# Office of Energy Efficiency and Renewable Energy

(discretionary dollars in thousands) FY 2005 FY 2006 FY 2007 FY 2007 vs. FY 2006 Current Current Congressional Request Approp. Approp. **Energy Efficiency and Renewable Energy Energy Supply** Hydrogen technology..... 166,772 155,627 195.801 +40,174 +25.8% Biomass and biorefinery systems R&D..... 87,471 90,718 149,687 +58,969 +65.0% 84,255 +65,259 83,113 148,372 +78.5% Solar energy..... Wind energy..... 40.631 38.857 43,819 +4.962 +12.8% Geothermal technology..... 25,256 23,066 -23,066 -100.0% 4,880 495 -495 -100.0% Hvdropower..... 161,326 182,104 166,024 -16,080 -8.8% Vehicle technologies..... Building technologies..... 65,155 69,266 77,329 +8,063 +11.6% Industrial technologies..... 73.371 56.855 45.563 -11,292 -19.9% Distributed energy resources..... 59,069 -2.068 19,882 18.974 16,906 -10.9% Federal energy management program..... Facilities and infrastructure..... 11,389 26,052 5,935 -20,117 -77.2% Weatherization and intergovernmental activities 228,160 242,550 164,198 -78,352 -32.3% Weatherization assistance grants..... 44,176 35,640 49,457 +13,817 +38.8% State energy program grants..... 2,320 495 -495 -100.0% State energy activities..... 25,400 -25.400 -100.0% Gateway deployment..... 33,930 2,473 -1,398 International renewable energy program..... 6.449 3,871 -36.1% 5.457 3.960 3.957 -3 -0.1% Tribal energy activities..... Renewable energy production incentive..... 4,960 4,950 4,946 -4 -0.1% -91.835 Total, Weatherization and intergovernmental activities..... 325,452 316.866 225.031 -29.0% 98,215 98,529 91,024 -7,505 -7.6% Program direction..... 16,837 13,321 10,930 -2,391 -17.9% Program support..... 1,239,961 1,176,421 +2,578 +0.2% Subtotal, Energy Efficiency and Renewable Energy..... 1,173,843 Use of prior year balances and other adjustments..... -5.6481,173,843 1,176,421 +2,578 +0.2% 1,234,313 Total, Energy Efficiency And Renewable Energy.....

The FY 2007 **Office of Energy Efficiency and Renewable Energy** budget request is \$1,176.4 million, an increase of \$2.6 million, or 0.2%, above the FY 2006 appropriation. The FY 2007 budget increases funding for programs that help decrease our nation's dependence of foreign oil and help meet the growing demand for electricity.

#### Hydrogen Technology (\$195.8 million)

• Funding proposed for the Hydrogen Program supports the President's Hydrogen Fuel Initiative that will enable an industry decision on the commercialization of hydrogen power fuel cell vehicles and infrastructure by 2015. If this decision is positive, consumers could choose to buy hydrogen fuel cell vehicles in 2020.

#### **Vehicle Technologies (\$166.0 million)**

• While continuing support for FreedomCAR and 21<sup>st</sup> Century Truck activities, proposed funding accelerates R&D on advanced plug-in hybrid electric vehicles (PHEVs) with petroleum reduction potentials significantly greater than that achievable with standard hybrids. By utilizing energy drawn from the Nation's electricity grid to charge high energy batteries, these PHEVs will be able to operate in an electric vehicle mode for expanded distances – potentially meeting most drivers' needs for commuting and short distance driving.

#### Biomass and Biorefinery Systems R&D (\$149.7 million)

• Proposes the **Biofuels Initiative** that will enable future biorefineries to displace 30% of today's gasoline consumption by ethanol by 2030. To achieve this goal, ethanol must be produced from a variety of biomass domestic resources. The initiative will make it possible for more ethanol to be produced from the cellulosic biomass found in agricultural crops and residues, woody plants and grasses.

