	-3.4%
Total, Environment	7,162,344	6,573,528	6,344,018	-229,510	-3.5%
Total, Energy and Environment	9,863,309	9,156,451	9,432,839	+276,388	+3.0%
Science					
Science	3,632,044	4,101,710	4,397,876	+296,166	+7.2%
Corporate Management					
Office of the Secretary	5,399	5,539	5,787	+248	+4.5%
Competitive Sourcing	2,464	2,982	1,770	-1,212	-40.6%
Cost of Work and Revenues	-50,717	-69,318	-69,827	-509	-0.7%
Chief Information Officer	86,302	108,822	111,107	+2,285	+2.1%
Chief Financial Officer	37,522	36,790	40,260	+3,470	+9.4%
Innovative Technology Loan Guarantee Program	——	——	8,390	+8,390	N/A
Management	53,973	55,237	63,939	+8,702	+15.8%
Human Resources	17,384	22,029	28,161	+6,132	+27.8%
Board of Contract Appeals	648	147	——	-147	-100.0%
Hearings and Appeals	4,310	4,422	4,607	+185	+4.2%
Congressional and Intergovernmental Affairs	4,795	4,866	4,762	-104	-2.1%
Public Affairs	4,475	4,419	3,860	-559	-12.6%
General Counsel	23,069	24,725	30,076	+5,351	+21.6%
Policy and International Affairs	15,844	19,876	21,170	+1,294	+6.5%
Economic Impact and Diversity	6,136	5,969	6,483	+514	+8.6%
Inspector General	41,580	45,507	47,732	+2,225	+4.9%
Security and Safety Performance Assurance	304,024	298,497	——	-298,497	-100.0%
Environment, Safety and Health	103,979	109,935	——	-109,935	-100.0%
Health, Safety and Security	——	——	428,358	+428,358	N/A
Energy Information Administration	85,314	89,769	105,095	+15,326	+17.1%
Power Marketing Administrations	269,725	228,975	217,435	-11,540	-5.0%
Total, Corporate Management	1,016,226	999,188	1,059,165	+59,977	+6.0%
Cerro Grande Fire Activities	742	——	——	——	——
Federal Energy Regulatory Commission	-50,015	-19,221	-17,462	+1,759	+9.2%
Total, Discretionary Funding	**23,572,610**	**23,553,939**	**24,259,251**	**+705,312**	**+3.0%**

Department of Energy

Budget by Appropriation

(discretionary dollars in thousands)

	FY 2006 Current Approp.	FY 2007 Congressional Request	FY 2008 Congressional Request	FY 2008 vs. FY 2007 $	FY 2008 vs. FY 2007 %
Discretionary Summary By Appropriation					
Energy And Water Development, And Related Agencies Appropriation Summary:					
Energy Programs					
Energy supply and Conservation	1,812,397	1,923,361	2,187,943	+264,582	+13.8%
Fossil energy programs					
Clean coal technology	-20,000	——	-58,000	-58,000	N/A
Fossil energy research and development	580,669	469,686	566,801	+97,115	+20.7%
Naval petroleum and oil shale reserves	21,285	18,810	17,301	-1,509	-8.0%
Elk Hills school lands fund	83,520	——	——	——	——
Strategic petroleum reserve	207,340	155,430	331,609	+176,179	+113.3%
Northeast home heating oil reserve	——	4,950	5,325	+375	+7.6%
Strategic petroleum account	-43,000	——	——	——	——
Total, Fossil energy programs	829,814	648,876	863,036	+214,160	+33.0%
Uranium enrichment D&D fund	556,606	579,368	573,509	-5,859	-1.0%
Energy information administration	85,314	89,769	105,095	+15,326	+17.1%
Non-Defense environmental cleanup	349,687	310,358	180,937	-129,421	-41.7%
Uranium Sales and Remediation	——	——	——	——	——
Science	3,632,044	4,101,710	4,397,876	+296,166	+7.2%
Nuclear waste disposal	148,500	156,420	202,454	+46,034	+29.4%
Departmental administration	120,595	128,825	148,548	+19,723	+15.3%
Inspector general	41,580	45,507	47,732	+2,225	+4.9%
Innovative Technology Loan Guarantee Program	——	——	8,390	+8,390	N/A
Total, Energy Programs	7,576,537	7,984,194	8,715,520	+731,326	+9.2%
Atomic Energy Defense Activities					
National nuclear security administration:					
Weapons activities	6,355,297	6,407,889	6,511,312	+103,423	+1.6%
Defense nuclear nonproliferation	1,619,179	1,726,213	1,672,646	-53,567	-3.1%
Naval reactors	781,605	795,133	808,219	+13,086	+1.6%
Office of the administrator	354,223	386,576	394,656	+8,080	+2.1%
Total, National nuclear security administration	9,110,304	9,315,811	9,386,833	+71,022	+0.8%
Environmental and other defense activities:					
Defense environmental cleanup	6,129,729	5,390,312	5,363,905	-26,407	-0.5%
Other defense activities	635,578	717,788	763,974	+46,186	+6.4%
Defense nuclear waste disposal	346,500	388,080	292,046	-96,034	-24.7%
Total, Environmental & other defense activities	7,111,807	6,496,180	6,419,925	-76,255	-1.2%
Cerro grande fire activities	742	——	——	——	——
Total, Atomic Energy Defense Activities	16,222,853	15,811,991	15,806,758	-5,233	-0.0%
Power marketing administrations:					
Southeastern power administration	5,544	5,723	6,463	+740	+12.9%
Southwestern power administration	29,864	31,539	30,442	-1,097	-3.5%
Western area power administration	231,652	212,213	201,030	-11,183	-5.3%
Falcon & Amistad operating & maintenance fund	2,665	2,500	2,500	——	——
Colorado River Basins	——	-23,000	-23,000	——	——
Total, Power marketing administrations	269,725	228,975	217,435	-11,540	-5.0%
Federal energy regulatory commission	——	——	——	——	——
Subtotal, Energy And Water Development and Related Agencies	24,069,115	24,025,160	24,739,713	+714,553	+3.0%
Uranium enrichment D&D fund discretionary payments	-446,490	-452,000	-463,000	-11,000	-2.4%
Excess fees and recoveries, FERC	-50,015	-19,221	-17,462	+1,759	+9.2%
Total, Discretionary Funding	**23,572,610**	**23,553,939**	**24,259,251**	**+705,312**	**+3.0%**

SECTION 1. ENERGY SECURITY

(discretionary dollars in thousands)

	FY 2006 Current Approp.	FY 2007 Congressional Request	FY 2008 Congressional Request	FY 2008 vs. FY 2007 $	FY 2008 vs. FY 2007 %
Energy Security					
Energy Efficiency and Renewable Energy	1,162,747	1,176,421	1,236,199	+59,778	+5.1%
Electricity Delivery & Energy Reliability	158,178	124,928	114,937	-9,991	-8.0%
Fossil Energy Research And Development	580,669	469,686	566,801	+97,115	+20.7%
Nuclear Energy	550,226	632,698	874,649	+241,951	+43.2%
Energy Information Administration	85,314	89,769	105,095	+15,326	+17.1%
Power Marketing Administrations	269,725	228,975	217,435	-11,540	-5.0%
Innovative Technology Loan Guarantee Program	——	——	8,390	+8,390	N/A
Total, Energy Security	**2,806,859**	**2,722,477**	**3,123,506**	**+401,029**	**+73.0%**

Energy Security Strategic Theme: Promoting America's energy security through reliable, clean, and affordable energy

Goal 1.1 Energy Diversity – Increase our energy options and reduce dependence on oil, thereby reducing vulnerability to disruption and increasing the flexibility of the market to meet U.S. needs

Goal 1.2 Environmental Impacts of Energy – Improve the quality of the environment by reducing greenhouse gas emissions and environmental impacts to land, water, and air from energy production and use

Goal 1.3 Energy Infrastructure – Create a more flexible, more reliable, and higher capacity U.S. energy infrastructure

Goal 1.4 Energy Productivity – Cost-effectively improve the energy efficiency of the U.S. economy

Energy Efficiency and Renewable Energy

	FY 2006 Current Approp.	FY 2007 Congressional Request	FY 2008 Congressional Request	FY 2008 vs. FY 2007 $	FY 2008 vs. FY 2007 %
Energy Efficiency and Renewable Energy					
Hydrogen technology	153,451	195,801	213,000	+17,199	+8.8%
Biomass and biorefinery systems R&D	89,776	149,687	179,263	+29,576	+19.8%
Solar energy	81,791	148,372	148,304	-68	-0.0%
Wind energy	38,333	43,819	40,069	-3,750	-8.6%
Geothermal technology	22,762	——	——	——	——
Hydropower	495	——	——	——	——
Vehicle technologies	178,351	166,024	176,138	+10,114	+6.1%
Building technologies	68,190	77,329	86,456	+9,127	+11.8%
Industrial technologies	55,856	45,563	45,998	+435	+1.0%
Federal energy management program	18,974	16,906	16,791	-115	-0.7%
Facilities and infrastructure	26,052	5,935	6,982	+1,047	+17.6%
Weatherization and intergovernmental activities	316,866	225,031	204,904	-20,127	-8.9%
Program direction	101,868	91,024	105,013	+13,989	+15.4%
Program support	13,321	10,930	13,281	+2,351	+21.5%
Use of prior year balances	-3,339	——	——	——	——
Total, Energy Efficiency and Renewable Energy	**1,162,747**	**1,176,421**	**1,236,199**	**+59,778**	**+5.1%**

The **Office of Energy Efficiency and Renewable Energy** (EERE) conducts research, development, and deployment activities in partnership with industry to advance a diverse supply of energy efficiency and clean power technologies and practices. The FY 2008 budget request continues to support research on alternatives that will decrease our nation's dependence on foreign oil and accelerate development of clean electricity supply options.

PROGRAM DESCRIPTION

EERE's activities promote the development and use of clean, reliable, efficient, and cost-effective power technologies to meet growing national energy needs, reduce dependence on foreign energy sources, and enhance energy security. The **FY 2008 budget request** is **$1,236.2 million**, an increase of $59.8 million, or 5.1 percent above the FY 2007 request.

The **Hydrogen Technology** program focuses on hydrogen production, delivery, storage, and fuel cell technologies. The FY 2008 budget completes President Bush's 5-year, $1.2 billion commitment to the **Hydrogen Fuel Initiative**, which aims to reverse America's growing dependence on foreign oil by accelerating the development of hydrogen fuel cell vehicles and infrastructure technologies. Although the President's funding commitment is complete, the work is not, the program's goal is "technology readiness" to enable the automobile and energy companies to opt for commercial availability of fuel cell vehicles and hydrogen infrastructure by 2020. The overall request for the President's Hydrogen Fuel Initiative in FY 2008 is $309.0 million (EERE's portion is $213.0 million); other organizations also contribute to this funding crosscut including: 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; and hydrogen safety-related activities at the U.S. Department of Transportation.

The **Biomass and Biorefinery Systems R&D** program focus is on research and development to transform the nation's domestic biomass resources into affordable biofuels and support the President's AEI goal to make cellulosic ethanol cost competitive by 2012. Achieving this goal could allow market penetration of significant amounts of ethanol that could help reduce our depended on oil. Biomass is a critical renewable resource, as it is the only renewable option for producing liquid transportation fuels in the near term and reducing

our dependency on imported oil. The program focuses on developing a wide range of regionally available cost-effective biomass feedstocks along with harvesting, storage and delivery systems suitable for diverse regions and climates; reducing the cost of outputs and byproducts from biochemical and thermochemical processes; and integrating these processes into biorefineries that co-produce liquid and gaseous fuels, chemicals and materials, and/or heat and power.

The **Solar Energy** program focuses on research and deployment of solar power that will reduce our demand for natural gas and promote a cleaner environment. Through the **Solar America Initiative** (SAI), the Solar Program is accelerating the market competitiveness of solar electricity as industry-led teams compete to deliver photovoltaic (PV) systems ($137.3 million) that are less expensive, more efficient, and highly reliable. By focusing on PV manufacturing and systems integration issues, the program estimates that progress toward its cost could aid in the deployment of 5-10 gigawatts (GW) of new grid-connected electricity generating capacity by 2015. Market transformation efforts will promote adoption of market-ready solar technologies by providing targeted tools and assistance to important stakeholders such as states, utilities, cities, the building industry, and the federal sector. The program will also facilitate continued growth of the domestic solar market by addressing key market barriers such as fragmented interconnection and net metering practices. In addition, the Solar program is working with industry to lower the cost of concentrating solar power technologies ($9.0 million) and to develop thermal storage capabilities that will enhance its value to utilities and allow solar to compete in large-scale centralized generation markets.

The **Wind Energy** program leads the nation's effort to accelerate the market penetration of wind energy by improving the performance and reliability of wind technology, reducing risks to project development, enhancing critical energy infrastructure, and advancing policies in support of wind energy. The program is aggressively working to remove wind energy barriers through government and private sector stakeholder collaboration and improve wind technology through industry partnerships and applied research and testing.

The **Vehicle Technologies** program supports the **FreedomCAR and Fuel Partnership ($207.8 million** total, $126.6 million from Vehicle Technologies) and the **21st Century Truck Partnership** ($ million) in order to enable personal and commercial highway vehicles to become more efficient. Technology research includes lightweight materials, advanced batteries, power electronics and electric motors for hybrid and plug-in hybrid vehicles, and advanced combustion engines and fuels. These technologies contribute to reducing the nation’s use of oil. In FY 2008, the program is increasing research on technologies needed for cost effective plug-in hybrid vehicles (i.e. those that can be plugged in and recharged from an electric outlet or operated on liquid fuels) and on deployment activities to accelerate the use of maturing energy efficiency technologies such as alternative fuels.

Building Technologies (BT) program develops and deploys technologies for improving energy efficiency. The reduction of building energy requirements, coupled with renewable energy systems, could enable commercial production of net Zero Energy Homes and Buildings by 2020 and 2025, respectively. The portfolio of energy efficiency research to reduce building electrical loads includes **solid state lighting** ($19.3 million) more affordable efficient windows, and more efficient heating, ventilation and air conditioning. The program pursues market transformation activities by developing Energy Star labels for major appliances such as windows, refrigerators, dishwashers and compact fluorescent lights, and by establishing building codes and national appliance standards on an accelerated schedule. The program also develops tools and information for promoting whole-building system design and construction approaches that aim to optimize the integration of energy efficiency and renewable energy systems.

Industrial Technologies program (ITP) works to reduce the energy intensity of the U.S. industrial sector through a coordinated program of research and development, validation, and dissemination of energy-efficiency technologies and operating practices. ITP supports the

Secretary of Energy's "Easy Ways to Save Energy" campaign through industrial energy saving assessments. These "Save Energy Now" assessments identify cost-effective energy savings (up to 10 percent), with a special focus on natural gas consumption.

The **Federal Energy Management** program (FEMP) reduces the cost and environmental impact of the federal government's energy use by advancing energy efficiency, water conservation and renewable energy in federal facilities, including the Department of Energy's facilities. It also analyzes and reports on federal energy use in buildings and vehicle fleets.

The **Facilities and Infrastructure** activity manages and supports capital investments to continue the build out of a world-class research and development program complex at the National Renewable Energy Lab (NREL). NREL's central mission is to support the nation's efforts in developing a portfolio of energy efficiency and renewable energy technologies.

Weatherization and Intergovernmental Activities utilize technical and financial assistance to accelerate the adoption of energy efficiency and renewable energy technologies and practices by state and local governments, weatherization agencies, Native American Tribal Governments, and international partners. **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 and competitive grants and technical assistance. **Tribal Energy Activities** builds partnerships with tribal governments and provides technical and financial assistance for energy efficiency and renewable energy projects and for long range energy planning. The **Renewable Energy Production Incentive** provides incentive payments to qualifying facilities for the production of renewable energy. The **Asia Pacific Partnership** works with partner nations (Australia, China, India, Japan, and South Korea) to develop and accelerate the deployment of clean energy supply and efficiency technologies.

The **Program Direction** account provides personnel and operational resources for executive and technical direction and oversight for the programs described above. These include operations at Headquarters and the Field Project Management Center (PMC). The PMC responsibilities include project management of R&D partnerships, NREL contract administration, and financial assistance administration. Headquarters activities include knowledge, information and business systems supporting the Presidential eGov initiative and compliance with departmental policy for functional accountability.

The **Program Support** account provides for program measurement and strategic direction, as well as for technology advancement and outreach. Planning, Analysis and Evaluation activities provide timely information to inform portfolio investment decisions. Technical Advancement and Outreach activities provide the public with accurate information on energy efficiency and renewable energy technologies to help the public make better energy choices.

PROGRAM HIGHLIGHTS

The FY 2008 request continues the focus on the President's Advanced Energy Initiative – accelerating breakthroughs in clean energy technologies for powering our homes and businesses, which can help diverse our energy supply and reduce emissions, and for powering our automobiles, which can help reduce the nation's dependence of foreign sources of oil.

- Funding for Biomass and Biorefinery Systems R&D is increased by $29.6 million above the FY 2007 request on $149.7 million. The FY 2008 request continues to support construction of a commercial scale biorefinery demonstration project and initiates a 10 percent commercial scale biorefinery project. The FY 2008 request initiates a cellulosic ethanol reverse auction program outlined in Section 942 of the Energy Policy Act of 2005. Funding also supports expanded research into improved

syngas and bio-oils, and to broaden the amount of feedstocks regionally available to produce cellulosic ethanol. These activities support the Advanced Energy Initiative goal to make ethanol produced from the cellulosic biomass (such as agricultural and forest residues, forest resources, and energy crops like switchgrass) cost-competitive by 2012.

- Compared to the FY 2007 request, funding for Hydrogen Technologies is increased by $17.2 million to $213.0 million in FY 2008 to expand R&D in key areas, including hydrogen production from renewables, low cost hydrogen delivery technologies, and materials and engineering science for vehicular hydrogen storage. Funding is also increased in R&D for fuel cell components to reduce cost and increase durability, and in a new effort on manufacturing technologies to build a globally competitive, domestic hydrogen and fuel cell supply base. Increased emphasis will be placed on codes and standards for near-term hydrogen applications and education of key stakeholders, with emphasis on hydrogen safety to help lay the foundation for future public acceptance and market adoption of hydrogen and fuel cell technologies.
- Funding for Vehicle Technologies is increased by $10.1 million. The research agenda will increase the emphasis on plug-in hybrid electric vehicles (PHEV), a technology that has the potential to make significant additional improvements in petroleum reduction beyond that achievable with current hybrid configurations. Also, increased emphasis will be given to deployment activities to accelerate the commercialization and market acceptance of oil use reduction technologies with particular emphasis on the adoption and use of alternative fuels.
- At $148.3 million funding for Solar Energy remains constant with the FY 2007 request as do the Federal Energy Management ($16.8 million) and Industrial Technology ($46.0 million) programs.

SIGNIFICANT FUNDING CHANGES – FY 2007 to 2008 Request ($ in millions)

Hydrogen Technology (FY 2007 $195.8; FY 2008 $213.0).....+$17.2
Overall funding for Hydrogen Technology increases by 9 percent to accelerate R&D underpinning the automobile and energy companies' ability to opt for commercial availability of fuel cell vehicles and hydrogen infrastructure by 2020. Increases include hydrogen production (+$3.2), hydrogen storage (+$9.3), fuel cell stack components (+$5.9), safety and codes and standards (+$2.2), education efforts (+$1.9), system analysis (+1.9), and manufacturing R&D (+$3.0). The funding for the Controlled Hydrogen Fleet and Infrastructure Demonstration and Validation Project is reduced (-$9.6) but sufficient to provide data that will help to direct and further refine research efforts.

Biomass and Biorefinery Systems R&D (FY 2007 $149.7; FY 2008 $179.3).....+$29.6
Biomass and Biorefinery Systems R&D is increased 20 percent. The additional funding will continue the commercial scale biorefinery demonstration project and initiate a 10 percent commercial scale biorefinery project (+$39.0). This increase is partially offset by the completion in FY 2007 of several bio-based product projects (-$23.9). New funding is also requested to establish a cellulosic ethanol reverse auction program outlined in Section 942 of the Energy Policy Act of 2005 (+$5.0), and to expand research into improved syngas and bio-oils and to broaden the amount of feedstocks (+$8.9).

Wind Energy (FY 2007 $43.7; FY 2008 $40.1) ..... -$3.7
Distributed Wind Technology (+$3.4) and Technology Acceptance (+$5.0) are increased to support a new round of distributed wind technology partnerships in this immature technology for concept, component, and system prototype projects for moderately sized wind turbines, initiate state-based incentive programs, initiate a new a new partnership aimed at the community wind and farm market and to address siting, permitting, and environmental barriers to increased domestic energy production. Low wind speed Technology is decreased

(-$13.3) to focus on near term actions to significantly accelerate use of wind energy technologies.

Building Technologies (FY 2007 $77.3; FY 2008 $86.4)..... +$9.1
Additional funding restores critical elements of the building code program (+$3.7) and grows Energy Star (+$1.0), Standards (+$1.7), and net zero energy building program components (+$2.3).

Weatherization and Intergovernmental Activities
(FY 2007 $225.0; FY 2008 $204.9)..... -$20.1
The 9-percent overall funding reduction for Weatherization and Intergovernmental Activities reflects DOE's emphasis on EERE R&D projects with great potential for future energy savings. The changes include: the phase out of the International Renewable Energy Program (-$2.5); the decrease in the amounts requested for Weatherization Assistance Program Grants (-$20.2), State Energy Program ($-4.0), and Tribal Energy Activities (-$1.0); and an increase for the Asia Pacific Partnership (+$7.5).

Program Direction (FY 2007 $91.0; FY 2008 $105.0) .....+$14.0
Increase in funding will allow EERE to hire staff with the required skills for specific programs. Request fully supports 540 FTEs, an increase of 26 from FY 2006 budgeted levels.

Electricity Delivery and Energy Reliability

(discretionary dollars in thousands)

	FY 2006 Current Approp.	FY 2007 Congressional Request	FY 2008 Congressional Request	FY 2008 vs. FY 2007 $	FY 2008 vs. FY 2007 %
Electricity Delivery and Energy Reliability					
Energy Supply and Conservation					
Research and development	132,589	95,636	85,994	-9,642	-10.1%
Electricity restructuring	12,276	——	——	——	——
Operations and analysis	——	12,009	11,556	-453	-3.8%
Program direction	13,313	17,283	17,387	+104	+0.6%
Total, Electricity Delivery and Energy Reliability	**158,178**	**124,928**	**114,937**	**-9,991**	**-8.0%**

PROGRAM DESCRIPTION

The **Office of Electricity Delivery and Energy Reliability** (OE) leads a national effort to modernize the electric grid, enhance security and reliability of the energy infrastructure, and facilitate recovery from disruptions to energy supply. OE's programmatic focus consists of two subprograms: **Research and Development**, and **Operations and Analysis** To accomplish these efforts, **OE requests $114.9 million for FY 2008**.

The **Research and Development** subprogram has the following activities:

The **High Temperature Superconductivity R&D** program pursues improvements to the efficiency and reliability of the nation's electric delivery system. The goal of this research is to develop operational wire and power prototypes that are half the size and deliver half the energy losses of conventional equipment of the same power rating by 2016.

The **Visualization and Controls** program develops communication and control systems which support adaptive, intelligent grid operations, and which integrate distributed energy devices. These advances will improve the reliability and efficiency of the electric delivery system and increase the utilization of transmission and distribution assets.

The **Energy Storage and Power Electronics** program is working to develop energy storage technologies and power switches that reduce power disturbances and peak electricity demand, and improve system flexibility to reduce adverse effects to users.

The **Renewable and Distributed Systems Integration** program develops a diverse array of cost-competitive, integrated distributed-generation and thermal energy technologies. It also supports the use of these technologies in residential, business, and industrial applications to improve electricity reliability and reduce conventional environmental effects.