#### Solar Energy (\$148.4 million)

Begins the Solar America Initiative that will promote deployment of 5-10 gigawatts of new grid-connected electricity generating capacity by 2015; enough to power roughly 1-2 million homes. The accelerated R&D effort will focus on PV technology pathways that have the greatest potential to lower costs and improve performance. New Industry-led R&D partnerships, known as "Technology Pathway Partnerships," will be funded to aggressively address the issues of cost, performance and reliability associated with each technology pathway.

#### **State Energy Program Grants (\$49.5 million)**

• The State Energy Program provides financial assistance through formula grants to States, enabling state governments to target their own high priority energy needs and expand clean energy choices for their citizens and businesses. The increase from FY 2006 will help states improve emergency preparedness and help reduce the impact of energy market volatility.

#### Weatherization Assistance Grants (\$164.2 million)

• The FY 2007 request will result in approximately 64,000 low-income homes weatherized. This is a decrease of \$78.4 million from \$242.6 million in FY 2006. Facing greater uncertainty over the price of petroleum as well as constrained Federal budgets, very tough choices were made by the Department in developing the FY 2007 budget request. Reducing America's growing reliance on foreign oil is the highest priority for the Office of Energy Efficiency and Renewable Energy in FY 2007 and will ultimately benefit all Americans.

# **Environment, Safety and Health**

(discretionary dollars in thousands) FY 2005 FY 2007 FY 2006 FY 2007 vs. FY 2006 Congressional Current Current Approp. Request Approp. Office Of Environment, Safety And Health **Energy Supply and Conservation** 7.936 7,029 9,128 +2,099 +29.9% Office of environment, safety and health (non-defense)..... -3.4% 20,691 Program direction..... 19,842 19,993 -698 27,778 27,720 29,121 +1,401 +5.1% Subtotal, Energy Supply and Conservation..... Use of prior year balances and other adjustments..... -285 27,493 27,720 29.121 +1,401 +5.1% Total, Energy Supply and Conservation..... Other Defense Activities 108.352 56.908 60.738 +3.830 +6.7% Environment, safety and health (defense)..... 19,351 20,076 +725 +3.7% Program direction..... 20,251 +4,555 +6.0% Subtotal, Other Defense Activities..... 128.603 76,259 80.814 -15.000 Use of prior year balances and other adjustments..... +6.0% 76,259 80,814 +4,555 Total, Other Defense Activities..... 113,603 103,979 109,935 +5.956 +5.7% 141,096 Total, Environment, Safety And Health.....

The FY 2007 **Environment, Safety and Health** request is \$109.9 million, approximately 6% above the FY 2006 appropriation. This program directly supports the mission of DOE to ensure that the safety and health of the DOE workforce and members of the public and the protection of the environment are integrated into all DOE activities.

#### Non-Defense (\$29.1 million)

Develop and maintain a stable and predictable safety infrastructure by establishing DOE policies and
expectations that help ensure safe and secure workplaces, and protect the public and the environment across
the complex. The program will also provide for the overall direction and support for the Energy Supply and
Conservation account programs to ensure that all operations are conducted in the most efficient and effective
manner.

#### Other Defense Activities (\$80.8 million)

- This program consists of DOE's Health programs, Corporate Safety programs, and the Employee
   Occupational Illness Compensation Program. This program also provides for the overall direction and
   support for the Other Defense Activities account programs.
  - Health Programs Promotes the health and safety of DOE's workers and communities surrounding DOE sites, develops comprehensive and effective safety and health policy for DOE workplace hazards, and conducts studies and medical screening to understand the effects of radiation, chemical, and other potential hazards of DOE operations on humans (\$40.6 million). This program consists of three subprograms: Radiation Effects Research Foundation (\$13.8 million), Marshall Islands (\$6.0 million), and Other Health programs (\$20.7 million).
  - Corporate Safety Programs A crosscutting safety function for the Department and its stakeholders in
    assuring excellence and continuous improvement in environment, safety, and health in the conduct of its
    missions and activities. Elements that comprise Corporate Safety programs are: Performance
    Assessment, Quality Assurance programs, the new Nuclear Safety Research program, Facility Safety
    program, Integrated Safety Management, Price Anderson Enforcement, and Information Management.
    (\$15.6 million)
  - Employee Occupational Illness Compensation Program (EOICP) In FY 2005, Congress passed the Ronald W. Reagan National Defense Authorization Act, P.L. 108-375. This legislation directed that Part D of the original EOICP Act be repealed and established Part E under authorities granted to the Department of Labor. In FY 2007, DOE will continue to support the Department of Labor's implementation of Part E by conducting record search activities in the field, as well as continue to support Part B of the EOICP at the Department of Labor (\$4.5 million).

# **Environmental Management**

(discretionary dollars in thousands) FY 2005 FY 2006 FY 2007 Current Current Congressional FY 2007 vs. FY 2006 \$ % Approp. Approp. Request 41,322 33,985 28,272 -5,713 -16.8% Brookhaven National Laboratory..... Hanford Site Richland ..... 1,028,733 899,860 917,395 +17,535 +1.9% +13.8% Office of River Protection ..... 1,059,240 846,946 964,127 +117,181 2,087,973 1,746,806 1,881,522 +134,716 +7.7% Subtotal, Hanford Site..... Idaho National Laboratory..... 534,060 538,083 519,604 -18,479 -3.4% 537,416 514,436 494,224 -20,212 -3.9% Oak Ridge ..... 165,166 140,483 -24.683 -14.9% Paducah Gaseous Diffusion Plant ..... 159,524 286,809 239,177 -46,845 -16.4% Portsmouth Gaseous Diffusion Plant ..... 286.022 1.427.433 1.314.099 1,248,020 -66.079 -5.0% Savannah River ..... 231,830 232,512 217,602 -14,910 -6.4% Waste Isolation Pilot Plant..... -4.0% 78,111 75,000 West Valley..... 74,123 -3,111 **Closure Sites** 8.752 15.841 295 -15,546 -98.1% Ashtabula..... 9,405 -9.405 -100.0% Columbus..... 21,190 268.789 325,721 -56.932 -17.5% 323,695 Fernald 46,069 -58,409 -55.9% 112,117 104,478 Mound (Miamisburg)..... 662,134 567,682 7,000 -560,682 -98.8% Rocky Flats ..... 1,127,888 1,023,127 322,153 -700,974 -68.5% Subtotal, Closure Sites..... **NNSA Sites** 3,478 4,481 -4.481 -100.0% Kansas City Plant..... Lawrence Livermore National Laboratory....... 62,717 29,828 11,950 -17,878 -59.9% 116,999 141,277 91,627 -49,650 -35.1% Los Alamos National Laboratory..... -4,509 79,668 -5.4% 95,900 84,177 Nevada Test Site..... 2,818 -2,818-100.0% Nevada (Off-sites)..... 19,458 +4,268 +21.9% Pantex Plant..... 24.016 23,726 -9,672 20,084 9.672 -100.0% Sandia National Laboratory..... 24,500 +18,023 +278.3% Separations Process Research Unit..... 5,451 6,477 298,188 231,471 -66,717 -22.4% 328,645 Subtotal, NNSA Sites..... Other Sites 1,779 10,382 10,726 +344 +3.3% Argonne National Laboratory..... 8,910 +7,090 +79.6% Energy Technology Engineering Center..... 18,238 16,000 2,931 487 302 +2,629 +870.5% Inhalation Toxicology Laboratory..... Lawrence Berkeley National Laboratory..... -3,861 -100.0% 4,038 3,861 22,865 7,711 27,726 -4,861 -17.5% Moab Site..... South Valley..... 1,800 2,480 3.465 5.720 +2,255 +65.1% Stanford Linear Acceleration Center..... -3.3% 4.645 1.843 1,782 -61 Misc Sites +5,606 +17.4% Headquarters..... 24,892 32,275 37,881 +9,141 +10.3% Subtotal, Other Sites..... 88,764 97,905 66,070 29,765 21,389 -8,376 -28.1% Technology Development and Deployment.... 58,207 +20.6% Program Direction ..... 270,016 241,386 291,216 +49.830 +5,510 +1.2% 452,000 D&D Fund Deposit ..... 459,296 446,490 79,360 19.800 20,000 +200 +1.0% Uranium/Thorium Reimbursements..... 7,056,740 6.280.038 -776,702 -11.0% Subtotal, Environmental Management ..... 7,769,972 Use of prior year balances..... -34,365 -143 Less security charge for reimbursable work...... Salt waste processing facility PY balances -20,000 UED&D Fund Offset..... 459,296 -452,000 -446,490 -762,212 -11.6% Total, Environmental Management..... 7,276,168 6,590,250 5.828.038