The **Operations and Analysis** subprogram has the following activities:

The **Permitting, Siting, and Analysis** activity uses education, outreach, and analysis to help states, regional electric grid operators, and federal agencies to develop and improve policies, market mechanisms, regulations, state laws, and programs that assist modernization of the electric grid. Increased infrastructure investment by transmission owners and utilities should result as this activity implements the mandatory requirements in corridor designation and line permitting of the National Energy Policy Act of 2005.

The **Infrastructure Security and Energy Restoration** activity coordinates the Department's response to energy emergencies, prevents unauthorized use of the energy

infrastructure, and helps all levels of government and the private sector recover from energy supply disruptions. The President has designated DOE as the lead Sector Specific Agency responsible for protecting the nation's critical energy infrastructure. This element of OE is responsible to the Secretary of Energy for coordinating and carrying out these DOE responsibilities.

PROGRAM HIGHLIGHTS

The R&D subprogram will demonstrate several major new systems in FY 2008, including superconducting cable operating at greater than 10KV within a utility system, a first of a kind phasor measurement-based system for reactive power control, several energy storage devices in grid settings, and a packaged Cooling, Heating, and Power system exhibiting 70 percent efficiency.

The Permitting, Siting and Analysis subprogram is leading federal efforts to implement several sections of the Energy Policy Act of 2005, including a national analysis of electric transmission congestion, the designation of national interest electric transmission corridors, and the designation of multi-purpose energy corridors on federal lands.

Working with the Department of Homeland Security, the Infrastructure Security and Energy Restoration subprogram assists states with energy security activities and distribution plans, conducts exercises and educational activities to improve energy security practices, and develops models and simulations to track emerging energy sector problems.

SIGNIFICANT FUNDING CHANGES – FY 2007 to 2008 Request ($ in millions)

Electricity Delivery and Energy Reliability (FY 2007 $124.9; FY 2008 $114.9) .....-$10.0

Research and Development

High Temperature Superconductivity R&D
(FY 2007 $45.5; FY 2008 $28.2) .....-$17.3
Program efforts on 2G wire properties will refocus to include activities such as dielectrics and cyrogenics. Several alternative processing methods for 2G wire will be discontinued to concentrate on core properties of wire systems moving to market.

Visualization and Controls (FY 2007 $17.5; FY 2008 $23.3).....+$7.8
Increase reflects additional support for the development/verification of advanced security visualization tools for wide area monitoring, and market mechanisms for power system planning and operations under competitive markets.

Energy Storage and Power Electronics (FY 2007 $3.0; FY 2008 $6.8).....+$3.8
Reflects additional support for the development of high voltage power electronic systems (+$4.3) offset by a slight decrease due to the completion of an activity associated with advanced storage systems (-$0.5).

Renewable and Distributed Systems Integration (FY 2007 $29.7; FY 2008 $25.7).....-$4.0
Reflects the successful completion of demonstration activities and transition into program activities focused on the integration of distributed systems and renewable sources.

Operations and Analysis

Permitting, Siting, and Analysis (FY 2007 $5.9; FY 2008 $5.7) .....-$0.2
Reflects reduction of one laboratory staff year.

Infrastructure Security and Energy Restoration (FY 2007 $6.1; FY 2008 $5.9).....-$0.2
Reflects reduced activities to accommodate other priorities.

Program Direction

Program Direction (FY 2007 $17.3; FY 2008 $17.4) .....+$0.1
Maintain support for staffing level of 70 FTEs with slight increase for inflation.

Fossil Energy

(discretionary dollars in thousands)

	FY 2006 Current Approp.	FY 2007 Congressional Request	FY 2008 Congressional Request	FY 2008 vs. FY 2007 $	FY 2008 vs. FY 2007 %
Fossil Energy Programs					
Clean coal technology	-20,000	——	-58,000	-58,000	N/A
Fossil energy research and development	580,669	469,686	566,801	+97,115	+20.7%
Naval petroleum and oil shale reserves	21,285	18,810	17,301	-1,509	-8.0%
Elk Hills school lands fund	83,520	——	——	——	——
Strategic petroleum reserve	207,340	155,430	331,609	+176,179	+113.3%
Northeast home heating oil reserve	——	4,950	5,325	+375	+7.6%
Strategic petroleum account	-43,000	——	——	——	——
Total, Fossil Energy Programs	**829,814**	**648,876**	**863,036**	**+214,160**	**+33.0%**

The **Office of Fossil Energy** is responsible for managing Fossil Energy Research and Development, Clean Coal Technology, the Ultra-Deepwater and Unconventional Natural Gas and Other Petroleum Research Fund 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 in separate appropriation accounts. The information that follows is presented in separate sections for each account.

PROGRAM DESCRIPTION

Fossil Research and Development

(discretionary dollars in thousands)

	FY 2006 Current Approp.	FY 2007 Congressional Request	FY 2008 Congressional Request	FY 2008 vs. FY 2007 $	FY 2008 vs. FY 2007 %
Fossil Energy Research and Development					
Coal	366,762	330,119	426,602	+96,483	+29.2%
Natural gas technologies	31,801	——	——	——	——
Petroleum - Oil technologies	30,805	——	——	——	——
Program direction	105,872	129,196	129,973	+777	+0.6%
Plant and capital equipment	19,800	——	——	——	——
Fossil energy environmental restoration	9,504	9,715	9,570	-145	-1.5%
Import/export authorization	1,781	——	——	——	——
Advanced metallurgical research	7,920	——	——	——	——
Special recruitment programs	649	656	656	——	——
Cooperative research and development	5,775	——	——	——	——
Total, Fossil Energy Research and Development	**580,669**	**469,686**	**566,801**	**+97,115**	**+20.7%**

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 that enhance 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. The Energy Information Administration's, *2007 Annual Energy Outlook,* projects that fossil fuel reliance could exceed 85 percent in 2030. To address this situation the program works to

promote development of fossil fuel energy systems and practices to provide current and future generations with energy that is clean, efficient, reasonably priced, and reliable.

The Coal program is comprised of the **President's Coal Research Initiative** (which includes the **Clean Coal Power Initiative, FutureGen,** and the core coal research and development program) and Fuel Cells. The following table shows funding levels for the activities in the Coal Program:

	(dollars in thousands)		
	FY 2006 Approp.	**FY 2007 Request**	**FY 2008 Request**
President's Coal Research Initiative:			
Clean Coal Power Initiative	48,135	4,957	73,000
FutureGen	17,326	54,000	108,000
Fuels & Power Systems *(excluding Fuels Cells & U.S./China)* [1]	240,529	207,810	183,577
Program Direction *(Coal Program Specific Activities)* [2]	0	13,942	20,221
Subtotal, President's Coal Research Initiative	**305,990**	**280,709**	**384,798**
Other Coal Related Activities:			
Fuels Cells	59,788	63,352	62,025
U.S./China Energy & Envrironmental Center	984	0	0
Program Direction *(Coal Program Specific Activities)* [2]	0	595	982
Subtotal, Other Coal Related Activities[3]	**60,772**	**63,947**	**63,007**

[1] The President's Coal Research Initiative does not include funding for Fuel Cells and U.S./China.

[2] Beginning in FY 2007, the in-house activities supporting the coal program will be funded within the program direction account per the direction accompanying P.L. 109-103.

[3] Does not include Clean Coal Technology account, presented subsequently in this section.

The **Clean Coal Power Initiative** (CCPI) is a cooperative, cost-shared program between the government and industry to rapidly demonstrate emerging technologies in coal-based power generation to help 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 are 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 will establish the capability and feasibility of co-producing electricity and hydrogen from coal with near-zero atmospheric 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 near-zero atmospheric emission plants (including carbon) that are fuel-flexible and capable of multi-product output and electrical efficiencies over 60 percent. The FutureGen project would lead to a cost of electricity at no more than a ten percent increase over that of comparable plants without carbon sequestration, that use 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 (described below) will focus research efforts 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. Some Clean Coal Power Initiative activities complement FutureGen and will help drive down the costs of Integrated Gasification Combined Cycle (IGCC) systems and other technologies for near-zero atmospheric emission plants.

The **Fuels and Power systems** program provides important research for FutureGen to dramatically reduce coal power plant emissions (including carbon dioxide) and significantly improve efficiency, leading to a viable near-zero atmospheric emissions coal energy system.

The **Innovations for Existing Plants (IEP)** program supported technology development in anticipation of regulatory limits that are now being implemented through the Clean Air Interstate Rule and the Clean Air Mercury Rule. These rules were promulgated in 2005, giving the private sector an incentive to develop the technologies required to reduce their pollutant emissions at existing plants. Because the government role in development of these technologies has shifted to the private sector, the IEP program is terminated.

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, impurity tolerant hydrogen separation technology, enhance process efficiency, and reduce costs and energy requirements for producing oxygen using advanced technologies such as membranes.

The **Advanced Turbines** program is focused on creating the technology base for turbines that will permit the design of near-zero atmospheric emission IGCC plants and a class of FutureGen plants with carbon capture and sequestration (e.g. FutureGen). Building on prior successes in the Natural Gas-based Advanced Turbine Systems Advanced Turbine program research focuses on developing enabling technology for high efficiency hydrogen turbines for advanced gasification systems.

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 based (especially coal) energy plants.

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 developing technologies to substantially reduce greenhouse gas emissions in the long-term, and would play a critical role in efforts to stabilize greenhouse gas emissions in the United States.

The mission of the **Fuels** program is to conduct 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 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 second is a set of crosscutting studies and assessment activities in environmental, technical and economic analyses, coal technology export, and integrated program support.

The objectives of the **Fuel Cells** activity are to provide the technology-based development of low-cost, scalable, and fuel flexible fuel cell systems that can operate in central coal-based power systems and have applications in other electric utility (both central and distributed), industrial, and commercial/residential markets.

Consistent with the FY 2006 and FY 2007 Budget Requests, the **Petroleum – Oil Technology** and **Natural Gas Technologies** research and development programs are being terminated in FY 2008.

Ultra-Deepwater and Unconventional Natural Gas and Other Petroleum Research Fund

The Ultra-Deepwater and Unconventional Natural Gas and Other Petroleum Research Fund was created by the Energy Policy Act of 2005 (Public Law 109-58) as a mandatory program beginning in FY 2007. The program is funded from mandatory federal revenues from oil and gas leases. Consistent with the FY 2007 budget request, the FY 2008 budget proposes to repeal the program through a future legislative proposal.

Clean Coal Technology

(discretionary dollars in thousands)

	FY 2006 Current Approp.	FY 2007 Congressional Request	FY 2008 Congressional Request	FY 2008 vs. FY 2007 $	FY 2008 vs. FY 2007 %
Clean Coal Technology					
Deferral of unobligated balances, FY 2008	——	——	257,000	+257,000	N/A
Deferral of unobligated balances, FY 2005	257,000	——	——	——	——
Deferral of unobligated balances, FY 2007	-257,000	257,000	——	-257,000	-100.0%
Rescission	——	-203,000	——	+203,000	+100.0%
Rescission, uncommitted balances	-20,000	——	-149,000	-149,000	N/A
Transfer to Fossil R&D (CCPI)	——	——	-58,000	-58,000	N/A
Transfer to Fossil R&D (FutureGen)	——	-54,000	-108,000	-54,000	-100.0%
Total, Clean Coal Technology	**-20,000**	**——**	**-58,000**	**-58,000**	**N/A**

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 to meet domestic energy needs inexpensively. 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.

Elk Hills School Lands Fund

(discretionary dollars in thousands)

	FY 2006 Current Approp.	FY 2007 Congressional Request	FY 2008 Congressional Request	FY 2008 vs. FY 2007 $	FY 2008 vs. FY 2007 %
Elk Hills School Lands Fund					
California teachers' pension fund payment	47,520	——	——	——	——
Advance appropriation for previous years	36,000	——	——	——	——
Total, Elk Hills School Lands Fund	**83,520**	**——**	**——**	**——**	**——**

The National Defense Authorization Act for FY 1996, Public Law 104-106, authorized the settlement of longstanding "school lands" claims to certain lands by the State of California known as the **Elk Hills Reserve**. 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 was established in the U.S. Treasury and was reserved for payment to California.

Strategic Petroleum Reserve

(discretionary dollars in thousands)

	FY 2006 Current Approp.	FY 2007 Congressional Request	FY 2008 Congressional Request	FY 2008 vs. FY 2007 $	FY 2008 vs. FY 2007 %
Strategic Petroleum Reserve					
SPR - Facilities development	207,340	155,430	331,609	+176,179	+113.3%
Strategic Petroleum Account					
SPR - Oil acquistion	-43,000	——	——	——	——
Total, Strategic Petroleum Reserve	**164,340**	**155,430**	**331,609**	**+176,179**	**+113.3%**

The **Strategic Petroleum Reserve** (SPR) mission is to provide the United States with adequate strategic and economic protection against disruptions in oil supplies. To further insure against supply disruptions that could harm our economy, the budget proposes to begin expansion of the Reserve to 1.5 billion barrels. The process begins immediately with filling to the current capacity of 727 million barrels and then expanding capacity further at existing and new sites in FY 2008.

The Strategic Petroleum Reserve (SPR) Petroleum Account, created by the Energy Policy and Conservation Act, is the source of funds 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.

Northeast Home Heating Oil Reserve

(discretionary dollars in thousands)

	FY 2006 Current Approp.	FY 2007 Congressional Request	FY 2008 Congressional Request	FY 2008 vs. FY 2007 $	FY 2008 vs. FY 2007 %
Northeast Home Heating Oil Reserve	**——**	**4,950**	**5,325**	**+375**	**+7.6%**

On July 10, 2000 the President directed DOE to establish a heating oil reserve in the Northeast capable of assuring home heating oil supplies for the Northeast states during times of very low inventories and significant threats to immediate supply. The 2-million-barrel Reserve protects the Northeast against a supply disruption for up to 10 days, the time required for ships to carry heating oil from the Gulf of Mexico to New York Harbor for distribution.

Naval Petroleum and Oil Shale Reserves

(discretionary dollars in thousands)

	FY 2006 Current Approp.	FY 2007 Congressional Request	FY 2008 Congressional Request	FY 2008 vs. FY 2007 $	FY 2008 vs. FY 2007 %
Naval Petroleum and Oil Shale Reserves					
Production operations	13,079	10,514	10,545	+31	+0.3%
Management	8,206	8,296	6,756	-1,540	-18.6%
Naval petroleum and oil shale reserves	——	——	——	——	——
Total, Naval Petroleum and Oil Shale Reserves	**21,285**	**18,810**	**17,301**	**-1,509**	**-8.0%**

The Naval Petroleum and Oil Shale Reserve (NPOSR) mission is to complete environmental remediation activities and determine the equity finalization of NPR-1, and to operate NPR-3 until its economic limit is reached, while maintaining the Rocky Mountain Oil Field Test Center as a field demonstration facility. Since the NPOSR no longer served the national defense purpose envisioned in the early 1900s, the National Defense Authorization Act for FY 1996 (P.L. 104-106) required the sale of the government's interest in Naval Petroleum Reserve 1 (NPR-1). To comply with this requirement, the Elk Hills field in California was sold to Occidental Petroleum Corporation in 1998. Subsequently, the Department transferred two of the Naval Oil Shale Reserves (NOSR-1 and NOSR-3), both in Colorado to the Department of the Interior's (DOI) Bureau of Land Management. In January 2000, the Department returned the NOSR-2

site to the Northern Ute Indian Tribe. The Energy Policy Act of 2005 transferred administrative jurisdiction and environmental remediation of Naval Petroleum Reserve 2 (NPR-2) in California to the Department of the Interior. DOE retains the Naval Petroleum Reserve 3 (NPR-3) in Wyoming (Teapot Dome field).

PROGRAM HIGHLIGHTS

Fossil Energy Research and Development

The goal of the President's Coal Research Initiative is to conduct 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 completes the President's commitment to spend $2 billion on clean coal research over 10 years, three years ahead of schedule.

The Fossil Energy Research and Development (FERD) program continues to incorporate criteria into the program and project selection process consistent with the Administration's Research and Development Investment Criteria that directs the application of specific criteria to DOE's applied research and development investments. The FY 2008 budget request takes into consideration the National Energy Policy Act of 2005 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 emphasize research and development activities that support FutureGen as FERD's highest priority.

As directed by the FY 2006 Energy and Water Appropriations Conference report language, beginning in the FY 2007, the FER&D Program is requesting all salary and related expenses of federal employees in one program direction account versus the programmatic accounts.

Ultra-Deepwater and Unconventional Natural Gas and Other Petroleum Research Fund

Consistent with the FY 2007 budget request, the FY 2008 budget proposes to repeal the program through a future legislative proposal.

Clean Coal Technology

For FY 2008, all project funding commitments have been fulfilled and only project closeout activities remain. The amounts included for FY 2008 in this budget assume the deferral of $257 million into FY 2008 from FY 2007 and $66 million in unobligated balances is carried forward at the end of FY 2007, as provided by the continuing resolution under which the account was operating at the time the budget was prepared (P.L. 109-289, Division B as amended). The Department proposes to transfer $108 million of the $257 million deferral to the FutureGen project and cancel the remaining $149 million from the deferral. Of the $66 million in unobligated balances carried forward at the start of FY 2008, $58 million is transferred to the Clean Coal Power Initiative (CCPI), leaving $8 million in balances for closeout activities.

Elk Hills School Lands Fund

To date, the fund has paid out $300 million. The first installment payment of the settlement agreement was appropriated in FY 1999. While no appropriation was provided in FY 2000, the Act provided an advance appropriation of $36.0 million that

became available in FY 2001 (second installment). The next four installments of $36 million were paid at the beginning of FY 2002, FY 2003, FY 2004, and FY 2005 respectively. A seventh payment of $84 million was made in FY 2006.

No funding is requested in FY 2007 or FY 2008. The timing and levels of any future budget requests are dependent on the schedule and results of the equity finalization process.

Strategic Petroleum Reserve

Funding in FY 2008 allows the Strategic Petroleum Reserve to maintain its continual readiness posture through a comprehensive program of systems maintenance, exercises, and tests. To further insure against supply disruptions that could harm our economy, the budget includes $168 million to begin expansion at existing and new sites to 1.5 billion barrels.

Northeast Home Heating Oil Reserve

The Northeast Home Heating Oil Reserve contains 2 million barrels of heating oil stored at commercial terminals in the Northeast and is in good condition. The current 5-year storage contracts expire in September 2007. A request for bids will be issued in February 2007.

Naval Petroleum Reserve

The NPOSR mission has evolved to complete environmental remediation activities and determine the equity finalization of NPR-1. The program continues post-sale activity related to the settlement of ownership equity shares with the former unit partner in the NPR-1 field, Chevron U.S.A., Inc.

The NPR-3 primary focus has been to apply conventional oil field management and operations to produce the stripper field to its economic limit. Revenues in FY 2008 are estimated at $4.4 million. Co-located with NPR-3, the Rocky Mountain Oilfield Testing Center (RMOTC) provides opportunities for field testing and demonstration of upstream and environmental products.

SIGNIFICANT FUNDING CHANGES – FY 2007 to 2008 Request ($ in millions)

Fossil Energy Research and Development

Coal (FY 2007 $330.1; FY 2008 $426.6) .....+$96.5

Clean Coal Power Initiative (FY 2007 $5.0; FY 2008 $73.0).....+$68.0
In FY 2008, the program will continue ongoing Clean Coal Power Initiative (CCPI) Round 1 and Round 2 and Power Plant Improvement projects to support the President's Coal Research Initiative. The funding request for FY 2008 will go towards accumulated funds for supporting the solicitation of a third round of projects targeting advanced technology systems that capture carbon dioxide for sequestration or beneficial reuse which will be issued in 2008.

FutureGen (FY 2007 $54.0; FY 2008 $108.0).....+$54.0
FY 2008 funding will support detailed plant design and procurement activities, in addition to a continuation of ongoing permitting, preliminary design, and site characterization efforts. This funding meets the requirements of the FutureGen Report to Congress and will allow the project to proceed to detailed design along with long-lead procurement of hardware consistent with a 2012 start of operations.

Innovations for Existing Plants (IEP) (FY 2007 $16.0; FY 2008 $0).....-$16.0
IEP program supported technology development for retrofits to existing conventional power plants, in anticipation of regulatory limits that are now being implemented through the Clean Air Interstate Rule and the Clean Air Mercury Rule. Because the industry now has strong regulatory drivers to complete development on their own and commercially deploy such technologies, the IEP program is terminated.

Integrated Gasification Combined Cycle (FY 2007 $54.0; FY 2008 $50.0) .....-$4.0
In FY 2008, the program will conduct research in support of gasification technologies to integrate into power systems that use coal-derived fuels to produce electricity and hydrogen, and to capture and sequester CO2. The FY 2008 request reflects reductions in Systems Analysis/Production (-$1.6) and in Vision 21 (-$17.0). The reduction is offset by an increase in Gasification Systems Technology (+$14.6) which is due to restructuring activities that resulted in the incorporation of active projects from the Vision 21 activity. All work on the development of technologies for the co-production of electricity and substitute natural gas will be terminated because the program's primary objective is to develop technologies for near-zero atmospheric emissions co-production of electricity and hydrogen.

Advanced Turbines (FY 2007 $12.8; FY 2008 $22.0).....+$9.2
FY 2008 activities focus on advanced technology development for coal based hydrogen turbines with high efficiency and ultra-low emissions in support of near-zero atmospheric emission coal plants as represented by FutureGen. The increase will support high priority hydrogen turbine development for the FutureGen project.

Carbon Sequestration (FY 2007 $74.0; FY 2008 $79.1).....+$5.1
FY 2008 activities focus on greenhouse gas control technologies, including low-cost carbon dioxide separation and capture; and monitoring, measurement and verification technologies as well as field testing and systems development for carbon sequestration. The increase will support the Validation Phase activities for the Carbon Sequestration Regional Partnerships (CSRP), as well as beginning work on four large-scale field tests of carbon sequestration (approximately 1 million metric tons per year).

Fuels (FY 2007 $22.1; FY 2008 $10.0).....-$12.1
FY 2008 activities focus research on low-cost hydrogen from clean coal in support of the President's Hydrogen Fuel Initiative. No funding is provided for research and development activities on co-production of substitute natural gas or on producing, distributing, storing, or reformation of liquid carriers of hydrogen.

Advanced Research (FY 2007 $28.9; FY 2008 $22.5).....-$6.4
FY 2008 activities focus on activities aimed at innovations and advanced concepts that support development of highly efficient and clean power plants focusing on the reduction or elimination of adverse environmental impacts for coal use. The reduction reflects the completion of collaborative Advanced Power Research, termination of research on bioprocessing of coal, and issues associated with analysis of environmental impacts of pollutants.

Fuel Cells (FY 2007 $63.4; FY 2008 $62.0).....-$1.3
In FY 2008, the program will continue the second phase of the three phase SECA (3-10kW) program aimed at $400/kW, and continue to work on SECA Coal Based Fuel Cell projects focused on scaling solid-oxide fuel cells for FutureGen class central generation.

Environmental Restoration (FY 2007 $9.7; FY 2008 $9.6).....-$0.1
Requested funding will support compliance with applicable federal, state, and local environment, safety and health regulations.

Program Direction (FY 2007 $129.2; FY 2008 $130.0).....+$0.8
The change reflects the transfer of 6 FTEs and associated funding to the newly established Office of the Federal Coordinator for the Alaska Natural Gas Transportation Project (-$2.3). FY 2008 funding also reflects the reduction of 42 FTEs in the oil and gas programs which is consistent with the termination of the programs in FY 2008 (-$6.2). The reduction in FTEs for program management (indirect activities) is offset by increases in pay and benefits costs which includes: statutory increases, promotions and within-grade increases, performance awards and health benefit costs (+$2.6). Additional funding is provided for research and development and other programmatic (direct) activities by federal employees and their support services (+$6.7).