The FY 2007 **Environmental Management** budget request is \$5,828.0 million, a decrease of \$762 million or 12% below the FY 2006 appropriation, primarily due to the completion and closure of Rocky Flats in Colorado and several other sites. The program conducts 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

<sup>\*</sup> Site totals include funding for Safeguards and Security activities

cleanup includes safe management and disposition of nuclear materials and spent nuclear fuel, treatment and disposal of high-level and other radioactive wastes, remediation of contaminated soil and groundwater, and decontamination and decommissioning of contaminated facilities. Congressionally-directed projects included in FY 2006 total \$105.8 million; no funds are requested in FY 2007 for these projects.

#### **Brookhaven National Laboratory (\$28.3 million)**

 Primarily funds decontamination and decommissioning activities for the Graphite Research Reactor and High Flux Beam Reactor.

#### Hanford Site/Richland (\$917.4 million)

Supports increases for spent nuclear fuel disposition at K Basins and the River Corridor Project for the
disposition of contaminated buildings and remediation of contaminants along the Columbia River, while safely
maintaining the Plutonium Finishing Plant and the Fast Flux Test Facility. Includes \$77.8M for safeguards
and security activities.

#### Hanford Site/River Protection (\$964.1 million)

Provides \$690M to ramp up construction of key components of the Waste Treatment and Immobilization
 Plant, and continues safe management of underground tanks and waste retrievals from single shell tanks.

#### Idaho National Laboratory (\$519.6 million)

 Increases funding for Advanced Mixed Waste Treatment Project to support shipments of transuranic waste to the Waste Isolation Pilot Plant, supports construction of the Sodium Bearing Waste Facility to treat tank waste, and continues D&D of reactors and retrievals of buried waste and other remediation activities.

#### Oak Ridge Reservation (\$494.2 million)

Supports cleanup of Oak Ridge National Laboratory, Y-12, and East Tennessee Technology Park (ETTP), including processing of transuranic waste, remediation activities and D&D of facilities. Increase for ETTP reflects progress on the critical path to closure. Includes \$22.9M for safeguards and security at ETTP.

#### Paducah Gaseous Diffusion Plants (\$140.5 million)

Provides for continuing cleanup at Paducah, including completion of scrap metal removal. Funds ongoing
construction of the Depleted Uranium Hexafluoride Conversion facility, along with storage of cylinders
pending conversion. Includes \$8.7M for safeguards and security.

#### Portsmouth Gaseous Diffusion Plants (\$239.2 million)

Continues transition of the Gaseous Diffusion Plant to D&D and ongoing cleanup at the Portsmouth site.
 Supports procurement of on-site treatment to address problematic waste streams. Funds ongoing construction of the Depleted Uranium Hexafluoride Conversion facility, along with storage of cylinders pending conversion. Includes \$15.6M for safeguards and security.

#### Savannah River Site (\$1.248.0 million)

 Supports ongoing stabilization of nuclear materials, including funding for container surveillance capability to support on-site consolidated storage of the site's plutonium in K-Area. Provides for management and disposition of tank waste, including funding for design and construction of the Salt Waste Processing Facility to address technical issues, as well as remediation activities to meet compliance requirements. Includes \$163.6M for safeguards and security, an increase that supports additional protective force and upgrades to the K-Area complex to support on-site consolidation of the Savannah River Site's nuclear materials.

#### Waste Isolation Pilot Plant (\$217.6 million)

• Supports transuranic waste disposal operations and complex-wide integration, including the first full year of remote-handled waste disposal. Includes \$4.3M for safeguards and security.