Clean Coal Technology

Clean Coal Technology (FY 2007 $0 FY 2008 -$58.0) .....-$58.0
FY 2008 budget proposes to transfer $108 million of the $257 million deferral (from 2007) to the FutureGen project and cancel the remaining $149 million of the deferral. Of the $66 million in unobligated balances carried forward at the start of FY 2008, $58 million is transferred to the Clean Coal Power Initiative (CCPI), leaving $8 million in balances for closeout activities.

Strategic Petroleum Reserve

Strategic Petroleum Reserve (FY 2007 $155.4; FY 2008 $331.6) .....+$176.2
Facilities Development and Operations account reflects an increase of $8.1 million which is primarily a result of fully funding the Seaway terminalling contract at Bryan Mound; the scheduled biennial recovery test exercise; and renewal of the non-emergency water service contract at Big Hill. The remaining increase of $168.1 million is provided to meet the requirements of expanding the Strategic Petroleum Reserve to 1.5 billion barrels.

Naval Petroleum Reserve

Naval Petroleum and Oil Shale Reserves (FY 2007 $18.8; FY 2008 $17.3) .....-$1.5
Decrease reflects reduced management costs associated with closeout and sale of former government owned oil production operations.

Northeast Home Heating Oil Reserve

Northeast Home Heating Oil Reserve (FY 2007 $5.0; FY 2008 $5.3).....+$0.3
Increase reflects price adjustments on new commercial storage contracts. Current contracts expire in September 2007.

Nuclear Energy

(discretionary dollars in thousands)

	FY 2006 Current Approp.	FY 2007 Congressional Request	FY 2008 Congressional Request	FY 2008 vs. FY 2007 $	FY 2008 vs. FY 2007 %
Office of Nuclear Energy					
Energy Supply and Conservation					
University reactor infrastructure and education assistance	26,730	——	——	——	——
Research and development	221,068	347,132	567,745	+220,613	+63.6%
Infrastructure	241,030	145,012	157,734	+12,722	+8.8%
Program direction	60,498	67,608	76,224	+8,616	+12.7%
Transfer from state department	17,238	——	——	——	——
Subtotal, Energy Supply and Conservation	566,564	559,752	801,703	+241,951	+43.2%
Funding from other defense activities	-122,634	——	——	——	——
Funding from Naval Reactors	-13,365	——	——	——	——
Total, Energy Supply and Conservation	430,565	559,752	801,703	+241,951	+43.2%
Other Defense Activities					
Infrastructure	91,872	75,949	75,949	——	——
Program direction	30,792	——	——	——	——
Subtotal, Other Defense Activities	122,664	75,949	75,949	——	——
Use of prior year balances and other adjustments	-3,003	-3,003	-3,003	——	——
Total, Other Defense Activities	119,661	72,946	72,946	——	——
Total, Office of Nuclear Energy	**550,226**	**632,698**	**874,649**	**+241,951**	**+38.2%**

The **Office of Nuclear Energy** (NE) is funded in two accounts within the Energy and Water Development Appropriation: Energy Supply and Conservation and Other Defense Activities. All funding for research and development and landlord activities for the Idaho National Laboratory is requested in the Energy Supply and Conservation account. Funding for Safeguards and Security is requested within Other Defense Activities. Within the two accounts, DOE is **requesting** a total of **$874.6 million** for NE activities in **FY 2008**.

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 research 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 applied research in next generation nuclear technologies. The aim of these efforts and those of our industrial and overseas partners is to enable nuclear energy to fulfill its promise as a safe, advanced, cost-effective and environmentally friendly 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 may provide significant improvements in sustainability, economics, safety and reliability, proliferation resistance, and physical protection. Through the **Advanced Fuel Cycle Initiative**, the technology development element of the **Global Nuclear Energy Partnership**, DOE seeks to develop advanced, proliferation resistant nuclear fuel technologies that maximize the energy produced from nuclear fuel while minimizing wastes. The **Global Nuclear Energy Partnership** will further provide for the expansion of nuclear power plants in the United States and around the world, in addition to promoting nuclear nonproliferation goals and helping resolve nuclear waste disposal issues. The **Nuclear Power 2010** program supports technology development and demonstration activities that advance the Presidents' National Energy Policy goals for enhancing long-term U.S. energy independence by expanding the contribution of nuclear power to the nation's energy portfolio. In addition, the

Generation IV Nuclear Energy Systems Initiative establishes a basis for expansive cooperation with our international partners to develop next-generation reactor systems that represent a significant leap in economic performance, safety, and proliferation-resistance. Finally, 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.

PROGRAM HIGHLIGHTS

The FY 2008 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 **Advanced Fuel Cycle Initiative,** the technology development element of the **Global Nuclear Energy Partnership** (GNEP) is requesting $395 million in FY 2008. 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.

Advanced recycling technologies can extract highly radioactive elements of commercial spent nuclear fuel and use that material as fuel in fast spectrum reactors to generate additional electricity. The extracted material, which includes all transuranic elements (e.g., plutonium, neptunium, americium and curium), would be consumed by fast reactors to reduce significantly the quantity of material requiring disposal in a repository and to produce power. With the transuranic materials separated and used for fuel, the volume of waste that would require disposal in a repository would be reduced by 80 percent.

Improving the way spent nuclear fuel is managed will facilitate the expansion of civilian nuclear power in the United States and encourage civilian nuclear power internationally to evolve in a more proliferation-resistant manner. The United States and other countries having the established infrastructure could arrange to supply nuclear fuel to countries seeking the energy benefits of civilian nuclear power, and the spent nuclear fuel could be returned to partner countries for eventual disposal in international repositories. In this way, foreign countries could obtain the benefits of nuclear energy without needing to design, build, and operate uranium enrichment or recycling technologies to process and store the waste.

The **Nuclear Power 2010** program is requesting funding of $114.0 million in FY 2008 to complete the two Early Site Permit demonstration projects and continue the New Nuclear Plant Licensing Demonstration projects that will exercise the untested licensing process to build and operate a new nuclear plant. Design activities will continue in support of the submission of two combined Construction and Operating License applications to the Nuclear Regulatory Commission; development of final designs for two standard nuclear plants; and development of total project cost and schedule needed by industry to initiate purchase of long lead procurement equipment, to request cost recovery through their Public Utility Commissions and to begin loan discussions with financial institutions.

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 2008 budget provides $36.1 million to maintain critical R&D to achieve desired goals of sustainability, economics, and proliferation resistance. This R&D will further investigate the technical and economical challenges of next-generation reactors.

The **Nuclear Hydrogen Initiative** (NHI), with funding of $22.6 million, 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.

The **Radiological Facilities Management** program with funding of $53.0 million, maintains irreplaceable DOE nuclear technology facilities in a safe, secure, environmentally compliant and cost-effective manner to support national priorities, including the provision of radioisotope power systems that can generate electrical power in remote harsh environments for space exploration. This program also supports the medical isotope production infrastructure and research reactor infrastructure.

The **Idaho Facilities Management** program ($104.7) provides Idaho National Laboratory (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.

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.

Program Direction provides the federal staffing resources and associated costs required to provide overall direction and execution of the Department's Nuclear Energy program.

SIGNIFICANT FUNDING CHANGES – FY 2007 to 2008 Request ($ in millions)

Nuclear Power 2010 (FY 2007 $54.0; FY 2008 $114.0) .....+$60.0
Additional funds are requested to maintain scheduled work to continue reactor designs and implement licensing interactions with NRC to support utility decisions to build new nuclear plants by 2009.

Generation IV Nuclear Energy Systems Initiative
(FY 2007 $31.4; FY 2008 $36.1) .....+$4.7
Increase reflects additional R&D activities for nuclear reactor fuel development and for completion of the Energy Policy Act of 2005 mandated Next Generation Nuclear Plant Licensing Strategy.

Nuclear Hydrogen Initiative (FY 2007 $18.7; FY 2008 $22.6) .....+$3.9
Increase reflects additional experiments to determine the feasibility of alternative cycles selected for further development, and to begin design activities for pilot-scale experiments for thermochemical and high-temperature electrolysis production methods.

Advanced Fuel Cycle Initiative (FY 2007 $243.0; FY 2008 $395.0).....+$152.0
Increase reflects enhanced R&D activity to support separations technology development (+$14.0); significant enhancement in systems analysis and advanced computing and simulation (+$59.0); expansion of conceptual design activities for process equipment design and nuclear safety for the Advanced Fuel Cycle Facility (+$10.0); consolidation of all technology development activities supporting the Advanced Fuel Cycle Facility, Advanced Burner Reactor, and Recycling Demonstration projects into the GNEP Technology Development program as well as the initiation of the small reactors initiative

and GNEP related international collaborations with other fuel cycle states (+$65.0); and the continuation of NERI grants (+$4.0).

Radiological Facilities Management (FY 2007 $49.7; FY 2008 $53.0) .....+$3.3
Cumulative change in funding is due to an increase for maintaining and upgrading the Space and Defense Infrastructure (+$4.5); a decrease in the Medical Isotope Infrastructure program including the transfer of responsibility for the Annular Core Research Reactor (ACRR) to NNSA (-$1.8) offset by an increase to maintain the Medical Isotope Infrastructure(+$1.1); and a decrease to reflect the shift in responsibility for the monitoring and maintenance of the DOE leased assets at the Paducah Gaseous Diffusion Plant to the federal staff at the Oak Ridge Operations Office (-$0.5).

Idaho Facilities Management (FY 2007 $95.3; FY 2008 $104.7).....+$9.4
Increase reflects the initiation of necessary recapitalization at the INL to reduce the deferred maintenance backlog to within 5% of RPV at the site (+$30.4); required funding to support mitigation of NE legacy waste (+$4.0); and the transfer of activities previously funded by the Office of Environment, Safety and Health to support the Radiological and Environmental Sciences Laboratory (+$2.5). Increases are offset by decreases due to completion of planned work scope for the Gas Test Loop and Project Engineering and Design activities (-$10.4); and a reduced scope of work for the ATR Life Extension Program (-$17.1).

Program Direction (FY 2007 $67.6; FY 2008 $76.2) .....+$8.6
Increase represents a 2.5-percent escalation in accordance with established guidelines and funds for promotions and within-grade salary increases (+$2.4); funds required to implement the acceleration of the Advanced Fuel Cycle Initiative, including salaries and benefits for an additional 10 FTEs, travel, Working Capital Fund costs and training (+$2.8); and the inclusion of 19 FTEs for the Radiological and Environmental Sciences Laboratory previously funded by the Office of Environment Safety and Health (+$3.4).

Energy Information Administration

(discretionary dollars in thousands)

	FY 2006 Current Approp.	FY 2007 Congressional Request	FY 2008 Congressional Request	FY 2008 vs. FY 2007 $	FY 2008 vs. FY 2007 %
Energy Information Administration					
National Energy Information System	**85,314**	**89,769**	**105,095**	**+15,326**	**+17.1%**

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 2008 program request is $105.1 million, which is a $15.3-million increase over the FY 2007 request of $89.8 million. EIA's base program includes the maintenance of a comprehensive energy database fully supported by a secure data transmission, access, and processing capability; the operation 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 2007 to FY 2008 Request ($ in millions)

Energy Information Administration (FY 2007 $89.8; FY 2008 $105.1).....+$15.3
Increased funding improves EIA's capability to close energy information gaps and address growing energy data quality issues resulting from changes in the petroleum and natural gas industries. Provides additional support for Energy Data Quality Improvements (+$6.0), initiates Ethanol and Biofuels Data Collection (+$2.8), increases International Oil and Gas Markets Data and Analysis (+$1.9), enhances Energy Data Coverage and State Energy Profiles (+$1.8), provides for the U.S. Energy Model Replacement (+$1.2), increases Cybersecurity activities (+$1.3) and provides escalation for the FY 2008 pay raise (+$1.8). These increases are offset by a decrease in space rental due to a space consolidation initiative begun in FY 2007 (-$1.5).

Power Marketing Administrations

(discretionary dollars in thousands)

	FY 2006 Current Approp.	FY 2007 Congressional Request	FY 2008 Congressional Request	FY 2008 vs. FY 2007 $	FY 2008 vs. FY 2007 %
Power Marketing Administrations					
Southeastern Power Administration					
Southeastern power administration	52,742	53,726	68,678	+14,952	+27.8%
Less alternative financing (for PPW)	-14,485	-13,611	-13,802	-191	-1.4%
Offsetting collections	-32,713	-34,392	-48,413	-14,021	-40.8%
Total, Southeastern Power Administration	5,544	5,723	6,463	+740	+12.9%
Southwestern Power Administration					
Southwestern power administration	42,264	45,139	83,492	+38,353	+85.0%
Less alternative financing	-9,400	-10,600	-18,050	-7,450	-70.3%
Offsetting collections	-3,000	-3,000	-35,000	-32,000	-1,066.7%
Total, Southwestern Power Administration	29,864	31,539	30,442	-1,097	-3.5%
Western Area Power Administration					
Western area power administration	572,949	688,511	705,911	+17,400	+2.5%
Offsetting collections (P.L. 108-477/109-103)	-279,000	-274,852	-258,702	+16,150	+5.9%
Offsetting collections (P.L. 98-381)	-4,162	-3,705	-3,937	-232	-6.3%
Total, Western Area Power Administration	231,652	212,213	201,030	-11,183	-5.3%
Falcon and Amistad Operating and Maintenance Fund					
Operation and maintenance	2,665	2,500	2,500	——	——
Colorado River Basins Power Marketing Fund					
Spending authority from offsetting collections	192,281	221,081	232,145	+11,064	+5.0%
Offsetting collections	-192,281	-244,081	-255,145	-11,064	-4.5%
Total, Colorado River Basins	——	-23,000	-23,000	——	——
Total, Power Marketing Administrations	**269,725**	**228,975**	**217,435**	**-11,540**	**-5.0%**

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 and delivers all available federal hydroelectric power from 22 U.S. Army Corps of Engineers (Corps) multipurpose projects to preference customers in an eleven-state area in the southeastern United States. Southeastern does not own or operate any transmission facilities, and 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. The President's budget request for Southwestern provides for maintenance, additions, replacements, and interconnections assuring a clean, affordable 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 56 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 to power 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, and 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 and is repaid with market-determined interest from its revenues.

PROGRAM HIGHLIGHTS

The FY 2008 budgets for Southeastern, Southwestern and Western Area Power Administrations continues the implementation of an initiative to charge interest rates for new power-related capital investments at the rate governmental corporations borrow in the market. This change applies only to PMA investments occurring after September 30, 2006, whose interest rates are not set in law. PMA obligations owed to the Treasury as of September 30, 2006, will retain their existing interest rates. This change is expected to increase total receipts to the U.S. Treasury, beginning in FY 2007, by approximately $2-3 million annually.

Southeastern, Southwestern, and Western Area Power Administrations incur emergency purchase power and wheeling (PPW) costs during periods of severe drought that prevent them from producing hydropower at expected levels. These emergency PPW costs, which are funded through the PMAs Continuing and Emergency Funds, result from the PMAs' need to purchase additional power and wheeling services from outside providers in order to fulfill PMA customer contracts. The Continuing and Emergency Funds are maintained from receipts from the sale and transmission of electric power in the PMAs service areas, and are available to defray expenses necessary to ensure continuity of service. PMAs currently have a variety of policies for recovering these unexpected costs from their ratepayers. Some PMAs recover costs within one year while others take as long as three to five years. Beginning in 2008-2009, the PMAs will move towards implementing policies that recover all future emergency PPW costs funded through the PMA Continuing and Emergency funds from ratepayers within one year from the time costs are incurred.

The PMAs' FY 2008 budgets do not assume reclassification of receipts from mandatory to discretionary for annual operating expenses because there was no agreement between the Administration and Congress to reclassify such receipts. Nevertheless, the Administration supports this reclassification and will continue to pursue Net Zero appropriations for the annual expenses of these PMAs.

The Bonneville Power Administration (Bonneville), unlike the three other PMAs, is "self-financed" by the ratepayers of the Pacific Northwest and receives no direct, annual appropriations from Congress. Under the Federal Columbia River Transmission System Act of 1974, Bonneville funds the expense portion of its budget and repays the federal investment and bonds issued to the Treasury with revenues from electric power and transmission rates. In some recent years, Bonneville has received substantial amounts from net secondary revenue sales – in FY 2006, Bonneville's net secondary market revenues were in excess of $700 million, the highest amount ever. Due to the volatility of energy prices, these net

secondary revenues could be higher or lower depending on a number of factors including hydro variability. It is the Administration's position that it is sound business practice to use a portion of these higher-than-historical net secondary revenues to invest back into energy infrastructure and to pay down debt. The FY 2008 Budget re-proposes an initiative that Bonneville apply net secondary market revenues in excess of $500 million towards the re-payment of its outstanding bond obligations to the Treasury. This proposal reflects an estimate of $646 million during FY 2008 to FY 2012 in advance amortization payments on BPA's bonds and will prolong BPA's Treasury borrowing authority, which is limited to $4.45 billion by Federal law. The Administration encourages a continued ongoing dialogue in the Pacific Northwest to address the manner in which this proposal will improve Bonneville's ability to meet its long-term capital investment needs with minimal rate impact.

SIGNIFICANT FUNDING CHANGES – FY 2007 to FY 2008 Request ($ in millions)

Southeastern Power Administration (FY 2007 $5.7; FY 2008 $6.5) .....+$0.8

Program Direction (FY 2007 $5.7; FY 2008 $6.5) .....+$0.8
Increase reflects the full effect of the FY 2007 pay raise to the base and the partial effect of the FY 2008 pay raise. It also includes 2 additional FTEs for a total of 44 FTEs starting in FY 2008.

Purchase Power and Wheeling (FY 2007 $48.0; FY 2008 $62.2) .....+$14.2
(FY 2007 alternative financing $13.6; use of receipts $34.4; FY 2008 alternative financing $13.8; use of receipts $48.4). FY 2008 request provides for higher pumping energy costs for the Richard B. Russell, Carters and Jim Woodruff projects reflecting increased fuel expenses incurred by utilities that provide pumping energy and increased transmission costs. This funding level will allow Southeastern to purchase and deliver energy to meet limited peaking power contractual obligations. Federal power receipts as well as alternative financing methods, including net billing, bill crediting, and customer advances will be used to fully offset the costs of system support and other contractual services. Customers will provide other resources and/or purchases for the remainder of their firm loads.

Alternative Financing (FY 2007 -$13.6; FY 2008 -$13.8) ..... -$0.2
In FY 2008, alternative financing will be used to offset Purchase Power and wheeling services (-$10.6) to allow Southeastern to continue to meet their annual operation and maintenance requirements and purchase power and wheeling needs.

Southwestern Power Administration (FY 2007 $31.5; FY 2008 $30.4).....-$1.1

Operations and Maintenance (FY 2007 $7.1; FY 2008 $12.0).....+$4.9
Increase reflects funding for the control area boundary projects; communications equipment and related maintenance; installation of substation grounding and drainage; substation equipment replacements, including power circuit breakers, disconnect switches, relays, and a transformer; and the replacement of special purpose vehicles used in the maintenance and repair of the transmission system and facilities.

Program Direction (FY 2007 $20.8; FY 2008 $22.2).....+$1.4
Increase in salaries and benefits reflects wage survey-based, union-negotiated, Administratively determined pay adjustments, and mission related travel to maintain the transmission system. The FY 2008 level of funding allows Southwestern to maintain its current level of 179 FTEs.

Purchase Power and Wheeling (FY 2007 $13.6; FY 2008 $45.0) .....+$31.4
(FY 2007 alternative financing $10.6; use of receipts $3.0; FY 2008 alternative financing $10.0; use of receipts $35.0 (+31.4)). Increase supports Southwestern's anticipated needs to ensure adequate funding to fulfill its 1200-hour peaking power contractual obligations based on volatile market prices, limited availability of energy banks, and all but the most severe hydrological conditions. The amount of alternative financing will offset the costs of purchase power and wheeling, system support and other contractual obligations. When hydro generation is below normal, Southwestern will utilize the Continuing Fund to defray emergency expenses to ensure continuity of electric service.

Construction (FY 2007 $3.6; FY 2008 $4.3)..... +$0.7
Increase supports re-conducting the Idalia-Asherville line which will improve the transmission infrastructure by alleviating power flow constraints and eliminating line overloading.

Alternative Financing (FY 2007 -$10.6; FY 2008 -$18.1) ..... -$7.5
In FY 2008, alternative financing will be used to offset Program Direction (-$877K); Operations and Maintenance (-$6.3); Construction (-$869K and Purchase Power and wheeling (-$10.6) to allow Southwestern to continue to meet their annual operation and maintenance requirements.

Western Area Power Administration (FY 2007 $212.2; FY 2008 $201.0).....-$11.2
FY 2008 Construction, Rehabilitation, Operation, and Maintenance program level is $705.9 (compared to $688.5 in FY 2007) and will be funded by $201.0 in budget authority; and $258.7 in offsetting collections for Purchase Power and Wheeling; $3.9 through a reimbursable agreement with the Bureau of Reclamation using offsetting collections from P.L. 98-381 from the Colorado River Dam Fund; and $242.2 of alternative financing.

Purchase Power and Wheeling (FY 2007 $427.9; FY 2008 $425.3).....-$2.6
(FY 2007 alternative financing $153.1; use of receipts $274.9; FY 2008 alternative financing $166.6; use of receipts $258.7). FY 2008 decrease in purchase power and wheeling reflects an anticipated softening of long-term drought conditions. As a result purchase power requirements have reduced from 8,509 GWhs in FY 2007 to 6,515 GWhs in FY 2008. Offsetting this however, is an increase in average purchase power prices in FY 2008 based on current FY 2006 market conditions. 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 2007 $147.7; FY 2008 $157.3).....+$9.6
Increase reflects the full effect of Western's negotiated FY 2007 pay raise in the base and the partial effect of the FY 2008 pay raise. Increase also reflects additional workscope for Architect and Engineering Services; background investigations and design work on the Market Redesign Technology Upgrade. The FY 2008 funding level also supports an increase in FTEs from 1,060 in FY 2007 to 1,081 in FY 2008.

Construction and Rehabilitation (FY 2007 $60.2; FY 2008 $62.9) .....+$2.7
Increase provides funding to start construction of the 500-kV O'Banion Substation in California to enable Western to support the area transmission needs without compromising reliability and security of the interconnected transmission system. The request continues the rebuild phase of the Cheyenne-Miracle Mile Project, including Ault, Cheyenne, Miracle Mile and Snowy Range Substations.

Operation and Maintenance (FY 2007 $45.7; FY 2008 $53.3).....+$7.6
Increase supports replacements and additions of electrical equipment, such as circuit breakers, transformers, relays, batteries and chargers, reactors, meters, capacitor banks and switches; installation of a Supervisory Control and Data Acquisition system and purchase of a replacement helicopter.

Utah Reclamation Mitigation & Conservation
(FY 2007 $6.9; FY 2008 $7.2) .....+$0.3
FY 2008 request provides for Western's annual transfer of funding to the Utah Reclamation Mitigation and Conservation account from the Construction Rehabilitation, Operations and Maintenance account.

Offsetting Collections (FY 2007 -$278.6; FY 2008 -$262.6) .....+$16.0
In FY 2008, Western will continue to use receipts to fund a portion of Purchase Power and Wheeling program expenses (-$258.7) and use Colorado River Dam Fund receipts (-$3.9) to support Boulder Canyon Project activities.

Alternative Financing (FY 2007 -$197.7; FY 2008 -$242.2).....-$44.5
In FY 2008, alternative financing methods, primarily cash advances from customers, will be used to offset Program Direction (-$15.8); Operation and Maintenance (-$12.0); Construction (-$47.9); Purchase Power and Wheeling (-$166.6) to allow Western to continue to meet their annual operations and maintenance requirements and purchase power and wheeling needs.

Bonneville Power Administration (self financed through revenues)
Budget Obligations (FY 2007 $3,379; FY 2008 $3,223).....-$156.0
No direct annual appropriations are received from Congress. In FY 2008, total requirements of all Bonneville programs include estimated budget obligations of $3,223 million. This amount includes operating expenses of $2,608 million, capital investments of $538 million, and $77 million in projects funded in advance; with $685 million in capital transfers. These investments provide electric utility and general plant requirements 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 Power Services Line which focuses on improving the reliability of the Federal Columbia River Power System (FCRPS) by increasing its generation efficiency through turbine runner replacements and optimization of hydro facility operation, and small capital reimbursements associated with routine activities. Also in FY 2008, Bonneville plans to begin construction of five new fish hatcheries and four restoration and expansion projects as required by Pacific Northwest Electric Power Planning and Conservation Act (Regional Act) that would each have a life expectancy greater than 15 years.

Power Services-Capital (FY 2007 $201.0; FY 2008 $213.0) .....-+$12.0
FY 2008 budget provides for additions, improvements, and replacements of existing U.S. Bureau of Reclamation and U.S. Army Corps of Engineers' hydroelectric projects in the Pacific Northwest to improve power system reliability. In FY 2008, slight increase in associated project costs (+$12.0) due to reallocation of funding requirements based on the need to maintain a minimum level of generation each year.

Transmission Services-Capital (FY 2007 $365.7; FY 2008 355.5) .....-$10.2
FY 2008 funding provides for planning, design and construction of transmission lines, substation, control system additions, replacements, and enhancements to the FCRPS transmission system, including initiation of design and construction of various radio replacements at accessible sites. Decrease in FY 2008 reflects completion of large customer funded projects related to generation, including completion of design and construction of the Static VAR Compensator at Captain Jack.

Innovative Technology Loan Guarantee Program

(discretionary dollars in thousands)

	FY 2006 Current Approp.	FY 2007 Congressional Request	FY 2008 Congressional Request	FY 2008 vs. FY 2007 $	FY 2008 vs. FY 2007 %
Innovative Technology Loan Guarantee Program	**——**	**——**	**8,390**	**+8,390**	**N/A**

The **Office of Loan Guarantees will serve as a central coordinating office for loan guarantee applications submitted to the Department pursuant to the Energy Policy Act of 2005, Title XVII**. Section 1703 of that Act authorizes the DOE to provide loan guarantees for renewable energy systems, advanced nuclear facilities, coal gasification, carbon sequestration, energy efficiency, and many other types of projects. These projects must avoid, reduce, or sequester air pollutants or anthropogenic emissions of greenhouse gases; employ new or significantly improved technologies compared to commercial technologies in service in the United States at the time the guarantee is issued; and offer a reasonable prospect of repayment of the principal and interest on the guaranteed obligation. In the near future, DOE will propose regulations for this program that will be finalized after an opportunity for public review and comment.

PROGRAM DESCRIPTION

The Office of Loan Guarantees will centralize loan guarantee services for DOE to ensure all processes and criteria are applied uniformly in accordance with established requirements, procedures and guidelines. The projects supported by this program will complement and encourage industry efforts to bring more advanced technologies into the marketplace.

PROGRAM HIGHLIGHTS

The budget proposes an FY 2008 loan volume limitation of $9 billion. Of this amount, DOE will seek to guarantee approximately $4 billion in loans for central power generation facilities (for example, nuclear facilities or carbon sequestration optimized coal power plants), $4 billion in loans for projects that promote biofuels and clean transportation fuels; and $1 billion in loans for projects using new technologies for electric transmission facilities or renewable power generation systems.

Because DOE has not yet evaluated the potential subsidy costs for any projects that might be eligible for Title XVII loan guarantees, the FY 2008 budget reflects placeholder estimates for borrower paid loan guarantee subsidy costs, based on an illustrative portfolio. These estimates are not related to any specific project proposals.

SIGNIFICANT FUNDING CHANGES – FY 2007 to 2008 Request ($ in millions)

Program Direction (FY 2007 $0; FY 2008 $8.4).....+$8.4
FY 2008 request provides all personnel related expenses for 8 FTEs needed to establish the Office of Loan Guarantees. DOE requests $8.4 million in funding in FY 2008 to run the office and support personnel and associated costs. To ensure that DOE meets statutory requirements regarding loan guarantee activities, program funding also will support the procurement of outside expertise in areas such as finance and commercial market assessment.

SECTION 2. NUCLEAR SECURITY

(discretionary dollars in thousands)

	FY 2006 Current Approp.	FY 2007 Congressional Request	FY 2008 Congressional Request	FY 2008 vs. FY 2007 $	FY 2008 vs. FY 2007 %
National Nuclear Security Administration:					
Weapons Activities	6,355,297	6,407,889	6,511,312	+103,423	+1.6%
Defense Nuclear Nonproliferation	1,619,179	1,726,213	1,672,646	-53,567	-3.1%
Naval Reactors	781,605	795,133	808,219	+13,086	+1.6%
Office of the Administrator	354,223	386,576	394,656	+8,080	+2.1%
Total, National Nuclear Security Administration	**9,110,304**	**9,315,811**	**9,386,833**	**+71,022**	**+0.8%**

Nuclear Security Strategic Theme: Ensuring America's nuclear security

Goal 2.1 Nuclear Deterrent – Transform the nation's nuclear weapons stockpile and supporting infrastructure to be more responsive to the threats of the 21st Century

Goal 2.2 Weapons of Mass Destruction – Prevent the acquisition of nuclear and radiological materials for use in weapons of mass destruction and in other acts of terrorism

Goal 2.3 Nuclear Propulsion Plants – Provide safe, militarily effective nuclear propulsion plants to the U.S. Navy

Weapons Activities – NNSA

(discretionary dollars in thousands)

	FY 2006 Current Approp.	FY 2007 Congressional Request	FY 2008 Congressional Request	FY 2008 vs. FY 2007 $	FY 2008 vs. FY 2007 %
Weapons Activities					
Directed stockpile work	1,372,327	1,410,268	1,447,236	+36,968	+2.6%
Campaigns	2,123,161	1,937,390	1,866,220	-71,170	-3.7%
Readiness in technical base and facilities	1,654,840	1,685,772	1,662,144	-23,628	-1.4%
Secure transportation asset	209,979	209,264	215,646	+6,382	+3.0%
Nuclear weapons incident response	117,608	135,354	161,748	+26,394	+19.5%
Facilities and infrastructure recapitalization program	149,365	291,218	293,743	+2,525	+0.9%
Environmental projects and operations	——	17,211	17,518	+307	+1.8%
Safeguards and security	797,751	754,412	881,057	+126,645	+16.8%
Subtotal, Weapons Activities	6,425,031	6,440,889	6,545,312	+104,423	+1.6%
Use of prior year balances and other adjustments	-69,734	-33,000	-34,000	-1,000	-3.0%
Total, Weapons Activities	**6,355,297**	**6,407,889**	**6,511,312**	**+103,423**	**+1.6%**

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 programs funded within the Weapons Activities Appropriation also support 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. Four NNSA organizations manage the programs in this appropriation, and federal employees provide direction, management, and oversight of the 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 **Weapons Activities request for FY 2008 is $6.5 billion**, an increase of $103.4 million or 1.6 percent above the FY 2007 request level. The FY 2008 request allows for continued support to meet the needs of the stockpile, stockpile surveillance, annual assessment, and Life Extension Programs. Defense Programs will continue to move ahead with the Reliable Replacement Warhead program to establish the path forward for stockpile transformation. In addition, the Department of Energy has created a plan for a revitalized nuclear weapons complex called "**Complex 2030**." This significantly more agile and responsive complex will allow further reductions in the nuclear stockpile by providing an industrial hedge against geopolitical or technical problems and will reduce security costs by consolidating nuclear materials.

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, 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 FY 2008 request is organized by Life Extension Programs, Stockpile Systems, Reliable Replacement Warhead, Weapons Dismantlement and Disposition, and Stockpile Services. The request 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 on scientific and technical efforts essential for the certification, maintenance and life extension of the stockpile. The program has allowed NNSA to maintain the moratorium on underground testing, and move to "science-based" certification and assessments for stewardship by relying on experiments, modeling, simulation, surveillance and historical underground nuclear testing experience. 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. Almost $1.7 billion is allocated annually to ensure that principal government owned, contractor operated facilities are operational, safe, secure, compliant with regulatory requirements, and able to sustain a defined level of readiness to execute tasks identified in the Campaigns and Directed Stockpile Work.

Secure Transportation Asset provides for the safe, secure movement of nuclear weapons, special nuclear materials, and weapon components between military locations and nuclear complex facilities within the United States. Program direction funds, principally for the courier workforce, 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. It also includes the Render Safe Research and Development Program and provides funds for standup of the National Technical Nuclear Forensics (NTNF) and Stabilization Implementation programs.

Facilities and Infrastructure Recapitalization Program (FIRP) is designed to restore, rebuild, and revitalize the physical infrastructure of the nuclear weapons complex. The FIRP program 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.

The **Environmental Projects and Operations Program** reduces risks to human health and the environment at NNSA sites and adjacent areas, by operating and maintaining environmental cleanup systems installed by the Office of Environmental Management, and performing long-term environmental activities and analyses that assures compliance with federal, state, and local requirements.

Safeguards and Security provides funding for all physical and 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 2008 request continues significant efforts to meet priorities to leverage science and to promote national security. Key focus areas include:

Supporting the scheduled workload for the ongoing B61 and W76 Life Extension Programs. However, on November 30, 2006, the Nuclear Weapons Council (NWC) approved the Reliable Replacement Warhead program as the long-term strategy for maintaining a safe, secure and credible nuclear deterrent. This shift in strategy from a Life Extension Program to a RRW program will require substantial planning and resource realignments between the Departments of Defense and Energy. Pending the final NWC determination, out year funding to support an executable budget will be submitted in a future budget submission.

Supporting a plan for a revitalized nuclear weapons complex called "Complex 2030." This significantly more agile and responsive complex will allow further reductions in the nuclear stockpile by providing an industrial hedge against geopolitical or technical problems and will reduce security costs by consolidating nuclear materials. The FY 2008 President's Budget contains some of the resources required for transformation of the Complex in ongoing base program activities that are already underway and contributing to 2030 objectives. Plans and funding projections for other parts of the effort are still being studied.

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

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

Supporting construction of the National Ignition Facility and the 2010 ignition goal;

Supporting the subcritical experiments schedule;

Providing nuclear emergency response assets in support of homeland security. Establishing a National Technical Nuclear Forensics research and development and operations program, and a Stabilization Implementation program through Render Safe R&D development of first generation equipment;

Renewing and sustaining facilities and infrastructure through a recapitalization program, reducing the deferred maintenance backlog for critical facilities, and achieving facility footprint reduction goals;

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

Continuing to safeguard and secure our nuclear facilities, materials, and information; protection of our employees in a post-9/11 environment; implementing the revised Design Basis Threat in a phased manner at the five NNSA enduring sites; conducting a modest safeguards and security technology application program; and continuing an increased cyber security program with over 15 percent growth to address current and future needs.

SIGNIFICANT FUNDING CHANGES – FY 2007 to FY 2008 Request ($ in millions)

Weapons Activities (FY 2007 $6,407.9; FY 2008 $6,511.3) .....+$103.4
FY 2008 request is 1.6 percent above the FY 2007 request. This funding will provide for planned increases and maintain level funding for all other programs to meet ongoing needs of the stockpile, stockpile surveillance, annual assessment, and Life Extension Programs 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 2007 $1,410.3; FY 2008 $1,447.2) .....+$36.9
FY 2008 request is 2.6 percent above the FY 2007 level and is to ensure that the nuclear warheads and bombs in the U.S. nuclear weapons stockpile are safe, secure, and reliable. The Directed Stockpile Work effort has been coordinated with the Department of Defense.

Life Extension Programs for the B61 and W76 (FY 2007 312.7$; FY 2008 $238.7). FY 2008 request is -$74.0 or 23.7 percent below the FY 2007 level. These Life Extension Programs (LEP) develop solutions to extend the life of the two warheads and correct potential technical issues. The reduction is a result of the W80 LEP being terminated with closeout in FY 2007.

Stockpile Systems (FY 2007 $325.5; FY 2008 $346.7). FY 2008 request is $21.2 or 6.5 percent above the FY 2007 level. The program provides each weapon-type routine maintenance; periodic repair; replacement of limited life components; support for the annual assessment process; resolution and timely closure of significant finding investigations; and surveillance to assure continued safety, security, and reliability. The increase is a result of increased work on the B61, W76, W80, B83, and W88 Stockpile Systems.

Reliable Replacement Warhead (FY 2007 $27.7; FY 2008 $88.8). FY 2008 request is $61.1 or 220.4 percent above the FY 2007 level. The 18-month study approved by the Nuclear Weapons Council (NWC) was completed in November 2006. It identified designs that will sustain long-term confidence in a safe, secure, and reliable stockpile and enable transformation to a responsive nuclear weapons infrastructure. The NWC decided that the Reliable Replacement Warhead (RRW) was feasible for submarine launched ballistic missiles and should proceed to complete a Phase 2A design definition and cost study. The significant increase is a result of the decision to go to this next phase. Once this acquisition planning is completed and if the NWC decides to proceed to engineering and production development, funding will be requested in the outyears (FY2009-FY2012) to support an executable program.

Weapons Dismantlement and Disposition (FY 2007 $75.0; FY 2008 $52.3). FY 2008 request is -$22.7 or 30.3 percent below the FY 2007 level. This program provides for the dismantlement, characterization of components, disposal of retired warhead systems, and surveillance of retired

stockpile systems. The decrease occurred because upfront activities associated with tooling procurement, procedures, Authorization Basis work, hiring of production technicians, and equipment purchases were obligated and/or costed.

Stockpile Services (FY 2007 $669.4; FY 2008 $720.8). FY 2008 request is $51.4 or 7.7 percent above the FY 2007 level. The program supports production activities; research and development; certification; weapon safety and security efforts; stockpile management and technology; and responsive infrastructure. The increase is a result of increased workload associated with the production of components for two simultaneous LEPs and the modernization of the production plant capabilities to achieve more agile manufacturing that is consistent with the complex 2030 goals.

Campaigns (FY 2007 $1,937.4; FY 2008 $1,866.2) .....-$71.2
FY 2008 request is 3.7 percent below the FY 2007 request level.

Science Campaign (FY 2007 $263.8; FY 2008 $273.1). FY 2008 request is $9.3 or 3.5 percent above the FY 2007 level. It develops improved capabilities to assess the safety, reliability, and performance of the nuclear package portion of weapons without further underground testing. It retains readiness to conduct underground nuclear testing if directed by the President and develops essential scientific capabilities and infrastructure. The increase is a result of a shift in High Energy Density experiments from ICF and the incorporation of Z facility experiments and Advanced Radiography objectives into the program.

Engineering Campaign (FY 2007 $160.9; FY 2008 $152.7). FY 2008 request is -$8.2 or 5.1 percent below the FY 2007 level. It develops capabilities to assess and improve the safety, reliability, and performance of the non-nuclear and nuclear explosive package engineering components in nuclear weapons without further underground testing. The decrease is a result of the completion of some analysis for the W76 LEP and reduction of work on the W80 LEP, offset by increases in the MESA construction project.

Inertial Confinement Fusion Ignition and High Yield Campaign (FY 2007 $451.2; FY 2008 $412.3). FY 2008 request is -$38.9 or 8.6 percent below the FY 2007 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. 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. Funding for National Ignition Facility (NIF) construction (FY 2007 $111.4; FY 2008 $10.1), a decrease of $101.3 million, is consistent with the approved project baseline. High-Energy Petawatt Laser Development (FY 2007 $2.2; FY 2008 $0) is phased out as the construction of the OMEGA Extended Performance (OMEGA EP) laser project is completed. The decrease is a result of the NIF reduction offset by an increase in program effort required to support the execution of the first ignition experiments in FY 2010.

Advanced Simulation and Computing Campaign (FY 2007 $618.0; FY 2008 $585.7). FY 2008 request is -$32.3 or 5.2 percent below the FY 2007 level. It provides leading edge, high end simulation capabilities to meet weapons assessment and certification requirements, including weapon

codes, weapons science, platforms, and computer facilities. As part of Complex 2030, the program will move toward a computing complex that maintains capability computing at a single site and reduces the footprint of weapons program computing to two sites tied together with a common user environment. The decrease reflects the initiation of computing consolidation for the weapons complex.

Pit Manufacturing and Certification Campaign (FY 2007 $237.6; FY 2008 $281.2). FY 2008 request is $43.6 or 18.4 percent above the FY 2007 level. The campaign has focused on the manufacturing and certification of W88 pits. In addition, the Pit Manufacturing Capability subprogram is working to establish the capability to manufacture replacement pits other than the W88 pit and to improve manufacturing processes used to manufacture pits. This program will also be responsible for the Consolidated Plutonium Center project. The increase is a result of accelerated development of pit technology to support legacy pit types or RRW pit manufacture and Other Project Costs for the Consolidated Plutonium Center project that is a part of ongoing base program activities.

Readiness Campaign (FY 2007 206.0$; FY 2008 $161.2). FY 2008 request is -$44.8 or 21.7 percent below the FY 2007 level. This program has the responsibility for developing or reestablishing new manufacturing processes and technologies for qualifying weapon components for reuse. The decrease is a result of completion of start-up operations at the Tritium Extraction Facility and a reduction in the Advanced Design and Production Technologies (ADAPT) program.

Readiness in Technical Base and Facilities
(FY 2007 $1,685.8; FY 2008 $1,662.1) ..... -$23.7
FY 2008 request is 1.4 percent below the FY 2007 level and is comprised of Operations and Maintenance activities and Construction projects.

Operations of Facilities (FY 2007 $1,203.8; FY 2008 $1,159.3). FY 2008 request is -$44.5 or 3.7 percent below the FY 2007 level. It provides decreased funds below FY 2007 for the operation, physical infrastructure, and on-going maintenance of facilities for activities conducted in the Campaigns and Directed Stockpile Work. Approximately $270 is requested for the Los Alamos National Laboratory (-11%), $189 for the Y-12 complex (--1%), $157 for the Sandia National Laboratory (-4%), $96 for the Kansas City Plant (-2%), $81 for the Lawrence Livermore National Laboratory (-4%), $95 for the Pantex Plant (-1%), $97 for the Savannah River Site (-3%), $66 for the Nevada Test Site (-3%), and $107 for Institutional Site Support (+27%).

Program Readiness (FY 2007 $75.2; FY 2008 $71.5). FY 2008 request is -$3.7 or 4.9 percent below the FY 2007 level. It includes selected activities that support more than one NNSA facility, Campaign or Directed Stockpile Work activity including manufacturing process capabilities required to support the stockpile; and critical skill needs. Nevada Test Site (NTS) 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. Decreases from FY 2007 reflect a reduced level of activity at some sites.

Material Recycle and Recovery (FY 2007 $70.0; FY 2008 $70.0). FY 2008 request is the same as the FY 2007 level. It 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.

Containers (FY 2007 $20.1; FY 2008 $19.2). FY 2008 request is -$0.9 or 4.7 percent below the FY 2007 level. It includes research, development, design, certification, testing and evaluation for shipping containers not directly associated with the life extension programs in DSW. The decrease is a result of the final TA-18 Early Move shipments being scheduled for early FY2008.

Storage (FY 2007 $35.3; FY 2008 $35.1). FY 2008 request is -$0.2 or 0.4 percent below the FY 2007 level. It provides for storage of surplus pits, highly enriched uranium, and other weapons and nuclear materials in compliance with DOE/NNSA requirements.

Construction (FY 2007 $281.4; FY 2008 $307.1). FY 2008 request is $25.7 or 9.1 percent above the FY 2007 level. It supports line item project construction and project engineering design activities from FY 2001-2008. Funding provides for continuation of all ongoing projects. In the request there are three new line item construction projects, the High Pressure Fire Loop ($7.0) and the High Explosive Pressing Facility ($25.3) at Pantex and the TA-55 Reinvestment Project ($6.0) at LANL.

Secure Transportation Asset (FY 2007 $209.3; FY 2008 $215.6) $6.3
FY 2008 request is 3.0 percent above the FY 2007 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. The increase is for salaries and benefits for additional personnel. STA staffing increases from 653 to 669 FTEs.

Nuclear Weapons Incident Response (FY 2007 $135.4; FY 2008 $161.7) ....+$26.3
FY 2008 request is 19.5 percent above FY 2007. 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 2007 $93.6; FY 2008 $92.8), which responds to nuclear terrorist threats. The increase is for two new programs, **National Technical Nuclear Forensics** ($12.0), which is a HSC/NSC sponsored policy initiative to enable support for pre-detonation and post-detonation nuclear forensics, and **Stabilization Implementation** ($16.0), which will develop Render Safe technologies to be used by teams to isolate and stabilize a nuclear device until the national response teams arrive.

Facilities and Infrastructure Recapitalization
(FY 2007 $291.2; FY 2008 $293.7) .....+$2.5
FY 2008 request is 0.9 percent above FY 2007 and provides for recapitalization, facility disposition, and infrastructure planning of the nuclear weapons complex. The increase is for additional construction funding offset by reduced recapitalization and infrastructure planning. In FY 2008 there are two new line item construction projects, the Mercury Highway at the Nevada Test Site ($7.8) and the Potable Water System at Y-12 ($22.5).

Environmental Projects and Operations
(FY 2007 $17.2; FY 2008 $17.5).....+$0.3
FY 2008 request is 1.8 percent above FY 2007. The increase is needed to fund compliance oversight activities associated with requirements of the Consent Judgment at the Kansas City Plant (KCP).

Safeguards and Security (FY 2007 $721.4; FY 2008 $847.1).....+$125.7
FY 2008 request is 17.4 percent above FY 2007. (This is a net safeguards and security estimate reflecting adjustment for security charge for reimbursable work.) NNSA employs a comprehensive and robust security posture designed to protect national security assets at NNSA sites and facilities. In FY 2007, separate control levels were requested for Defense Nuclear Security and Cyber Security. Defense Nuclear Security funding of $744.8 is an increase of $112.1 or 17.7 percent above the FY 2007 levels. Funding supports the hiring and training of protective force personnel; physical security system upgrades; materials control and accountability; application of emerging technologies; and heightened physical security levels at NNSA sites. The increase is a result of additional protective forces and training, upgrades to existing physical security systems to meet the 2005 DBT, and the start of one line item construction project, the Nuclear Materials Safeguards and Security Upgrades Project, Phase II ($49.5) at LANL. Cyber Security funding of $102.2 is an increase of $13.5 or 15.3 percent above FY 2007 levels. Funding sustains NNSA's information infrastructure and upgrades elements to counter cyber threats from external and internal attacks using the latest available technology. The increase is for additional infrastructure at landlord sites and ongoing classified diskless workstation conversion activities.

Defense Nuclear Nonproliferation – NNSA

	FY 2006 Current Approp.	FY 2007 Congressional Request	FY 2008 Congressional Request	FY 2008 vs. FY 2007 $	FY 2008 vs. FY 2007 %
Defense Nuclear Nonproliferation					
Nonproliferation and verification R&D	312,658	268,887	265,252	-3,635	-1.4%
Nonproliferation and international security	74,250	127,411	124,870	-2,541	-2.0%
International nuclear materials protection and cooperation	422,730	413,182	371,771	-41,411	-10.0%
Global initiatives for proliferation prevention	39,600	——	——	——	——
HEU transparency implementation	19,288	——	——	——	——
Elimination of weapons-grade plutonium production program	187,100	206,654	181,593	-25,061	-12.1%
Fissile materials disposition	468,773	637,956	609,534	-28,422	-4.5%
Global threat reduction initiative	96,995	106,818	119,626	+12,808	+12.0%
Subtotal, Defense Nuclear Nonproliferation	1,621,394	1,760,908	1,672,646	-88,262	-5.0%
Use of prior year balances and other adjustments	-2,215	-34,695	——	+34,695	+100.0%
Total, Defense Nuclear Nonproliferation	**1,619,179**	**1,726,213**	**1,672,646**	**-53,567**	**-3.1%**

PROGRAM DESCRIPTION

NNSA's **Defense Nuclear Nonproliferation** (NN) appropriation provides funding for six 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 technologies that 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. The total **request** for the program in **FY 2008** is **$1.67 billion**, and work will be done in the following major areas.