#### West Valley Demonstration Project (\$75.0 million)

 Supports continuing decommissioning activities, preparation of the EIS for decommissioning and/or long-term stewardship, and maintaining safe storage of high level waste canisters and transuranic waste. Includes \$1.6M for safeguards and security.

#### Closure Sites (\$322.2 million)

 Decrease of almost \$700M reflects the accelerated completion of cleanup and closure of several significant sites, including Rocky Flats in Colorado, and Fernald and Columbus in Ohio. Post-closure responsibilities for these sites will transfer to the Office of Legacy Management in FY 2007. Includes \$1.2M for safeguards and security at Fernald.

#### National Nuclear Administration Security Sites (\$231.5 million)

Supports ongoing cleanup of legacy waste and contamination at Los Alamos National Laboratory, Nevada
Test Site, Pantex Plant, and Lawrence Livermore-Site 300. Increases funding to begin active cleanup at
Separations Process Research Unit. Decrease at Los Alamos reflects a shift in strategy to address
groundwater concerns and includes an increase to begin facility decontamination and demolition in Technical
Area 21.

#### Other Sites (\$97.9 million)

Supports remediation activities at Moab site (\$22.8M), including the expansion of groundwater remedial
actions. Provides for technical support and complex-wide initiatives at Headquarters. Supports ongoing
decommissioning at Argonne National Laboratory-East and remediation at Energy Technology Engineering
Center to complete cleanup in 2009.

#### Program Direction (\$291.2 million)

Provides salaries and benefits and other support for federal personnel, totaling 1,495 FTEs. Includes an
increase to address skill gaps in areas such as project management and procurement.

# **Fossil Energy**

(discretionary dollars in thousands) FY 2005 FY 2006 FY 2007 FY 2007 vs. FY 2006 Current Current Congressional % Request Approp. Approp. Fossil energy programs Clean coal technology..... -160,000 -20,000 +20,000 +100.0% 592.014 560.852 469.686 -122.328 -20.7% Fossil energy research and development..... 21,285 Naval petroleum and oil shale reserves..... 17,750 18,810 -2,475-11.6% Elk Hills school lands fund..... 36,000 84,000 -84,000 -100.0% -51,910 Strategic petroleum reserve..... 126,710 207,340 155,430 -25.0% 4,950 Northeast home heating oil reserve..... 4.930 +4,950 N/A 43,000 -43,000 +43,000 +100.0% Strategic petroleum account...... 648,876 Total, Fossil energy programs..... 629.242 841,639 -192,763 -22.9%

The FY 2007 **Fossil Energy** budget request is \$648.9 million, a reduction of \$192.8 million or 23% below the FY 2006 appropriation. The program manages Clean Coal Technology, Fossil Energy Research and Development, Naval Petroleum and Oil Shale Reserves, Elk Hills School Lands Fund, Strategic Petroleum Reserve, Northeast Home Heating Oil Reserve, and the Strategic Petroleum Account. Each of these activities is in a separate appropriation account.

#### Clean Coal Technology (\$0)

 The budget proposes to transfer \$54 million in FY 2007 to the Fossil Energy Research and Development program for work on FutureGen. The budget also proposes an advanced appropriation of \$203 million for this project in FY 2008 and beyond, which will be derived from rescinding prior-year balances no longer required to complete projects in the Clean Coal Technology program.

#### Fossil Energy Research and Development (\$470.0 million)

- The FY 2007 budget emphasizes technologies aimed at supporting the President's initiatives and priorities in **coal** research (\$330.1 million): Clear Skies, Climate Change, Hydrogen, Clean Coal Power Initiative, and FutureGen. This request continues to carry out the President's commitment to invest \$2 billion in clean coal research over 10 years.
- The FY 2007 budget proposes to terminate the oil and gas research programs. It was determined that at today's oil and gas prices, industry has the capacity to pursue this research and there is not a need for taxpayers to subsidize oil companies in these efforts. (-\$64.4 million).
- The budget includes \$4.6 million to support Alaska Natural Gas Pipeline activities enacted in October 2004. The funding will support the Office of the Federal Coordinator (\$2.3 million) and the Loan Guarantee program (\$2.3 million). Construction of this pipeline has the potential to meet about 8 percent of the U.S. daily natural gas needs.