Nonproliferation and Verification Research and Development supports research, development, testing, and evaluation programs leading to prototype demonstrations and detection systems that strengthen the U.S. response to threats to national security and world peace posed by the proliferation of nuclear weapons and the 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 nonproliferation regime by limiting sensitive exports, supporting international safeguards, partnering with foreign governments to implement proliferation control measures, monitoring nuclear reductions, improving international emergency management practices, and providing policy and technical analysis that advances U.S. nonproliferation initiatives and interests. In FY 2008, this line incorporates work to redirect Russian and other former weapons scientists to non-military research and commercial ventures, and monitors the conversion of highly enriched uranium (HEU) from Russia's military program to low enriched uranium purchased under the 1993 U.S./Russian Highly Enriched Uranium (HEU) Purchase Agreement. These transparency measures were formerly a part of the HEU Transparency Implementation program.

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, major international seaports, and Megaports to prevent and detect the illicit transfer of nuclear material.

Elimination of Weapons-Grade Plutonium Production assists the Russian Federation to cease its production of weapons-grade plutonium by replacing plutonium-producing nuclear power reactors with fossil-fueled power plants to provide alternative supplies of heat and electricity and facilitate shutdown of the current 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 facilities in the U.S. that will dispose of surplus plutonium by making it into mixed oxide (MOX) fuel to be burned in commercial plants. Disposing of U.S. surplus fissile material will also help 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 the removal of surplus plutonium brought to the Savannah River Site for disposition.

The **Global Threat Reduction Initiative** mission is to reduce and protect vulnerable nuclear and radiological materials located at civilian sites worldwide. The program works to minimize the use of HEU in civilian 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 United States, respectively; addresses the removal of vulnerable material worldwide, including material 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; identifies, recovers, and stores, on an interim-basis, certain domestic radioactive sealed sources, and other radiological materials that pose a security risk to the United State and/or world community; and reduces the international threat by securing radiological materials that could be used in a radiological dispersal device (RDD) or "dirty bomb."

PROGRAM HIGHLIGHTS

The FY 2008 request includes $609.5 million for Fissile Materials Disposition, the level required for the construction and operation of facilities to dispose of surplus weapon-grade plutonium and highly enriched uranium in the United States and to support Administration efforts for plutonium disposition in Russia. Nonproliferation and Verification R&D continues ongoing activities to provide unique and critical basic and applied research in radiation detection to supply operational tools for government-wide nonproliferation, counter-proliferation and counter-terrorism objectives.

MPC&A completed security upgrades for Russian Navy nuclear fuel and weapons storage at the end of FY 2006 and will complete security upgrades for Rosatom facilities by the end of 2008, both two years ahead of schedule. Security upgrades to protect the nuclear warhead storage sites of the Russian Strategic Rocket Forces and the Russian Ministry of Defense's 12th Main Directorate will be complete by the end of 2008. The Megaports program, within MPC&A, will initiate the installation of Radiation Detection equipment in the Port of Hong Kong.

The Global Threat Reduction Initiative (GTRI) was put into place to address the global nature of the threat and to focus resources on high value, near term risk reduction activities. GTRI was specifically highlighted in the President's March 2006 National Security Strategy of the United States of America and is an important element of the Global Initiative to Combat Nuclear Terrorism. GTRI is serving to implement part of the Bratislava Summit Statement on Nuclear Security Cooperation between the United States and the Russian Federation. In accordance with this agreement GTRI developed

and is implementing an aggressive, prioritized work schedule to complete all shipments of Russian origin spent HEU fuel stored outside reactor cores by the end of 2010.

The FY 2008 budget includes $293 million for activities identified at the Bratislava summit including security upgrades at Russian nuclear warhead sites.

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 2008 funding will enable NNSA to maintain a schedule that allows completion of the Zheleznogorsk project in 2010.

On February 6, 2006, the Secretary announced a comprehensive strategy to promote the global expansion of nuclear energy. The Global Nuclear Energy Partnership (GNEP) will focus on nuclear fuel cycle technologies that reduce waste and improve efficiency, enhancing safeguards and security to reduce proliferation risks, and the development of international arrangements for reliable supply and management of nuclear fuel. NN is using ongoing activities within Nonproliferation and International Security during FY 2007 in the areas of safeguards technology development, international safeguards cooperation, and fuel supply arrangements to support GNEP goals, and the FY 2008 request provides additional funding to support the policy aims embodied in this program.

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 countries have pledged $20 billion over 10 years to support cooperative efforts 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 proliferation 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 2008 request provides $537 million toward the total U.S. commitment to the Global Partnership.

SIGNIFICANT FUNDING CHANGES – FY 2007 to 2008 Request ($ in millions)

Defense Nuclear Nonproliferation (FY 2007 $1,726.2; FY 2008 $1,672.6).....-$53.6
FY 2008 request is $53.6 million or 3.1% below the FY 2007 request.

Nonproliferation and Verification R&D (FY 2007 $268.9; FY 2008 $265.3).....-$3.6
FY 2008 request continues efforts in Proliferation Detection, Nuclear Explosion Monitoring, and Supporting Activities.

Proliferation Detection (FY 2007 $148.2; FY 2008 $147.1).....-$1.1
The net decrease reflects organizational transfer of funds to complete higher priority programmatic projects.

Nuclear Explosion Monitoring (FY 2007 $106.6; FY 2008 $112.7).....+$6.1
Increase primarily reflects the need to accelerate satellite instrumentation production to meet the platform launch schedule.

Supporting Activities (FY 2007 $6.2; FY 2008 $5.5).....-$0.7
Slight decrease is due reduction of funding to Small Business Innovative Research due to efficiency gains in the process.

300 Area Replacement Research Facility (FY 2007 $7.9; FY 2008 $0).....-$7.9
Decrease reflects sufficiency of prior funding in view of the current schedule.

Nonproliferation and International Security (FY 2007 127.4; FY 2008 $124.9).....-$2.5
FY 2008 request includes:

Dismantlement and Transparency (FY 2007 $39.0; FY 2008 $38.1) .....-$0.9
Decrease is a result of additional programmatic efficiencies found in the implementation of U.S. monitoring rights under the HEU Purchase Agreement and a reduction in funds for the Warhead and Fissile Material Transparency program due to the realignment of policy and implementation functions into one office, and because the program is now in the second decade of its 20-year life span. The required monitoring equipment for three Russian facilities has been developed, purchased and installed; and the costs to sustain the operation of that equipment are less than the costs for first decade of the program.

Global Security Engagement and Cooperation
(FY 2007 $50.2; FY 2008 $41.3).....-$8.9
Decrease results from the elimination of funding for the Nuclear Cities Initiative, and the shift of GSEC policy support to treaties and agreements.

International Regimes and Agreements (FY 2007 $31.8; FY 2008 $36.3).....+$4.5
Increase in funds is to provide safeguards support to the GNEP demonstration facility design teams; develop and demonstrate international safeguards systems concepts, technologies, and tools ; conduct proliferation risk reduction assessments; coordinate development of international fuel service arrangements; lead interagency outreach regarding regulatory issues; and initiate and support bilateral and multilateral partnerships.

Treaties and Agreements (FY 2007 $2.0; FY 2008 $4.2) .....+$2.2
Increase reflects the completion of the realignment of the GSEC Security Engagement/ Regional Security portfolio shifting policy support activities to treaties and agreements. This consolidates analytical support activities under the policy director, and also funding support to non-governmental organizations and academic institutions to carry out open-source analysis and Track II engagement, which were formerly a part of GSEC.

International Emergency Management and Cooperation
(FY 2007 $4.4; FY 2008 $5.0) .....+$0.6
Increase will ensure that the IEMC program will continue to address the most serious emergency management concerns in the priority countries of China, India and Pakistan while continuing and completing ongoing emergency management projects with the IAEA, Brazil, Argentina, Armenia and Georgia. IEMC's base program will continue to ensure its mission of reducing the risk of international nuclear and radiological events by strengthening emergency preparedness and response capabilities worldwide.

International Nuclear Materials Protection and Cooperation
(FY 2007 $413.2; FY 2008 $371.8) .....-$41.4

Navy Complex (FY 2007 $17.3; FY 2008 $13.4).....-$3.9
Decrease reflects phased transition of site sustainability support to the Russian Federation.

Strategic Rocket Forces (FY 2007 $129.2; FY 2009 $91.4).....-$37.8
Decrease due to the completion of comprehensive MPC&A upgrades to 5 SRF sites in FY 2007.

Rosatom Weapons Complex (FY 2007 $56.5; FY 2008 $60.1).....+$3.6
Increase due to additional sustainability requirements for sites transitioning to the full sustainability phase (Mayak, Tomsk-7, Arzamas-16 and Chelyabinsk-70). MPC&A upgrades at Arzamas -16, Chelyabinsk-70 and MayakTomsk-7. This increase will also fund selected nuclear material transportation upgrades for sites under this office.

Civilian Nuclear Sites (FY 2007 $21.2; FY 2008 $22.2).....+$1.0
Increase due to additional sustainability requirements to sites with completed MPC&A upgrades.

Material Consolidation and Conversion (FY 2007 $16.8; FY 2008 $19.7).....+$2.9
Increase due to a higher projected availability of excess HEU to be downblended to LEU.

National Programs and Sustainability (FY 2007 $48.1; FY 2008 $45.6).....-$2.5
Decrease due to the phased transition of the responsibility for personnel training and technical support for sustaining upgraded MPC&A systems at Russian Navy and Rosatom facilities to the Russian Federation.

Second Line of Defense (SLD) (FY 2007 $124.0, FY 2008 $119.3) .....-$4.7
SLD, includes the **Megaports Program** (FY 2007 $40.1, FY 2008 $46.8). Decrease in the Core program is due to the acceleration of installations of radiation detection equipment at sites in Caucuses region during FY 2007, offset by an increase in the Megaports program due to the initiation of installation at the Port of Hong Kong.

Elimination of Weapons-Grade Plutonium Production
(FY 2007 $206.7; FY 2008 $181.6) .....-$25.1
Decrease reflects reduced construction and refurbishment activities at Seversk as project approaches its December 2008 completion date offset by increased funding for Zheleznogorsk to meet a FY 2011 completion date for plutonium production reactor shutdown.

Fissile Materials Disposition (FY 2007 $638.0; FY 2008 $609.5) .....-$28.5
Funding allocated to construction activities for U.S. plutonium disposition via conversion to mixed oxide fuel for consumption in commercial reactors; and to the U.S. uranium disposition program.

U.S. Surplus Fissile Materials Disposition
(FY 2007 $603.3; FY 2008 $609.5) .....+$6.2
Overall increase reflects increases in O&M and in construction activities to reflect the peak construction year for the MOX Fuel Fabrication Facility, as follows:

Operation and Maintenance (FY 2007 $235.1; FY 2008 $215.7) .....-$19.4
Decrease for U.S. Uranium Disposition (FY 2007 $86.9; FY 2008 $66.8) reflects the completion of packaging, sampling and handling activities associated with the 17 MT under the Reliable Fuel Supply project; and funding realignment within MOX project slightly offset by additional support for the Waste Solidification Building design effort.

Construction (FY 2007 $368.2; FY 2008 $393.8) .....+$25.6
Increased funding for the U.S. MOX Fuel Fabrication Facility (FFF) (FY 2007 $289.5; FY 2008 $333.8) at the Savannah River Site, South Carolina supports additional procurement of equipment for the construction of the MOX Facility and preparing to award construction contracts for support buildings late in FY 2008. Decreased funding for the Pit Disassembly and Conversion Facility (PDCF) (FY 2007 $78.7; FY 2008 $60.0) reflects the

elimination of the PDCF training module because it was not a cost-effective risk mitigation approach.

Russian Plutonium Disposition (FY 2007 $34.7; FY 2008 $0).....-$34.7
Decrease reflects the use of prior-year balances to continue planned activities.

Global Threat Reduction Initiative (FY 2007 $106.8; FY 2008 $119.6).....+$12.8
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
(FY 2007 $32.2; FY 2008 $31.2).....-$0.9
Net decrease reflects completion of tests of new higher density LEU fuel in FY 2007 and start of longer time scale post-irradiation examinations.

Russian Research Reactor Fuel Return
(FY 2007 $30.0; FY 2008 $31.0).....+$1.0
Increase reflects the estimated cost of returning Russian-origin HEU spent fuel from five countries.

Kazakhstan Spent Fuel (FY 2007 $3.9; FY 2008 $31.7).....+$27.8
Increase reflects serial production and delivery of 27 100-ton metal-concrete dual-use casks (versus 10 in FY 2007) for transportation and long-term storage of 10,000 kg of HEU and 3,000 kg of plutonium in Kazakhstan. These additional funds are needed in order to meet the USG commitment to transport the BN-350 fuel to Baikal-1 by 2010.

U.S. Foreign Research Reactor Spent Nuclear Fuel
(FY 2007 $6.3; FY 2008 $4.2) .....-$2.1
Decrease reflects a cost savings initiative, which combines shipments of materials from other-than-high-income economy countries and high-income economy countries, to achieve an overall reduced shipping cost.

U.S. Radiological Threat Reduction (FY 2007 $9.4; FY 2008 $13.2).....+$3.8
Increase reflects the removal of 2,250 excess sources versus 1,578 excess sources in FY 2007 (an increase of 672). The funding increase also reflects the return of greater numbers of U.S.-origin sources from overseas, which have a higher transportation unit cost than domestic returns.

International Radiological Threat Reduction
(FY 2007 $18.3; FY 2008 $6.0) .....-$12.3
Decrease in favor of higher priority nuclear material recovery activities.

Emerging Threats (FY 2007 $5.7; FY 2008 $1.7).....-$4.0
Decrease reflects completion of major emerging threat technologies in FY 2007 that included development of a mobile plutonium facility and a mobile uranium processing facility for rapidly dispositioning nuclear materials in countries of concern.

Global Reactor Security (FY 2007 $1.0; FY 2008 $0.5).....-$0.5
Decrease reflects that one site, versus two in the previous year, will be upgraded.

Use of Prior-Year Balances/Appropriations (FY 2007 -$34.7; FY 2008 $0) $34.7
Increase reflects the use of prior-year balances in FY 2007 to continue planned activities.

Office of the Administrator – NNSA

(discretionary dollars in thousands)

	FY 2006 Current Approp.	FY 2007 Congressional Request	FY 2008 Congressional Request	FY 2008 vs. FY 2007 $	FY 2008 vs. FY 2007 %
Office of the Administrator					
Office of the administrator	361,119	386,576	394,656	+8,080	+2.1%
Use of prior year balances	-6,896	____	____	____	____
Total, Office of the Administrator	**354,223**	**386,576**	**394,656**	**+8,080**	**+2.1%**

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 and Secure Transportation Asset programs retain separately funded program direction accounts.

The organizational structure implemented in FY 2006 relies on eight site offices reporting directly to the Deputy Administrator for Defense Programs. 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. Total **FY 2008 request** for this program is **$394.7 million**.

PROGRAM HIGHLIGHTS

The NNSA supports the **President's Management Agenda** by creating a more robust and effective NNSA organization through improved human capital and financial management. The FY 2008 request reflects: applying advanced science and nuclear technology to the nation's defense; maintaining and enhancing the safety, security and reliability of the U.S. nuclear weapons stockpile; providing technical leadership to limit or prevent the spread of materials, technology, and expertise relating to weapons of mass destruction.

SIGNIFICANT FUNDING CHANGES – FY 2007 to 2008 Request ($ in millions)

Office of the Administrator (FY 2007 $386.6; FY 2008 $394.7) .....+$8.1
Increase reflects salary increases for inflation and achievement of the FY 2008 target of 1,949 FTEs. Beginning in FY 2008, funding is included for activities previously funded by the former Office of Environment, Safety, and Health and the former Office of Security and Safety Performance Assurance that transferred to the National Nuclear Security Administration (FY 2007 $0; FY 2008 +$2.3).

Naval Reactors

(discretionary dollars in thousands)

	FY 2006 Current Approp.	FY 2007 Congressional Request	FY 2008 Congressional Request	FY 2008 vs. FY 2007 $	FY 2008 vs. FY 2007 %
Naval Reactors					
Naval reactors development	751,608	763,948	775,519	+11,571	+1.5%
Program direction	29,997	31,185	32,700	+1,515	+4.9%
Total, Naval Reactors	**781,605**	**795,133**	**808,219**	**+13,086**	**+1.6%**

PROGRAM DESCRIPTION

The **Naval Reactors** (NR) program has responsibility for all naval nuclear propulsion work, beginning with reactor technology development, continuing through design, construction, testing, operation, maintenance, and ultimately, reactor plant disposal. The total **request** for the program in **FY 2008** is **$808.2 million**.

The program's efforts ensure the safe and reliable operation of reactor plants in 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. Recent and ongoing work 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 2008 request provides $808.2 million for Naval Reactors; an increase of $13.1 million above the FY 2007 request level. Funding supports continuing efforts to ensure the safety and reliability of the 104 operating naval reactor plants, upgrade and improve existing reactor plants, and develop new reactor plants for the VIRGINIA-class submarine and CVN 21-class aircraft carrier programs.

SIGNIFICANT FUNDING CHANGES – FY 2007 to 2008 Request ($ in millions)

Naval Reactors Development (FY 2007 $795.1; FY 2008 $808.2).....+$13.1
Increase in Operations and Maintenance and overall increase in construction funding, as follows:

Operations and Maintenance (FY 2007 $761.2; FY 2008 $765.5) .....+$4.3
Increases in Reactor Technology, Evaluation and Servicing, and Facility Operations are partially offset by a decrease in Plant Technology, Materials Development and Verification, and ATR Operations and Test Support, as follows:

Plant Technology (FY 2007 $130.5; FY 2008 $115.0) .....-$15.5
Decrease due to completion of construction of the S6W Composite Tests facility for Type 2 Generic I&C equipment and completion of both S6G and A1B Generic I&C display effort.

Reactor Technology and Analysis (FY 2007 $212.1; FY 2008 $217.9) ..+$5.8
Increase to begin Reactor System Protection Analysis support for the Next Generation Reactor Core using lower-enriched fuel and commence design and procure tooling for A1B Control Drive Mechanism Power Unit Assembly procedure development.

Evaluation and Servicing (FY 2007 $179.3; FY 2008 $203.8) ..... +$24.5
Increase to initiate South End processing of fuel returns from Idaho Nuclear Technology and Engineering Center, finalize M-290 shipping container design efforts, and commence preparations for the S8G prototype Selected Restricted Availability and combined S8G/MARF prototype Engineered Safety Fill System shutdown.

Materials Development and Verification
(FY 2007 $117.7; FY 2008 $109.9).....-$7.8
Decrease due to completion of both D1G expended core exams and destructive examinations of components from USS OHIO and USS MICHIGAN.

Advance Test Reactor (ATR) Operations and Test Support
(FY 2007 $64.6; FY 2008 $58.8).....-$5.8
Returns ATR funding to established baseline. An agreement was made with Nuclear Energy to provide a one-time increase in FY 2007 to fund an emergent shortfall in ATR Operations.

Facility Operations (FY 2007 $57.0; FY 2008 $60.1).....+$3.1
Increase in general plant project requirements.

Construction (FY 2007 $2.8; FY 2008 $10.0).....+$7.2
Increase supports completion of Materials Research and Technology Complex design at the Bettis Atomic Power Laboratory (+$0.5); design and construction of the Shipping & Receiving and Warehouse Complex at the Bettis Atomic Power Laboratory (+$3.2); and project engineering and design for future projects (+$0.6).

Program Direction (FY 2007 $31.2; FY 2008 $32.7).....+$1.5
Increase reflects salary increases for inflation and achievement of the FY 2008 target of 207 FTEs, and increased travel requirements for the management and oversight of the NR program.

SECTION 3. SCIENTIFIC DISCOVERY AND INNOVATION

(discretionary dollars in thousands)

	FY 2006 Current Approp.	FY 2007 Congressional Request	FY 2008 Congressional Request	FY 2008 vs. FY 2007 $	FY 2008 vs. FY 2007 %
Science	**3,632,044**	**4,101,710**	**4,397,876**	**+296,166**	**+7.2%**

Scientific Discovery and Innovation Strategic Theme: Strengthening U.S. scientific discovery, economic competitiveness, and improving quality of life through innovations in science and technology

Goal 3.1 Scientific Breakthroughs – Achieve the major scientific discoveries that will drive U.S. competitiveness; inspire America; and revolutionize approaches to the nation's energy, national security, and environmental quality challenges

Goal 3.2 Foundations of Science – Deliver the scientific facilities, train the next generation of scientists and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy

Goal 3.3 Research Integration – Integrate basic and applied research to accelerate innovation and to create transformational solutions for energy and other U.S. needs

Science

(discretionary dollars in thousands)

	FY 2006 Current Approp.	FY 2007 Congressional Request	FY 2008 Congressional Request	FY 2008 vs. FY 2007 $	FY 2008 vs. FY 2007 %
Science					
High energy physics	698,238	775,099	782,238	+7,139	+0.9%
Nuclear physics	357,756	454,060	471,319	+17,259	+3.8%
Biological and environmental research	564,077	510,263	531,897	+21,634	+4.2%
Basic energy sciences	1,110,148	1,420,980	1,498,497	+77,517	+5.5%
Advanced scientific computing research	228,382	318,654	340,198	+21,544	+6.8%
Science laboratories infrastructure	41,684	50,888	78,956	+28,068	+55.2%
Fusion energy sciences program	280,683	318,950	427,850	+108,900	+34.1%
Safeguards and security	73,630	76,592	76,592	——	——
Science program direction	159,118	170,877	184,934	+14,057	+8.2%
Workforce development for teachers and scientists	7,120	10,952	11,000	+48	+0.4%
Small business innovation research (SBIR)	116,813	——	——	——	——
Subtotal, Science	3,637,649	4,107,315	4,403,481	+296,166	+7.2%
Use of prior year balances and other adjustments	-5,605	-5,605	-5,605	——	——
Total, Science	**3,632,044**	**4,101,710**	**4,397,876**	**+296,166**	**+7.2%**

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 a primary sponsor 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 in addressing 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, development, and use; fundamental science that supports the foundations for new energy technologies and environmental mitigation; a knowledge base for fusion as a potential future energy source; and advanced computational and networking tools critical to research. Science participates in a number of the Administration's ongoing research and development priorities, including hydrogen, biofuels, fusion energy, nanoscale science, information technology, and the climate change science program. The Science program, along with the National Science Foundation and National Institute of Standards and Technology, continue to play a critical role in the President's American Competitiveness Initiative begun in FY 2007. The total budget request is **$4,398 million** in **FY 2008**.

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. Additionally, Science activities support the **President's Management Agenda** by using the research and development investment criteria in evaluating and managing its basic research portfolio.

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 most basic constituents of matter and energy and exploring the nature of space and time, and probing the forces that bind them together. The research program is primarily carried out at three major scientific user facilities: the **Tevatron Collider** and the **Neutrinos at the Main**

Injector (NuMI) at **Fermi National Accelerator Laboratory** (Fermilab) in Illinois, and the **B-Factory** at Stanford Linear Accelerator Center (SLAC) in California. HEP is an international partner in the **Large Hadron Collider** (LHC) in Switzerland. Support is also provided for research and design of a potential **International Linear Collider** (ILC). It also funds non-accelerator physics to investigate dark energy and dark matter, 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 **Continuous Electron Beam Accelerator Facility** (CEBAF) at Thomas Jefferson National Accelerator Facility (TJNAF) in Virginia, and the **Relativistic Heavy Ion Collider** (RHIC) at Brookhaven National Laboratory (BNL) in New York; and two smaller user facilities, the **Holifield Radioactive Ion Beam Facility** (HRIBF) at Oak Ridge National Laboratory (ORNL) in Tennessee and the **Argonne Tandem Linac Accelerator System** (ATLAS) at Argonne National Laboratory (ANL) in Illinois. It also supports several other laboratory and university facilities, and a program of non-accelerator physics, including neutrino oscillations at the Sudbury Neutrino Observatory and the KamLAND in Japan.

The **Biological and Environmental Research** (BER) program provides the environmental and biological knowledge that promotes national security through improved energy production and use, supports the President's National Energy Plan, and conducts research to protect our environment. There are four subprograms. **Life Sciences** fosters fundamental research in the biological and life sciences to underpin the Department's mission needs and includes the Genomics: GTL program. **Climate Change Research** will enable scientifically-based predictions and assessments of the potential effects of greenhouse gas on climate and the environment, and funds DOE participation in the Nation's Climate Change Science Program (CCSP). **Environmental Remediation** conducts biological and environmental research needed to underpin the Department's mission for environmental quality, and supports clean-up and restoration of the nation's nuclear weapons production sites. Using unique DOE research resources and expertise, the **Medical Applications and Measurement Science** program delivers the scientific knowledge and discoveries that lead to development of 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 to explore the scientific foundations for the development of materials that improve their efficiency, economy, environmental acceptability, and safety for energy generation, conservation, transmission, 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. BES supports the Advanced Energy Initiative with solar conversion and biomass production research. The program operates several world-class user facilities including the **Spallation Neutron Source** at ORNL, the world's most powerful neutron scattering facility. All five of the **Nanoscale Science Research Centers**, part of the National Nanotechnology initiative, will be fully operational in FY 2008. Construction is underway on the next-generation **Linac Coherent Light Source** at SLAC and project engineering and design (PED) funding is requested for a new **National Synchrotron Light Source-II** (NSLS-II).

The **Advanced Scientific Computing Research** (ASCR) program delivers forefront computational and networking capabilities to scientists nationwide that enable them to extend

the frontiers of science. Leadership in scientific computation is a cornerstone of the Department's strategy to ensure the security of the nation, and to succeed in its science, energy, environmental quality, and national security missions. ASCR funds the **National Energy Research Scientific Computing Center** (NERSC) at Lawrence Berkeley National Laboratory (LBNL), which supports over 2,000 users; the **Energy Sciences Network** (ESnet) that links Science researchers and facilities; and the **Leadership Computing Facilities** (LCF) which provide world leading, high performance computing capabilities to researchers on an open, competitive basis.

Fusion is the energy source of stars, including our own sun. The **Fusion Energy Sciences** (FES) program is the national research effort to advance plasma science, fusion science, and fusion technology—the knowledge base required for an economically and environmentally attractive fusion energy source. Facilities include the **DIII-D Tokamak** at General Atomics in San Diego, the **Alcator C-Mod Tokamak** at the Massachusetts Institute of Technology (MIT), and the **National Spherical Torus Experiment** (NSTX) at the Princeton Plasma Physics Laboratory (PPPL). Assembly of the **National Compact Stellarator Experiment** (NCSX) is ongoing at PPPL. DOE is also one of seven international parties participating on the **ITER** project, an international burning plasma fusion experiment to be built in Cadarache, France.

PROGRAM HIGHLIGHTS

As part of the President's American Competitiveness Initiative, the FY 2008 Science request totals $4.4 billion, a 7-percent increase over the FY 2007 congressional request. Within this budget, most research programs and facility operations are maintained near optimal levels, and there are several increases for construction and scientific equipment projects. The Science program also supports the President's Advanced Energy Initiative ($713.1 million) that is comprised of solar ($69.1 million), biomass ($112.9 million), Hydrogen ($74.5 million), ITER ($160 million), Fusion Energy (not including ITER) ($267.9 million) and program management ($28.8 million). Other Presidential initiatives include the Hydrogen Fuel Initiative ($59.5 million); the Climate Change Science Program ($129.6 million); Networking and Information Technology Research and Development ($369.4 million); and the National Nanotechnology Initiative ($285.6 million).

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, including enhanced research on neutrino physics. SLAC continues its research on charge-parity violation, a phenomenon which may explain the preponderance of matter over antimatter in the universe. FY 2008 is the final year of operation of the B-factory at SLAC and responsibility for the operation of SLAC is transitioned to Basic Energy Sciences. DOE, participating with the European Organization for Nuclear Research (CERN), completed U.S. fabrication projects for the **Large Hadron Collider** (LHC) and is now a partner in its research program. Research and development is maintained at $60.0 million on the **International Linear Collider** (ILC), an accelerator which would enable the extension of particle physics research beyond what is feasible at the LHC. HEP also has a program of non-accelerator physics, including research on neutrinos, dark matter, and dark energy.

Nuclear Physics (NP) maintains support in FY 2008 for operations and research at near the FY 2007 request level. This will fund operations of the four national user facilities and research efforts at universities and laboratories. The request continues support of research efforts in the CERN LHC heavy ion program, PED for the 12 GeV CEBAF Upgrade project ($13.5 million), and construction on the Electron Beam Ion Source at RHIC ($4.2 million).

Biological and Environmental Research (BER) has several high visibility activities. The **Genomics: GTL** program, which compliments the **President's Advanced Energy Initiative**, increases by $19.4 million, and fully funds operation of three bioenergy research centers. The **Human Genome** program continues to conduct research and support operations at the

Joint Genome Institute. **Climate Change Research** increases by $3.2 million and includes a focus on abrupt climate change modeling. Funding for **Medical Applications** research is maintained.

The **Basic Energy Sciences** (BES) program increases by 5.5 percent in FY 2008. Funding for operation of the **Spallation Neutron Source** (SNS) levels out as it enters its second full year of operation. **Nanoscale Science Research** funding increases to $279.5 million and all five research centers are operating. The President's **Hydrogen Initiative** is funded ($59.5 million), as are solar ($69.1 million) and biomass ($15.8 million) research related to the President's **Advanced Energy Initiative**. FY 2008 marks the third and final year of the transition of SLAC linac operation and funding from HEP to BES. Funding is provided for PED for the National Synchrotron Light Source II project (NSLS II) ($45.0 million); construction for the Advanced Light Source (ALS) User Building ($17.2 million); and for construction of the **Linac Coherent Light Source** (LCLS) ($51.4 million)**.**

Advanced Scientific Computing Research (ASCR) program continues support for its Leadership Computing Facilities to enable world-leading capability computing at two sites ($105.0 million). Enhanced funding is also provided for critical long-term research in applied mathematics and computer science and ESnet. Funding for NERSC is maintained ($54.8 million).

The **Fusion Energy Sciences** (FES) program will continue support for research and operation of domestic research facilities at DIII-D, Alcator C-Mod and the National Spherical Torus Experiment. The United States will be a full partner in the international **ITER** project, with funding of $160.0 million in FY 2008. Fabrication of the **National Compact Stellarator Experiment** at PPPL is continued. The entire FES program supports the President's **Advanced Energy Initiative**.

The **Science Laboratories Infrastructure** (SLI) program will increase funding for construction projects for general purpose infrastructure. **Science Program Direction** requests additional funding to support total staffing of 1,058 FTEs at headquarters and field sites. **Workforce Development for Teachers and Scientists** and **Safeguards and Security** are funded at the FY 2007 level.

SIGNIFICANT FUNDING CHANGES – FY 2007 to 2008 Request ($ in millions)

High Energy Physics (FY 2007 $775.1; FY 2008 $782.2).....+$7.1

FY 2008 focus continues to be on facility operations and improvements at Fermilab ($216.2; +$0.5), including support for the NuMI Off-axis Neutrino Appearance (NO*ν*A) Detector major item of equipment (MIE) ($4.9). Construction decreases due to the Electron Neutrino Appearance (E*ν*A) Detector, originally proposed as a line-item construction project in FY 2007, which has been reconfigured as an MIE and renamed NO*ν*A (-$10.3). Facility funding for the B-factory at SLAC decreases as responsibility shifts to Basic Energy Sciences ($55.8; -$37.1). The U.S. contribution to LHC detectors is completed in FY 2007 (-$3.2), and LHC support increases ($62.0; +$5.2)..... -$44.9

Funding for Non-Accelerator Physics using underground, ground-based, or space-based facilities increases ($72.4; +$13.1), and Theoretical Physics also increases ($56.9; +$4.8). The Advanced Technology R&D increase is partly in support of superconducting radiofrequency (RF) technology ($183.4; +$24.0). Other research is increased primarily to maintain strong participation in the Tevatron, LHC and neutrino physics programs (+$10.1)..... +$52.0

Nuclear Physics (FY 2007 $454.1; FY 2008 $471.3).....+$17.3

Research and operations at **TJNAF**, **RHIC**, **HRIBF**, and **ATLAS** continue as a high priority for funding in FY 2008 and are supported at approximately FY 2007 levels (+$5.0), as is

research at other national laboratories and universities ($+8.1). Funding is also provided for investment in rare isotope beam capabilities (+$1.0) .....+$14.1

Construction funding supports PED for the 12 GeV CEBAF upgrade ($13.5; +$6.5), and the final year of construction of the Electron Beam Ion Source project ($4.2; -$3.3) .....+$3.2

Biological and Environmental Research (FY 2007 $510.3; FY 2008 $531.9).....+$21.6
In Life Sciences, the **Genomics: GTL** increase includes funding to initiate a third GTL bioenergy research center and fully fund operation of the two bioenergy research centers initiating in FY 2007 ($154.8; +$19.5) and **Human Genome** funding is slightly decreased ($72.2; -$1.8). Other research is increased (+$0.5) .....+$18.2

Climate Change Research ($138.1) increases to accelerate research to create a first-generation Earth System model and to initiate research on abrupt climate change (+$7.3). Funding is decreased as the Free Air Carbon Enrichment (FACE) experiments are no longer funded as user facilities and the research costs are moved into other research program areas (-$5.4). Other climate change research increases (+$1.3).....+$3.2

Environmental Remediation, ($97.4; +$0.2), and **Medical Applications and Measurement Science** ($14.0) are maintained. .....+$0.2

Basic Energy Sciences (FY 2007 $1,421.0; FY 2008 $1,498.5).....+$77.5
Materials Sciences and Engineering ($1,093.2) increases funding for **Nanoscale Science** research ($122.3; +$13.8); the **President's Hydrogen Initiative** ($33.4; +$9.5); and solar ($26.1; +$3.1). Increases in facility operations include the four light sources (+$16.0), operation of five nanoscale science research centers (+$22.9), High Flux Isotope Reactor (+$3.0) and increased responsibility for SLAC Linac operations as responsibility shifts from High Energy Physics (+$21.5). All other funding is maintained (-$0.8).....+$89.0

Chemical Sciences, Geosciences, and Biosciences ($284.0) also increases funding for **Nanoscale Science** research (+$8.0), the **President's Hydrogen Initiative** (+$4.2), and solar ($42.9; +$4.1) and biomass-related research ($15.6; +$0.5). All other changes, including facility operations (-$1.4).....+$15.4

Construction funding is increased for PED for the National Synchrotron Light Source II (+$25.0); construction of the Advanced Light Source User Support Building (+$14.2); and PED and construction for the new Photon Ultrafast Laser Science and Engineering Building Renovation at SLAC (+$7.4). Scheduled reductions include completion of the remaining nanoscale science research centers (-$19.0), and ramp-down of the Linac Coherent Light Source (-$54.5) .....-$26.9

Advanced Scientific Computing Research (FY 2007 $318.7; FY 2008 $340.2).....+$21.5
Increased funding supports critical long-term applied mathematical research and the Computational Science Graduate Fellowship program (+$7.4) and long-term research in computer science (+$5.1). The Leadership Computing Facility (LCF) at ANL ($28.0) will be expanded to 250-500 teraflops and the ORNL ($77.0) will operate at 250 teraflops leading to a Petaflop-scale follow-on system (+$2.5). The Research and Evaluation Prototype computer activity increases and focuses on preparing for the next generations of scientific computers (+$4.0). Other research increases, including high performance network facilities and testbeds (+$2.5).

Science Laboratories Infrastructure (FY 2007 $50.9; FY 2008 $79.0) .....+$28.1
Increase provided to support on-going construction projects (+$6.9). FY 2008 funding is held in reserve pending resolution of issues related to capability replacement and renovation of facilities at Pacific Northwest National Laboratory (PNNL) (+$35.0). FY 2007 is the final year

of funding for the SLAC Safety and Reliability Improvement project (-$6.3). Funding is continued at a reduced level for demolition of the Bevatron at LBNL ($6.1; -$7.5).

Fusion Energy Sciences (FY 2007 $319.0; FY 2008 $427.9) .....+$108.9
Funding for the international ITER project increases significantly to support the third year of funding for the U.S. Contributions to ITER MIE. This MIE provides hardware, personnel, cash for common expenses, and contingency to the International ITER Organization ($160.0; +$100.0). The increase for the remainder of the program supports activities at the FY 2007 request level and includes increases in the Science research programs ($159.5; +$5.3), ongoing support for Facility Operations other than ITER ($77.0; +$3.0), and Enabling R&D ($31.3; +$0.6).

Science Program Direction (FY 2007 $170.9; FY 2008 $184.9) .....+$14.1
Funding for salaries and benefits for headquarters and field staffing increases to support 44 additional FTEs (total FY 2008 staffing of 1,058 FTEs) due primarily to the transfer of funding for the New Brunswick Laboratory to SC.

SECTION 4. ENVIRONMENTAL RESPONSIBILITY

(discretionary dollars in thousands)

	FY 2006 Current Approp.	FY 2007 Congressional Request	FY 2008 Congressional Request	FY 2008 vs. FY 2007 $	FY 2008 vs. FY 2007 %
Environment					
Environmental Management	6,589,532	5,828,038	5,655,351	-172,687	-3.0%
Civilian Radioactive Waste Management	495,000	544,500	494,500	-50,000	-9.2%
Office of Legacy Management	77,812	200,990	194,167	-6,823	-3.4%
Total, Environment	**7,162,344**	**6,573,528**	**6,344,018**	**-229,510**	**-3.5%**

Environmental Responsibility Strategic Theme: Protecting the environment by providing a responsible resolution to the environmental legacy of nuclear weapons production

Goal 4.1 Environmental Cleanup – Complete cleanup of the contaminated nuclear weapons manufacturing and testing sites across the United States

Goal 4.2 Managing the Legacy – Manage the Department's post-closure environmental responsibilities and ensure the future protection of human health and the environment

Environmental Management

(discretionary dollars in thousands)

	FY 2006 Current Approp.	FY 2007 Congressional Request	FY 2008 Congressional Request	FY 2008 vs. FY 2007 $	FY 2008 vs. FY 2007 %
Environmental Management					
Defense environmental cleanup	6,129,729	5,390,312	5,363,905	-26,407	-0.5%
Non-Defense environmental cleanup	349,687	310,358	180,937	-129,421	-41.7%
Uranium enrichment D&D fund	556,606	579,368	573,509	-5,859	-1.0%
Subtotal, Environmental	7,036,022	6,280,038	6,118,351	-161,687	-2.6%
Uranium enrichment D&D fund discretionary payments	-446,490	-452,000	-463,000	-11,000	-2.4%
Total, Environmental Management	**6,589,532**	**5,828,038**	**5,655,351**	**-172,687**	**-3.0%**

PROGRAM DESCRIPTION

The **Environmental Management** (EM) program was created in 1989 to manage safely the cleanup of the environmental legacy from 50 years of nuclear weapons production and government-sponsored 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. The EM program has been working to focus the program on risk reduction rather than risk management and complete cleanup more efficiently and cost effectively. To continue progress, DOE is **requesting** a total of **$5.66 billion** in **FY 2008**.

EM is requesting program funds in three appropriation accounts: **Defense Environmental Cleanup** (FY 2007 $5.39 billion; FY 2008 $5.36 billion); **Non-Defense Environmental Completion** (FY 2007 $310.4 million; FY 2008 $180.9 million); and **Uranium Enrichment Decontamination and Decommissioning Fund** (FY 2007 $579.4 million; FY 2008 $573.5 million).

PROGRAM HIGHLIGHTS

The FY 2008 budget request totals $5.66 billion, a decrease of $173 million from the FY 2007 request. The FY 2008 request places priority on activities with the greatest risk reduction, while continuing the Department's commitment to the highest level of safety performance. The priorities reflected in this request are important not only to the success of the cleanup program, but to the communities and states in which the sites are located. The FY 2008 request continues progress toward cleaning up and closing sites, and reflects the following priorities: requisite safety, security, and services at all sites; the safe storage and treatment, disposition of radioactive tank waste; the storage, receipt, and remediation of spent nuclear fuel; the storage, processing and disposition of special nuclear materials; the treatment, storage and disposal of transuranic and low-level waste; the remediation of high-priority groundwater and soil contamination; and the decontamination and decommission of excess contaminated facilities.

Defense Environmental Cleanup

(discretionary dollars in thousands)

	FY 2006 Current Approp.	FY 2007 Congressional Request	FY 2008 Congressional Request	FY 2008 vs. FY 2007 $	FY 2008 vs. FY 2007 %
Defense Environmental Cleanup					
Closure sites	1,077,806	320,937	42,437	-278,500	-86.8%
Hanford site	772,873	804,716	877,080	+72,364	+9.0%
Office of River Protection	848,334	964,127	963,443	-684	-0.1%
Idaho National Laboratory	532,862	512,604	504,026	-8,578	-1.7%
NNSA sites and Nevada off-sites	299,447	232,068	271,130	+39,062	+16.8%
Oak Ridge Reservation	254,790	159,862	179,284	+19,422	+12.1%
Savannah River site	1,270,973	1,084,394	1,206,090	+121,696	+11.2%
Waste Isolation Pilot Plant	228,331	213,278	219,739	+6,461	+3.0%
Program direction	241,386	291,216	309,760	+18,544	+6.4%
Program support	32,519	37,881	33,146	-4,735	-12.5%
Safeguards and Security	281,189	295,840	273,381	-22,459	-7.6%
Technology development	29,047	21,389	21,389	——	——
Uranium enrichment D&D fund contribution	446,490	452,000	463,000	+11,000	+2.4%
Subtotal, Defense environmental cleanup	6,316,047	5,390,312	5,363,905	-26,407	-0.5%
Use of prior year balances and other adjustments	-186,318	——	——	——	——
Total, Defense Environmental Cleanup	**6,129,729**	**5,390,312**	**5,363,905**	**-26,407**	**-0.5%**

PROGRAM DESCRIPTION

The **FY 2008 request** for the **Defense Environmental Cleanup** appropriation is **$5.4 billion**. This appropriation supports the largest portion of the Environmental Management mission, with the goal of completing cleanup of the defense weapons research and production legacy. Upon completion, sites or portions of sites will be turned over to other DOE program landlords or to the Office of Legacy Management program for long-term surveillance and maintenance. Defense Environmental Cleanup provides funding in accounts that are generally organized by site or location, such as the Savannah River Site. It also includes funding for Safeguards and Security, Technology Development and Deployment, Program Support, and Program Direction. This appropriation includes funding for projects at the Idaho National Laboratory, Oak Ridge Reservation, Defense Closure sites (Fernald, Miamisburg, Ashtabula, Columbus and Rocky Flats, and post-closure administration activities), the Hanford Site, the Savannah River Site, the Waste Isolation Pilot Plant (WIPP), and legacy cleanup at National Nuclear Security Administration (NNSA) sites.

SIGNIFICANT FUNDING CHANGES – FY 2007 to FY 2008 Request ($ in millions)

Closure Sites (FY 2007 $320.9, FY 2008 $42.4)..... -$278.5
Request supports cleanup, closure and post-closure activities at the **Ashtabula, Fernald and Miamisburg (Mound) sites in Ohio, and Rocky Flats in Colorado**. The decrease in this account reflects completed cleanup at Fernald in FY 2007. While responsibility for post-closure administration at Rocky Flats, Fernald, and Columbus, including long-term stewardship of the remedy, contractor post-retirement benefits (e.g., pensions, medical benefits, life insurance), and records management transferred to the Office of Legacy Management in FY 2007, the FY 2008 request provides for ongoing litigation liabilities, contract closeout, and regulatory completion activities at completed sites that are managed by the Consolidated Business Center ($11.8). Request also supports post-closure activities at Miamisburg including post-retirement pensions and benefits and long-term stewardship in anticipation of the eventual transfer to the Office of Legacy Management ($30.3). Cleanup of Operable Unit 1, the last remaining cleanup activity at the Mound site will be completed in 2007.

Hanford Site (Richland) (FY 2007 $804.7; FY 2008 $877.1).....+$72.4
Richland Operations Office manages Hanford site cleanup activities associated with the production of nuclear materials during the Cold War, including soil and groundwater remediation, facility decontamination and decommissioning (D&D), stabilization and disposition of nuclear materials and spent nuclear fuel, and waste disposition for wastes other than high-level waste, which is managed by the Office of River Protection. Defense-related Hanford activities are funded in two control points: 2012 Completion Projects ($413.0) and 2035 Completion Projects ($464.0).

The request provides an increase for spent nuclear fuel activities at **K Basins** to support increased D&D activities at K-East Basin and construction of sludge treatment systems, offset by a ramp-down in sludge containerized activities which will be completed in 2008 (+$18.7). There are also increases for the **Plutonium Finishing Plant Complex** for de-inventory of special nuclear material, pending consolidation decision (+$16.4); and groundwater/vadose zone remediation to expand remediation systems and install a new treatment system to prevent plumes from reaching the Columbia River (+$29.6). The **River Corridor Closure project** for D&D of facilities and remediation of chemical and radioactive contaminants in soils and groundwater along the Columbia River is funded at $215.2 million, a small decrease (-$5.8) that reflects increased remediation in 100, 300 and 600 areas, offset by decreases in facility demolition in 300 area. The request provides for ongoing waste management and disposition, including increased mixed-waste treatment activities and the start of conceptual design for the remote-handled TRU waste processing capability. The request continues operations at Environmental Restoration Disposal Facility.

Office of River Protection (FY 2007 $964.1; FY 2008 $963.4).....-$0.7
Office of River Protection's primary goal is the safe management and treatment of approximately 53 million gallons of high-level radioactive liquid waste in the 177 underground storage tanks at Hanford. Funding for River Protection activities is funded in two control points: the Waste Treatment and Immobilization Project ($690) and Tank Farm Activities ($273.4).

The **Waste Treatment and Immobilization Plant** (WTP) has experienced significant technical and project management issues that impact the cost and schedule of the project. The Department slowed the project to address these problems and undertook a series of aggressive actions to thoroughly review the key elements of the project. The Department has put aggressive oversight, management and project controls in place and, in December 2006, established a credible, new validated cost and schedule baseline for the project. As of the end of FY 2006, design of the project was approximately 78 percent complete, and construction was 29 percent complete.

The FY 2008 request supports continued design and ongoing construction on the Low-Activity Waste Facility ($100); Analytical Laboratory ($40); and Balance of Facilities ($85). It also provides for the restart of construction of the High-Level Waste Facility ($189) and Pretreatment Facility ($276), on the critical path for completion of the plant, which was suspended while seismic and other technical issues were addressed.

Office of River Protection also manages the stabilization of approximately 53 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. FY 2008 request maintains the tank farm in a safe and compliant manner, continues operation of the 222-S Laboratory and the 242-A Evaporator, and continues Single Shell Tank retrievals on a pace that supports the Waste Treatment Plant schedule. The request is essentially level with FY 2007.

Idaho National Laboratory (FY 2007 $512.6; FY 2008 $504.0) .....-$8.6
FY 2008 request continues the safe management and disposition of high-level radioactive waste, transuranic waste and spent nuclear fuel, as well as remediation activities and the disposal of on-site mixed low-level, hazardous, and other wastes. Continues operations of the **Advanced Mixed Waste Treatment Facility** and shipments of waste to the Waste Isolation Pilot Plant, including remote-handled transuranic waste. An increase of $81.8 million reflects the ramp up of construction of the **Sodium Bearing Waste Treatment Facility**. Request includes an increase for spent nuclear fuel management for Foreign Research Reactor receipts and Naval Spent Fuel transfers. Decrease for waste management activities reflects a reduction of site waste disposition activities for legacy and newly generated low-level, mixed low-level, and hazardous wastes due to other higher priorities. Decreases for D&D activities are due to early completions at Test Area North-607 and other projects, as well as deferred non-nuclear D&D activities to support higher priority compliance activities. Request continues removal operations of targeted **buried waste** at the Radioactive Waste Management Complex.

NNSA Sites (FY 2007 $232.1; FY 2008 $271.1) .....+$39.0
Request provides for cleanup of the legacy of environmental contamination and waste at National Nuclear Security Administration (NNSA) sites. Included are **Lawrence Livermore National Laboratory-Site 300** ($8.7), **Los Alamos National Laboratory** ($139.5), **Nevada Test Site** ($81.1), **Pantex** ($12.4), and **Separations Process Research Unit** ($27.6), as well as community support activities.

The increase for **Los Alamos National Laboratory** (+$48.9) reflects performance improvements and establishment of a sound baseline by the new contractor, resulting in a restoration of funding to the FY 2006 level. Increase support remediation activities to meet Consent Order milestones. Request does not provide funding for D&D activities at facilities in Technical Area-21 in order to fund higher compliance priorities.

The request for **Nevada Test Site** (+$1.4) supports operation of the low-level waste disposal facility, and ongoing characterization and remediation activities. It includes increase to fund the low-level waste disposal facility in the Nevada budget, previously partially funded in site budgets. This is offset by decreases due to completion of transuranic waste shipments to WIPP in FY 2007, and a shift in subsurface contamination efforts from field characterization to data analysis and model development.

Decreases in the FY 2008 request for **Pantex** (-$11.3) and **Lawrence Livermore National Lab** (-$2.9) reflect a ramp-down toward site completion in FY 2008 as remediation, D&D, and waste disposition projects are completed. The increase for **Separations Process Research Unit** (+$3.1) continues active cleanup at the site.

Oak Ridge Reservation (FY 2007 $159.9; FY 2008 $179.3).....+$19.4
FY 2008 request supports treatment and disposal of defense-funded decommissioning, legacy waste management activities, including operation of the **Toxic Substances Control Act (TSCA) Incinerator,** processing of contact-and remote-handled waste at the **Transuranic Waste Treatment Facility**; and remediation activities at the **Oak Ridge Reservation**, which includes Oak Ridge National Laboratory, Y-12 Plant, East Tennessee Technology Park (ETTP) and several offsite locations. Additional funding supports increased unit costs for processing transuranic waste at the Transuranic Waste Processing Facility for shipment to WIPP. It also supports progress towards down-blending and disposition of uranium-233 in **Building 3019** (+$20) through the finalization of design and the start of long-lead procurement activities.

Savannah River (FY 2007 $1,084.4; FY 2008 $1,206.1) ..... +$121.7
Savannah River Site is responsible for stabilization, treatment and disposition of legacy nuclear materials and wastes, spent nuclear fuels, and remediation of contaminated media resulting from

nuclear materials produced during the Cold War. Funding for Savannah River activities is funded in three control points: 2012 Completion Projects ($31.0), 2035 Completion Projects ($510.1) and Tank Farm Activities ($665.0).

The FY 2008 request supports management and stabilization of "at risk" spent nuclear fuel and nuclear materials. It continues operations in the **H Canyon/H-B** Line to process legacy materials and aluminum-clad spent nuclear fuel and support NNSA-funded efforts to blend highly enriched uranium to low enriched uranium. The F-Canyon complex will be maintained in a minimum surveillance and monitoring condition.

The FY 2008 request continues storage and surveillance of stabilized nuclear materials in the **K-Area Material Storage** facilities, key to the Department's efforts to consolidate nuclear materials across the complex. Pending a consolidation decision, it supports receipt of nuclear materials from off-site. It includes $31 million for continued construction of a 3013 Container Surveillance Capability in Building 105-K. The request also includes $15 million to begin preliminary design of the plutonium vitrification disposition project to provide capability to disposition plutonium without an identified disposition path.

The request continues progress in the management and disposition of high-level waste. It supports vitrification of high-level tank waste at the **Defense Waste Processing Facility** (186 canisters in FY 2008). It also includes $10 million to continue design to address seismic and other technical issues and $131 million to ramp up construction of the **Salt Waste Processing Facility**. The request continues safe maintenance of the high-level waste tanks and supports waste removal activities in a number of tanks, including closing two tanks.

The site continues other important mission management and disposition of all waste types, including transuranic waste shipped to the Waste Isolation Pilot Plant for disposal, and cleanup of contaminated soil and groundwater in accordance with compliance agreements.

The increase for the Savannah River Site primarily reflects increased bulk waste removal activities from the tanks, increases for Salt Waste Processing Facility construction, and the start of preliminary design completion of plutonium vitrification disposition capability. These are offset by reduced number of drummed TRU waste shipments to the Waste Isolation Pilot Plant and waste stream volume reductions, and completion of several high-cost remediation projects.

Waste Isolation Pilot Plant (FY 2007 $213.3; FY 2008 $219.7) .....+$6.4
Funding supports the National Transuranic Waste Program, managed by Carlsbad Field Office, including the operation of the **Waste Isolation Pilot Plant** (WIPP), the national repository for defense-generated transuranic waste, near Carlsbad, New Mexico. Funding supports 21 shipments of contact-handled and ramp up to 6 shipments of remote-handled waste per week. Increase reflects additional activities at the generator sites to support remote-handled waste shipments. This is offset by completion of procurement of remote-handled trailers.

Program Direction (FY 2007 $291.2; FY 2008 $309.8).....+$18.6
Request supports the federal workforce responsible for the overall direction and administrative support of the EM program, including both headquarters and field personnel. It provides funding for salaries, benefits, travel, training, support services, and other related expenses for 1,500 FTEs; 1,051 of these FTEs are located in field offices, 299 in Headquarters, and 150 FTEs are assigned to the EM Consolidated Business Center Program. Includes 8 FTEs associated with the Central Technical Authority that provides nuclear safety oversight for the Department. Increase reflects increased personnel costs, increased requirements for technical support associated with activities such as seismic

evaluations and independent program reviews, and the transfer of 5 FTEs as part of a Departmental restructuring that established the Office of Health, Safety and Security.

Program Support (FY 2007 $37.9; FY 2008 $33.1) .....-$4.8
FY 2008 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. Decrease reflects reduction in Defense Contracts Audit Agency requirements and completion of the Environmental Impact Statement for disposal of Greater-Than-Class-C waste in FY 2008.

Safeguards and Security (FY 2007 $295.8; FY 2008 $273.4).....-$22.4
Request ensures appropriate levels of protection for EM facilities and cleanup sites. FY 2008 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, West Valley, Paducah, Portsmouth, Hanford, and Savannah River sites. Decrease reflects implementation of Design Basis Threat Requirements at Savannah River Site as well as completion of security upgrades at other sites. In addition, there will be sufficient carryover to meet all FY 2008 requirements at the Paducah site, so no additional budget authority is needed. These decreases are partially offset by an increase to begin security upgrades at the Canister Storage Building and support offsite nuclear material shipments at Richland.

Technology Development and Deployment (FY 2007 $21.4; FY 2008 $21.4)..... $0
Provides technical solutions and alternative technologies to enable accelerated cleanup. Areas of investment are critical high-return activities. The goals of the Technology Development and Deployment program are to eliminate technical barriers to cleanup by addressing technology needs identified by the sites and provide technical assistance to the sites. The program is composed of critical, high-risk, high-payback activities where significant improvement can be gained. Request maintains level funding for the program.

D&D Fund Deposit (FY 2007 $452.0; FY 2008 $463.0) .....+$11.0
Provides EM program's contribution to the Uranium Enrichment Decontamination and Decommissioning Fund. The increase reflects the government commitment to meet the government contribution required by the Energy Policy Act of 1992.

Non-Defense Environmental Cleanup

(discretionary dollars in thousands)

	FY 2006 Current Approp.	FY 2007 Congressional Request	FY 2008 Congressional Request	FY 2008 vs. FY 2007 $	FY 2008 vs. FY 2007 %
Non-Defense Environmental Cleanup					
West Valley demonstration project	76,329	73,400	54,395	-19,005	-25.9%
Gaseous diffusion plants	48,325	74,860	38,120	-36,740	-49.1%
Depleted uranium hexafluoride conversion, 02-U-101	84,945	32,556	——	-32,556	-100.0%
Fast flux test reactor facility (WA)	45,652	34,843	10,342	-24,501	-70.3%
Small sites	94,436	94,699	78,080	-16,619	-17.5%
Total, Non-Defense Environmental Cleanup	**349,687**	**310,358**	**180,937**	**-129,421**	**-41.7%**

PROGRAM DESCRIPTION

The **FY 2008 request** for the **Non-Defense Environmental Cleanup** appropriation is **$180.9 million**. This appropriation supports activities that manage and address 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 that 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 Environmental Cleanup provides funding in several accounts: Fast Flux Test Reactor Facility, Gaseous Diffusion Plants, Small Sites, and the West Valley Demonstration Project. Funding for the Small Sites account includes projects at Argonne National Laboratory, Brookhaven National Laboratory, the Energy Technology Engineering Center (ETEC), Idaho National Laboratory, the Inhalation Toxicology Laboratory, Los Alamos National Laboratory, Moab, and the Stanford Linear Accelerator Center.

SIGNIFICANT FUNDING CHANGES – FY 2007 to FY 2008 Request ($ in millions)

West Valley Demonstration Project (FY 2007 $73.4; FY 2008 $54.4) .....-$19.0
This account funds solid waste stabilization and disposition, and nuclear facility decontamination and decommissioning activities at West Valley, New York. FY 2008 funding supports continued facility decommissioning activities as well as the processing of transuranic (TRU) and high-activity wastes through the **Remote-Handled Waste Facility**, and shipments of waste off-site. Decrease is due to reduction in costs for the Environmental Impact Statement for Long-Term Stewardship and completion of the demolition of the 01/14 Building and other related facilities in FY 2007, as well as reduction in low-level waste shipments from the Drum Cell.

Gaseous Diffusion Plants (FY 2007 $107.4; FY 2008 $38.1) .....-$69.3
EM program manages the maintenance and storage of depleted uranium hexafluoride cylinders and other uranium activities at the gaseous diffusion plants at Paducah, Kentucky, and Portsmouth, Ohio. Activities supported include maintenance of facilities and inventories and pre-existing liabilities.

Paducah (FY 2007 $35.2; FY 2008 $17.4).....-$17.8
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 2008 request supports

management, maintenance, and storage of uranium hexafluoride cylinders awaiting conversion. Decrease in funding reflects completion of construction of the **Depleted Uranium Hexafluoride Conversion Facility**, projected to come on line in FY 2008.

Portsmouth (FY 2007 $72.2; FY 2008 $20.8).....-$51.5
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 ceased the production of enriched uranium at the plant. FY 2008 request continues the storage and maintenance of uranium hexafluoride cylinders awaiting conversion. The reduced funding request reflects completion of construction of a **Depleted Uranium Hexafluoride (DUF6) Conversion Facility** (-$16.3) and the completion of decontamination and decommissioning of the **Gaseous Centrifuge Enrichment Plant** (-$20) to support the USEC **Advanced Centrifuge Facility** to be sited at Portsmouth.

Fast Flux Test Reactor Facility (FY 2007 $34.8; 2008 $10.3) .....-$-24.5
This account funds the deactivation and decommissioning of the Fast Flux Test Facility at the Hanford site. A record of decision issued in January 2001 established that the Fast Flux Test Facility would be permanently deactivated, and a subsequent decision by the Secretary of Energy was made to permanently close the facility. The Department later decided to defer substantial D&D activities to focus site resources on other risk cleanup priorities. FY 2008 request supports continued activities long-term surveillance and maintenance of the facilities and transport of sodium bonded fuel to Idaho National Laboratory for disposition. Decrease reflects the decision to defer D&D activities.

Small Sites (FY 2007 $94.7; FY 2008 $78.1).....-$16.6
Activities include cleanup and decontamination and decommissioning activities at small non-defense sites and projects at **Argonne National Laboratory, Brookhaven National Laboratory**, **Energy Technology Engineering Center (ETEC),** the **Inhalation Toxicology Laboratory**, **Los Alamos National Laboratory**, **Moab site**, and the **Stanford Linear Accelerator Center**. This account also includes non-defense spent nuclear fuel operations funded through the **Idaho National Laboratory**. Significant changes in site funding include:

Argonne National Laboratory (FY 2007 $10.7; FY 2008 $2.4) .....-$8.3
FY 2008 request funds long-term response actions and long-term stewardship activities as well as decommissioning of excess facilities. FY 2008 request will fund continued decommissioning of the 301 Hot Cell.

Brookhaven National Laboratory (FY 2007 $28.3; FY 2008 $23.7).....-$4.6
Primarily funds decontamination and decommissioning activities for the **Graphite Research Reactor** and the **High Flux Beam Reactor**. FY 2008 request accommodates bio-shield removal activities at the Graphite Reactor and continues decontamination and decommissioning activities at the High Flux Beam Reactor. Decrease reflects sequencing of work at the Graphite Reactor.

Idaho National Laboratory (FY 2008 $7.0; FY 2008 $5.4) .....-$1.6
FY 2008 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 in funding reflects completion of the five-year aging study.

Inhalation Toxicology Laboratory (FY 2007 $2.9; FY 2008 $0.4).....-$2.5
FY 2008 request supports completion of the project to free up laboratory space for alternate uses by the end of the fiscal year.

Energy Technology Engineering Center (FY 2007 $16.0; FY 2008 $13.0).....-$3.0
Request continues decontamination and decommissioning activities and off-site disposal of wastes from ETEC. Decrease reflects completion of Building 4024.

Los Alamos National Laboratory (FY 2007 $1.0; FY 2008 $1.9).....+$0.9
FY 2008 request funds surveillance and maintenance at the Tritium System Test Facility and characterization activities in support of decontamination and decommissioning contract for the facility in FY 2009.

Moab Site (FY 2007 $22.9; FY 2008 $24.0).....+$1.1
This project funds remediation of the former Atlas Mineral Corporation, Uranium Ore Processing and Mill Site at Moab, Utah. The Environmental Impact Statement Record of Decision, signed in September 2005, determined that the site would be cleaned up to pre-mill conditions with institutional controls to protect human health and the environment. FY 2008 activities include railroad upgrades and rail spur construction, disposal cell excavation, and design of groundwater remediation measures.

Stanford Linear Accelerator Center (FY 2007 $5.7; FY 2008 $5.9).....+$0.2
This project addresses chemical contamination of soil and groundwater from decades of physics research operations at the site. FY 2008 funding supports completion of the dual phase extraction system to address groundwater contamination.

Uranium Enrichment Decontamination and Decommissioning Fund

(discretionary dollars in thousands)

	FY 2006 Current Approp.	FY 2007 Congressional Request	FY 2008 Congressional Request	FY 2008 vs. FY 2007 $	FY 2008 vs. FY 2007 %
Uranium Enrichment Decontamination and Decommissioning Fund					
Decontamination and decommissioning	536,806	559,368	553,509	-5,859	-1.0%
Uranium/thorium reimbursement	19,800	20,000	20,000	——	——
Total, Uranium Enrichment D&D Fund	**556,606**	**579,368**	**573,509**	**-5,859**	**-1.0%**

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 that sold material to the U.S. government. The request for UED&D Fund activities for **FY 2008** is **$573.5 million**.

SIGNIFICANT FUNDING CHANGES – FY 2007 to FY 2008 Request ($ in millions)

Decontamination and Decommissioning
(FY 2007 $559.4; FY 2008 $553.5).....-$5.9
Office of Environmental Management manages the maintenance, decontamination, decommissioning, and remediation of uranium processing facilities and the gaseous diffusion plants at Paducah, Kentucky; Portsmouth, Ohio; and the East Tennessee Technology Park in Oak Ridge, Tennessee.

Oak Ridge East Tennessee Technology Park (ETTP) (formerly K-25)
(FY 2007 $311.5; FY 2008 $230.4).....-$81.1
ETTP was built as part of the World War II Manhattan Project and was 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 2008 request supports continued decontamination and decommissioning activities for **K-25** and **K-27**, completion of excess material removal, demolition work at K-25 and K-27, continued Zone 1 remedial actions, and continued surveillance and maintenance. Decrease is consistent with work plans to complete the site by 2010.

Paducah (FY 2007 $96.6; FY 2008 $116.7).....+$20.1
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 2008 request continues treatment of groundwater associated with building C-400, which is contaminated with

dense non-aqueous phase liquids (DNAPLs); continues characterization and disposition activities of **DOE Material Storage Areas**; and continues decontamination and decommissioning of the **C-410 Complex**. Increase reflects ramp up consistent with effort required to meet the Agreed Order and Consent Decree.

Portsmouth (FY 2007 $151.3; FY 2008 $206.4) ..... +$55.1
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 2008 request supports continued disposal of low-level waste from stored converter shells, continued X-701B oxidation treatment activities and award of a new contract to conduct decontamination and decommissioning activities for the gaseous diffusion plant. Increase in funding reflects initiation of soil and groundwater measures to meet commitments and support to award the new contract for decontamination and decommissioning of the gaseous diffusion plant.

Uranium/Thorium Reimbursements (FY 2007 $20.0; FY 2008 $20.0)..... $0
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). FY 2008 request allows payment of eligible claims without delay.

Civilian Radioactive Waste Management

(discretionary dollars in thousands)

	FY 2006 Current Approp.	FY 2007 Congressional Request	FY 2008 Congressional Request	FY 2008 vs. FY 2007 $	FY 2008 vs. FY 2007 %
Office of Civilian Radioactive Waste Management					
Defense Nuclear Waste Disposal					
Defense nuclear waste disposal	346,500	388,080	292,046	-96,034	-24.7%
Nuclear Waste Disposal					
Repository program	19,800	80,986	127,780	+46,794	+57.8%
Integrated spent fuel recycling	49,500	——	——	——	——
Program direction	79,200	75,434	74,674	-760	-1.0%
Total, Nuclear Waste Disposal	148,500	156,420	202,454	+46,034	+29.4%
Total, Office of Civilian Radioactive Waste Management	**495,000**	**544,500**	**494,500**	**-50,000**	**-9.2%**

Funding for the **Office of Civilian Radioactive Waste Management** is requested in two accounts within the Energy and Water Development Appropriation: Nuclear Waste Disposal 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 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. The **FY 2008 budget request** of **$494.5 million** supports these activities.

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 September 30, 2006, there is a total of $25.7 billion in fees and interest collected in the Nuclear Waste Fund of which $6.7 billion has been disbursed for a balance of $19.0 billion.

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 mission of the CRWM program is critical to this country's national and economic security. In order for the United States to remain competitive in the global economy, its domestic energy resources need to be developed and utilized effectively. Nuclear energy can play a critical role in providing a significant share of our electrical energy in an environmentally sound manner. Designing, licensing and constructing a geologic repository for spent nuclear fuel and high level waste will resolve the challenge of safe disposal of these materials and make construction of new nuclear power plants more feasible, helping to expand our energy options and secure our economic future. In addition, a secure permanent repository is necessary to support nuclear non-proliferation goals, contributing to national security objectives.

The CRWM program has adjusted its schedule for submitting a license application to the Nuclear Regulatory Commission (NRC) for the construction of a geologic repository. This was required following the decision by the United States Court of Appeals for the District of Columbia Circuit to vacate the Environmental Protection Administration (EPA) standard for the radiological compliance period for waste disposal at Yucca Mountain. In addition, the NRC rejected the Department's certification of its Licensing Support Network. CRWM will submit a high quality license application to NRC by June 30, 2008.

The program continues to implement an operational strategy based on a "clean canisterized" approach for fuel handling. This approach centers on the development of multipurpose canisters that are suitable for the transportation, aging and disposal (TAD) of spent nuclear fuel and high-level radioactive waste. The use of TAD canisters reduces fuel handling operations, permitting smaller, less complex surface facilities at the repository site allowing operations to be conducted in a cleaner, simplified, and safe manner by minimizing radiation exposure issues.

The FY 2008 budget provides $494.5 million for work necessary to support the development of a repository including:

- Defending a license application to the NRC based on a simpler and safer approach to handling spent nuclear fuel and operating the repository;
- Continuing the planning and design for facilities required for the receipt of spent nuclear fuel and high-level waste for emplacement in the repository;
- Making critical infrastructure upgrades at Yucca Mountain to ensure worker, regulator, and visitor safety and operational efficiency; and
- Continuing critical interactions needed to support national transportation planning activities and the Draft Nevada Rail Alignment Environmental Impact Statement.

Finally, the Administration submitted a legislative proposal to Congress that addresses funding reform and regulatory issues that, if enacted, would allow the Department to secure the necessary fiscal resources needed for program success and clears the path for the program to move forward expeditiously toward waste acceptance.

SIGNIFICANT FUNDING CHANGES – FY 2007 to FY 2008 Request ($ in millions)

Yucca Mountain Project (FY 2007 $355.4; FY 2008 $378.4).....+$23.0
In FY 2008, DOE will move forward to submit a high quality License Application (LA) to the Nuclear Regulatory Commission (NRC) no later than 30 June 2008 (+$17.0). The effort includes not only preparation and submission of the LA but also includes oversight and

coordination of license activities to include legal support, and network support for documentation. It also includes pre-licensing interactions with the NRC to allow evaluation of the adequacy of technical and regulatory approaches prior to submission of the LA. The FY 2008 budget supports the repository design to facilitate early procurement, construction, and eventual operation of a geologic repository (+$9.6). Project support has been reduced to increase the Payments Equal to Taxes program (PETT) and oversight funding to the State of Nevada and the Affected Units of Local Government (AULG) program in compliance with the Nuclear Waste Policy Act (NWPA), Section 116 (c) "Financial Assistance" (-$4.8). A new report is mandated to evaluate the need for a second repository (+$2.0). Plant infrastructure requirements have been reduced due to the suspension of facility replacement construction projects initiated in FY 2007 (-$0.8).

Transportation (FY 2007 $67.7; FY 2008 $15.0).....-$52.7
Nevada Rail Line funding is decreased due to a deferment funding of the preliminary design effort (-$21.9). Likewise cask procurement, rail car development, development of support facilities, transportation planning, stakeholder interaction, associated management and other costs are deferred until future periods (-$30.8).

Program Management and Integration (FY 2007 $46.0; FY 2008 $26.4).....-$19.6
In FY 2008, science and technology decreased (-$17.4). Also quality assurance, budgeting, and program management support to the Yucca Mountain Project and the Transportation Project are reflecting identified efficiencies (-$1.8). Systems analysis will utilize tools for modeling and simulation to ensure that systems studies and resulting impacts are assessed in an integrated approach (+$0.6).

Legacy Management

(discretionary dollars in thousands)

	FY 2006 Current Approp.	FY 2007 Congressional Request	FY 2008 Congressional Request	FY 2008 vs. FY 2007 $	FY 2008 vs. FY 2007 %
Office of Legacy Management					
Energy Supply and Conservation					
Legacy management	33,187	33,139	35,104	+1,965	+5.9%
Other Defense Activities					
Legacy management	31,848	156,790	148,063	-8,727	-5.6%
Program direction	13,518	11,061	11,000	-61	-0.6%
Use of prior year balances and other adjustments	-741	——	——	——	——
Total, Other Defense Activities	44,625	167,851	159,063	-8,788	-5.2%
Total, Office of Legacy Management	**77,812**	**200,990**	**194,167**	**-6,823**	**-3.4%**

PROGRAM DESCRIPTION

The **Office of Legacy Management** (LM) ensures the sustainable protection of human health and the environment after DOE cleanup is completed and continues management of certain retirement benefits for former contractor personnel after site closure. In FY 2008, funding for these activities is requested within the Energy Supply and Conservation (non-defense) and Other Defense Activities (defense) appropriations.

This program supports long-term stewardship activities (e.g., groundwater monitoring, disposal cell maintenance, records management, and management of natural resources) at sites where active remediation has been completed. In addition, at some sites the program includes management and administration of pension and benefit continuity for contractor retirees. The **FY 2008** budget **request** of **$194.2 million** supports these activities.

PROGRAM HIGHLIGHTS

The FY 2008 request provides $159.1 million to carry out legacy management functions for defense activities and $35.1 million for energy supply activities. In FY 2008, post closure responsibility for long-term stewardship activities and pension and benefit claims for former contractor employees at the Rocky Flats, Colorado, and the Fernald, Ohio, closure sites will be funded within the LM budget.

SIGNIFICANT FUNDING CHANGES – FY 2007 to 2008 Request ($ in millions)

Energy Supply and Conservation

Legacy Management (FY 2007 $33.1; FY 2008 $35.1) .....+$2.0
Increase reflects medical inflation for the costs of post-retirement benefits for former contractor employees.

Other Defense Activities

Legacy Management (FY 2007 $156.8; FY 2008 $148.1) .....-$8.7
Funding decrease reflects a reduction in costs of long-term surveillance and maintenance, a reduction in two sites' Employee Retirement Income Security Act (ERISA) minimum contributions to the pension fund, and a change in the method of managing pension and post

retirement benefits for contractor retirees. These reductions were partially offset by an increase in the ERISA minimum contribution for Rocky Flats contractor retirees.

Program Direction (FY 2007 $11.1; FY 2008 $11.0) .....-$0.1
No significant change. Legacy Management continues to administer its programs at a level significantly reduced from previous years.

SECTION 5. MANAGEMENT EXCELLENCE

(discretionary dollars in thousands)

	FY 2006 Current Approp.	FY 2007 Congressional Request	FY 2008 Congressional Request	FY 2008 vs. FY 2007 $	FY 2008 vs. FY 2007 %
Corporate Management					
Departmental administration	120,595	128,825	148,548	+19,723	+15.3%
Inspector General	41,580	45,507	47,732	+2,225	+4.9%
Security and Safety Performance Assurance	304,024	298,497	——	-298,497	-100.0%
Environment, Safety and Health	103,979	109,935	——	-109,935	-100.0%
Health, Safety and Security	——	——	428,358	+428,358	N/A
Hearings and Appeals	4,310	4,422	4,607	+185	+4.2%
Total, Corporate Management	**574,488**	**587,186**	**629,245**	**42,059**	**+7.2%**

Management Excellence Strategic Theme: Enabling the mission through sound management

Goal 5.1 Integrated Management – Institute an integrated business management approach throughout DOE with clear roles and responsibilities and accountability to include effective line management oversight by both federal and contractor organizations

Goal 5.2 Human Capital – Ensure that DOE's workforce is capable of meeting the challenges of the 21st Century by attracting, motivating, and retaining a highly skilled and diverse workforce to do the best job

Goal 5.3 Infrastructure – Build, modernize, and maintain facilities and infrastructure to achieve mission goals and ensure a safe and secure workplace

Goal 5.4 Resources – Institutionalize a fully integrated resource management strategy that supports mission needs and postures the Department for continuous business process improvement

Departmental Administration

(discretionary dollars in thousands)

	FY 2006 Current Approp.	FY 2007 Congressional Request	FY 2008 Congressional Request	FY 2008 vs. FY 2007 $	FY 2008 vs. FY 2007 %
Departmental Administration					
Administrative operations:					
Salaries and expenses:					
Office of the Secretary	5,399	5,539	5,787	+248	+4.5%
Board of contract appeals	648	147	——	-147	-100.0%
Chief financial officer	37,522	36,790	40,260	+3,470	+9.4%
Management	53,973	55,237	63,939	+8,702	+15.8%
Human Capital Management	17,384	22,029	28,161	+6,132	+27.8%
Chief information officer	86,302	108,822	111,107	+2,285	+2.1%
Congressional & intergovernmental affairs	4,795	4,866	4,762	-104	-2.1%
Economic impact and diversity	6,136	5,969	6,483	+514	+8.6%
General counsel	23,069	24,725	30,076	+5,351	+21.6%
Policy and international affairs	15,844	19,876	21,170	+1,294	+6.5%
Public Affairs	4,475	4,419	3,860	-559	-12.6%
Competitive sourcing initiative (A-76)	2,464	2,982	1,770	-1,212	-40.6%
Total, Administrative operations	258,011	291,401	317,375	+25,974	+8.9%
Cost of work for others	80,207	80,239	91,991	+11,752	+14.6%
Subtotal, Departmental Administration (gross)	338,218	371,640	409,366	+37,726	+10.2%
Adjustments:					
Funding from other defense activities	-86,699	-93,258	-99,000	-5,742	-6.2%
Total, Departmental Administration (gross)	251,519	278,382	310,366	+31,984	+11.5%
Miscellaneous revenues					
Revenues associated with cost of work	-80,207	-80,239	-91,991	-11,752	-14.6%
Other revenues	-50,717	-69,318	-69,827	-509	-0.7%
Total, Miscellaneous revenues	-130,924	-149,557	-161,818	-12,261	-8.2%
Total, Departmental Administration (Net)	**120,595**	**128,825**	**148,548**	**+19,723**	**+15.3%**

PROGRAM DESCRIPTION

The **Departmental Administration** (DA) appropriation funds 10 DOE-wide management organizations under **Administrative Operations**. These organizations support headquarters operations 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)

Business Line Activities	FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate
Building Occupancy	64,738	68,086	71,023
Corporate Training Services	221	607	758
Desktop	846	871	0
External Independent Reviews	0	10,545	6,975
Financial Reporting Control Assessment	0	5,000	5,000
Mail Services	2,061	2,073	2,280
Networking	5,883	6,033	6,718
Payroll and Personnel	4,413	4,427	4,501
Photocopying	2,630	2,039	2,569
Printing and Graphics	2,696	3,588	3,031
Procurement Management	964	1,080	1,058
Project Management Career Dev Program	1,100	1,000	1,000
Standard Acct and Reporting System	3,500	3,500	3,500
Supplies	2,999	2,971	2,996
Telephones	8,832	8,702	8,689
Indirect	120	120	120
Total Working Capital Fund	101,003	120,642	120,218

PROGRAM HIGHLIGHTS

The FY 2008 request provides $5.8 million for 34 FTEs within the Office of the Secretary. This request also provides $311.59 million for salaries and benefits, travel, contractual services, and program support expenses for 1,181 FTEs for the other organizations within the DA account. The Cost of Work for Others and Revenues activities are budgeted at $91.9 million and -$161.8 million, respectively. Within the request for Cost of Work for Others is $40 million for safeguards and security activities in FY 2008.

SIGNIFICANT FUNDING CHANGES – FY 2007 to 2008 Request ($ in millions)

Chief Financial Officer (FY 2007 $36.8; FY 2008 $40.3) .....+$3.5
Increase supports 236 FTEs and reflects cost of living adjustments (+$2.8). Increase also reflects the costs for CFO participation in interagency and intra-agency initiatives (+$0.1); increased working capital fund expenses due to GSA rental (+$0.3) and increased training costs (+$0.3).

Office of Management (FY 2007 $55.2; FY 2008 $63.9).....+$8.7
Increase reflects the transfer of the Foreign Travel and Exchange Visitor Program from the Office of Security and Safety Performance Assurance (3 FTEs; +$1.1) and the transfer of activities from the former Office of Environment, Safety and Health (16 FTEs; +$4.1). Increases in support services, largely due to the award of the Logistics A-76 contract and

increases in other related expenses due to a target transfer received from the Office of the Chief Information Officer and increased working capital fund expenses (+$3.5)

Office of Human Capital Management (FY 2007 $22.0; FY 2008 $28.2) .....+$6.2
Increase supports 161 FTEs and reflects cost of living adjustments (+$1.1). The increase also provides for the doubling of the DOE-wide Corporate Intern Program (+$2.3) to improve the Department's capability to address future staffing needs by establishing a talent pipeline and restores full funding to key mission-related services (+$2.8).

Office of the Chief Information Officer (FY 2007 $108.8; FY 2008 $111.1) .....+$2.3

Corporate Management Information Program increase supports modernization of the Department's Headquarters voice and data network infrastructure (+$5.0), ongoing work required to support operational status of STARs and IDW interfaces for financial transaction processing and ongoing development of the Strategic Integrated Procurement Enterprise System (STRIPES). Funding also provides for the development of collaboration tools needed to support corporate systems under development in the I-Manage program (+$0.5).
(FY 2007 $22.9; FY 2008 $28.4) .....+$5.5

Cyber Security decrease reflects changes in the Department strategy for implementation of user authentication and authorization technologies (-$6.2) partially offset by increases in the corporate asset management inventory of agency information systems (+$0.9); technology and assessments (+$1.2); and incident management and compliance (+$1.1).
(FY 2007 $38.2; FY 2008 $35.2) .....-$3.0

General Counsel (FY 2007 $24.7; FY 2008 $30.1).....+$5.4
Increase will support 154 FTEs and reflects cost of living adjustments. Increase also reflects the addition of NEPA Policy and Compliance activities (14 FTEs; +$4.0) transferred from the former Office of Environment, Safety and Health, additional support services for alternate dispute resolution, information technology services and increased working capital fund expenses.

Competitive Sourcing Initiative (FY 2007 $3.0; FY 2008 $1.8) .....-$1.2
Decrease is the result of the maturing of the DOE Competitive Sourcing program. DOE has completed eight studies and developed and finalized policies and procedures for a successful program. The Department still has funding needs for successful implementation of the new organizations resulting from these competitions. Based on lessons learned in the implementation of completed studies, funds are needed regardless of the eventual winner (MEO or contractor) of future A-76 competitions.

Board of Contract Appeals (FY 2007 $0.1; FY 2008 $0).....-$0.1
Decrease reflects the consolidation of the agency Boards of Contract Appeals into one. DOE's Board of Contract Appeals transferred to the new Civilian Board of Contract Appeals established at the General Services Administration on January 6, 2007.

All Other Departmental Administration Offices (FY 2007 $40.7; FY 2008 $42.1) .....+$1.4
Increase in remaining DA support accounts are the result of cost of living adjustments.

Revenues (FY 2007 -$149.6; FY 2008 -$161.8).....-$12.2
Additional revenues cover increased support for work conducted with state and local government and non-profit organizations, primarily California investor owned utilities, urban water districts and work being conducted at various universities and institutes. Increase also covers increased collaborations between Oak Ridge National Laboratory and state and local governments, 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 2007 -$93.3; FY 2008 -$99.0) .....-$5.7
Change reflects the proportional contribution from the Other Defense Activities appropriation for DA costs. FY 2008 funding represents 31 percent of DA administrative costs, which is the approximate level of defense related activities in the FY 2008 request (not including NNSA).

Inspector General

(discretionary dollars in thousands)

	FY 2006 Current Approp.	FY 2007 Congressional Request	FY 2008 Congressional Request	FY 2008 vs. FY 2007 $	FY 2008 vs. FY 2007 %
Office of Inspector General	**41,580**	**45,507**	**47,732**	**+2,225**	**+4.9%**

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 and the Federal Energy Regulatory Commission, 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 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. The total **FY 2008 request** for the Office of Inspector General is **$47.7 million**.

PROGRAM HIGHLIGHTS

The FY 2008 request supports statutory requirements including work associated with the Federal Information Systems Management Act 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 six key management initiatives, and the most serious management challenges facing the Department.

SIGNIFICANT FUNDING CHANGES – FY 2007 to 2008 Request ($ in millions)

Inspector General (FY 2007 $45.5; FY 2008 $47.7) .....+$2.2
Increase reflects raised cost in support services due to additional tasks associated with the Financial Statement Audits contract. In addition, funding provides continued support for 279 FTEs and includes the effect of the FY 2008 pay raise.

Health, Safety and Security

(discretionary dollars in thousands)

	FY 2006 Current Approp.	FY 2007 Congressional Request	FY 2008 Congressional Request	FY 2008 vs. FY 2007 $	FY 2008 vs. FY 2007 %
Office of Health Safety and Security					
Energy Supply and Conservation					
Environment Safety and Health (non-defense)	27,720	29,121	——	-29,121	-100.0%
Other Defense Activities					
Security and Safety Performance Assurance	304,024	298,497	——	-298,497	-100.0%
Environment Safety and Health (defense)	76,259	80,814	——	-80,814	-100.0%
Health, safety and security	——	——	329,305	+329,305	N/A
Program direction	——	——	100,043	+100,043	N/A
Use of prior year balances	——	——	-990	-990	N/A
Total, Other Defense Activities	380,283	379,311	428,358	+49,047	+12.9%
Total, Office of Health Safety and Security	**408,003**	**408,432**	**428,358**	**19,926**	**+4.9%**

PROGRAM DESCRIPTION

On October 1, 2006, the Secretary of Energy integrated DOE Headquarters functions for health, safety, environment, and security to demonstrate the Department's commitment to maintain a safe and secure work environment for all Federal and contractor employees and the surrounding communities, and stress the importance of delineating clear roles and responsibilities and line management accountability for these programs. The request represents the combination of the Environment, Safety, and Health program from the Energy Supply and Conservation and Other Defense Activities appropriations and Security and Safety Performance Assurance program from the Other Defense Activities appropriation. The resulting **Health, Safety and Security** (HSS) program strengthens the Department's health, safety, environment and security functions by providing a focused and integrated corporate-level analysis of Departmental operating experience and identifying problem areas to provide the foundation for effective line management implementation of Department-wide solutions in the subject areas of safety, health, environment, and security. The Chief Health, Safety and Security Officer advises the Deputy Secretary and the Secretary on all matters related to health, safety, and security across the complex. HSS integrates worker health, safety, environment, and security functions to address crosscutting Departmental issues, increase collaboration and sharing of technical expertise, and increase accountability for worker health, safety, and security responsibilities. The total **request** for the program in **FY 2008** is **$428.4 million.**

PROGRAM HIGHLIGHTS

Health and Safety Activities ensure that DOE workers, the public, and the environment are adequately protected from the hazards of DOE activities. Policies and standards applied at DOE facilities reasonably assure that personnel and property are afforded at least the same level of protection as that in the private sector. Corporate functions provide for accrediting environmental and radiological laboratories used by DOE sites for regulatory compliance and employee monitoring programs, maintaining radiological standards used to calibrate personnel radiation monitors, producing annual occupational radiation exposure and other radiological and environmental reports, and enforcing worker safety and health programs. Other programs include the DOE Voluntary Protection Program, that ensures health and safety programs are maintained or continue to improve resulting in safe working environments; and environmental management system implementation to support site-specific programs and identification of opportunities for continuous improvement of

environmental performance and pollution prevention efforts. Health Programs support domestic health studies including the Former Worker Program, a nationwide program of medical screening to identify work related health effects, and other studies to investigate and identify work related injury and illness for DOE workers and populations surrounding DOE sites. International health studies are conducted to support radiation health effects research in Japan, the Marshall Islands, Russia, and Spain. The Employees Compensation Program supports implementation of the Energy Employees Occupational Illness Compensation Program Act by providing the records and information needed to support claims filed by DOE contractor employees to the Department of Labor.

Security Activities provide for security policy development, interpretation, and guidance; the development and conduct of security and safety training; the deployment of new security technologies; and development and management of the Department's classification, declassification, and controlled information program. Support is also provided for specialized security activities, security issues and incidents tracking; nuclear materials accountability; foreign visits, assignments; and foreign ownership, control or influence, and security enforcement programs. Funding provides for background investigations conducted by the Federal Bureau of Investigation and the Office of Personnel Management to provide access authorizations to DOE federal and contract personnel who require access to classified information or special nuclear material; and the centralized management of access authorizations (clearances) data. The program provides operational support to DOE Headquarters by managing the physical protection and security of DOE facilities and information in the National Capital Area.

Program Direction provides the federal staffing, support services, and other resources and associated costs required to provide overall direction and execution of HSS activities. Program Direction provides for the **Independent Oversight** activity which provides accurate, comprehensive analysis of the effectiveness of DOE nuclear safeguards and security; cyber security; and environment, safety and health programs to senior DOE leadership. In addition, support is provided for the centralized leadership in resolving **Defense Nuclear Facilities Safety Board** issues.

SIGNIFICANT FUNDING CHANGES – FY 2007 to 2008 Request ($ in millions)

The FY 2008 Health Safety and Security budget request is $428.4 million, an increase of $19.9 million, or 4.9 percent above the FY 2007 request for the combined activities prior to reorganization.

Environment, Safety & Health (non-defense) (FY 2007 $29.1; FY 2008 $0) .....-$29.1
Decrease reflects realignment to HSS in FY 2008.

Environment, Safety & Health (defense) (FY 2007 $80.8; FY 2008 $0).....-$80.8
Decrease reflects realignment to HSS in FY 2008.

Security and Safety Performance Assurance (FY 2007 $298.5; FY 2008 $0).....-$298.5
Decrease reflects realignment to HSS in FY 2008.

Health, Safety and Security (FY 2007 $0; FY 2008 $329.3).....+$329.3
Increases in Nuclear Safeguards and Security partially offset by a decrease in Corporate Safety, and transfers out of the combined organization, including New Brunswick Laboratory (NBL), Radiological and Environmental Sciences Laboratory (RSL) and NEPA activities.

Program Direction (FY 2007 $0; FY 2008 $100.0) ..... +$100.0
Overall program direction decreases relative to the sum of the original components due to transfers of personnel and associated funding out of the combined organization to Office of the Administrator, Environmental Management and the Office of the General Counsel.

Use of Prior-Year Balances (FY 2007 $0; FY 2008 -$1.0) ..... -$1.0
Decrease reflects the use of prior-year balances.

Hearings and Appeals

(discretionary dollars in thousands)

	FY 2006 Current Approp.	FY 2007 Congressional Request	FY 2008 Congressional Request	FY 2008 vs. FY 2007 $	FY 2008 vs. FY 2007 %
Office of Hearings and Appeals					
Other Defense Activities					
Program direction	**4,310**	**4,422**	**4,607**	**+185**	**+4.2%**

PROGRAM DESCRIPTION

The **Office of 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 Act 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. Funding for this program is included in the Other Defense Activities Appropriation. The total **FY 2008 request** for the Office of Hearings and Appeals is **$4.6million**.

SIGNIFICANT FUNDING CHANGES – FY 2007 to 2008 Request ($ in millions)

Hearings and Appeals (FY 2007 $4.4; FY 2008 $4.6) .....+$0.2
FY 2008 request supports salaries and benefits for 25 FTEs. Increase provides for escalation due to the FY 2008 pay raise.

SECTION 6. FEDERAL ENERGY REGULATORY COMMISSION

	FY 2006 Current Approp.	FY 2007 Congressional Request	FY 2008 Congressional Request	FY 2008 vs. FY 2007 $	FY 2008 vs. FY 2007 %
Federal Energy Regulatory Commission					
Federal energy regulatory commission	220,400	230,800	255,425	+24,625	+10.7%
FERC revenues	-220,400	-230,800	-255,425	-24,625	-10.7%
Total, Federal Energy Regulatory Commission	——	——	——	——	——
Excess fees and recoveries, FERC					
Fees & recoveries in excess of annual appropriations	-50,015	-19,221	-17,462	+1,759	+9.2%
Total, Federal Energy Regulatory Commission	**-50,015**	**-19,221**	**-17,462**	**+1,759**	**+9.2%**

PROGRAM DESCRIPTION

The **Federal Energy Regulatory Commission** (FERC) regulates and oversees energy industries in the economic, environmental, and safety interests of the American public. The FERC seeks to encourage competitive markets whenever possible, assure access to abundant, reliable energy, promote the development of a strong energy infrastructure, and prevent market manipulation.

In carrying out its core duties to protect wholesale power customers and transmission customers from unjust and unreasonable rates and from undue discrimination and preference, the FERC relies on competition and effective regulation. To accomplish this, the FERC promotes the development of a strong energy infrastructure. This includes stimulating appropriate infrastructure development and maintaining a reliable and safe infrastructure. The FERC also supports competitive markets by developing rules that encourage fair and efficient competitive markets and by preventing the accumulation and exercise of market power. Lastly, the FERC prevents market manipulation through vigilant oversight and firm, but fair, enforcement of FERC rules.

PROGRAM HIGHLIGHTS

The FERC's priorities include implementing Energy Policy Act of 2005 (EPAct 2005) requirements along with other reliability and enforcement efforts. In addition to rate policies that provide investors confidence (through rate certainty) that they will have an opportunity to recover their infrastructure investments, EPAct 2005 enhances the FERC's authority with regard to:

- Electric and natural gas market transparency;
- Wholesale competition in the electric industry;
- New electric, natural gas, and hydropower infrastructure;
- Penalty authority related to fraud in energy market transactions; and
- Development and enforcement of mandatory grid-reliability standards.

A strong energy infrastructure is critical to the health of the U.S. economy. The FERC's rate policies, consistently applied to infrastructure projects, must give investors confidence that they will have an opportunity to recover their investment costs. Additionally, the FERC, consistent with a directive in EPAct 2005, issued a final rule which offers incentives for potential investors. The pricing reform seeks to bolster the nation's aging transmission infrastructure, promote electric power reliability, and lower costs for consumers by reducing transmission congestion.

To guard against transmission and generation market power, the FERC's landmark Order No. 888, issued in 1996, required all jurisdictional public utilities to offer non-discriminatory open access transmission service pursuant to a FERC-approved tariff. In 2006, the FERC proposed to reform public utilities' open access transmission tariffs to promote greater transparency and further guard against undue discrimination and preference in transmission service.

The FERC acts to ensure just and reasonable rates by preventing market discrimination and manipulation through a combination of regulation and competition. This involves both regulatory reform, such as the on-going open access transmission tariff reform, and vigilant market oversight and enforcement. The FERC ensures that its market, reliability, and other regulatory rules are clear, enforceable and fully understood by the regulated entities. However, the obligation to comply with those rules lies with the regulated entity itself. As part of its overall enforcement program, the FERC works with companies to develop and maintain good compliance programs and promotes self-reporting of violations. The FERC's enforcement tools were greatly reinforced when EPAct 2005 conferred expanded authority which provided, for the first time, penalty authority for violations of the Natural Gas Act and all of Part II of the Federal Policy Act. It further provided or increased (for violations of the Natural Gas Policy Act) the level of penalties to $1 million each day for the duration of the violation. Penalties of this magnitude are applicable to any entity (not just companies traditionally subject to the FERC's jurisdiction) that manipulates wholesale gas or electric markets by engaging in fraud or deceit in connection with jurisdictional transactions.

SIGNIFICANT FUNDING CHANGES – FY 2007 to FY 2008 Request ($ in millions)

FERC (FY 2007 $227.3; FY 2008 $255.4).....+$28.1
FY 2008 request funds 1,370 FTEs which will support the FERC in its reliability and enforcement efforts as well as the continued implementation of additional authorities under EPAct 2005. 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 2008.

Note.—A regular 2007 appropriation for this account had not been enacted at the time the budget was prepared; therefore, this account is operating under a continuing resolution (P.L. 109–289, as amended). The amounts shown for 2007 reflect the levels provided by the continuing resolution.