#### Naval Petroleum and Oil Shale Reserves (\$18.8 million)

 The Naval Petroleum and Oil Shale Reserves will continue environmental and remediation activities and determine the equity finalization of NPR-1, and operate NPR-3 while supporting the Rocky Mountain Oilfield Testing Center as a field testing facility.

#### Elk Hills School Lands Fund (\$0)

• No funding is requested, pending the outcome of the equity finalization process.

#### Strategic Petroleum Reserve (\$155.4 million)

The FY 2007 budget requests continued storage of petroleum to reduce the adverse economic impact of a
major supply interruption to the United States and to carry out obligations under the international energy
program. In FY 2006 a major shift occurs to provide for a return of \$43.0 million from the SPR Petroleum Oil

Acquisition Account to this account. In addition NEPA efforts will be completed to meet the Energy Policy Act's deadline for site selection for a 1-billion-barrel SPR.

#### Northeast Home Heating Oil Reserve (\$5.0 million)

• Continues to maintain a 2-million-barrel reserve of home heating oil at four locations in the U.S. Northeast.

#### Strategic Petroleum Account (\$0)

• The cost of the FY 2005 Strategic Petroleum Reserve drawdown of 11 million barrels of oil was financed by a transfer of \$43.0 million from the Strategic Petroleum Reserve and resulted in receipts of \$614.0 million. These receipts will be used to return the drawdown financing and repurchase oil in FY 2006 for the Reserve.

# **Legacy Management**

(discretionary dollars in thousands) FY 2005 FY 2006 FY 2007 Congressional FY 2007 vs. FY 2006 Current Current Request \$ % Approp. Approp Office Of Legacy Management **Energy Supply and Conservation** 30,883 33,187 33,139 -48 -0.1% Legacy management..... Use of prior year balances (LM)..... -266 -0.1% 33,187 33,139 Total, Energy Supply and Conservation....... Other Defense Activities +404.0% +125,683 Legacy management... 33,425 31,107 156,790 Program direction..... 13,095 13,518 11,061 -2,457 -18.2% Total. Other Defense Activities..... 46 520 44 625 167.851 +123,226 +276.1% Total, Office Of Legacy Management..... 77.137 77,812 200,990 +123.178 +158.3%

The FY 2007 **Legacy Management** budget request is \$201.0 million, an increase of \$123.2 million or 158% above the FY 2006 appropriation. This large increase reflects the transfer of clean-up sites completed by Environmental Management. The Office of Legacy Management is responsible for long-term stewardship activities at sites where active remediation has been completed. These activities include groundwater monitoring, administration of post closure contractor pensions and benefits and records management.

#### **Energy Supply and Conservation (\$33.1 million)**

Legacy Management - Long-Term Surveillance and Maintenance (\$18.4 million)

 This funding will allow the program to monitor and continue long-term treatment activities in accordance with legal and regulatory agreements where active cleanup has been completed on approximately 80 sites, most associated with the Uranium Mill Tailings Radiation Control Act (UMTRCA) and the Formerly Utilized Sites Remedial Action Program (FUSRAP).

Legacy Management - Pension and Benefit Continuity (\$14.7 million)

 This funding will allow the Department to reimburse site contractors for post-retirement benefits owed to contractor retirees at the Paducah, Portsmouth, and Grand Junction sites. This includes medical benefits, life insurance, and Medicare Part B payments.

#### Other Defense Activities (\$167.9 million)

Legacy Management - Long-Term Surveillance and Maintenance (\$26.5 million)

- This funding will allow the program to monitor and continue long-term treatment activities in accordance with legal and regulatory agreements at 14 sites where active cleanup has been completed by the Office of Environmental Management and the responsibility for post closure stewardship has been transferred to Legacy Management.
- The majority of funding (\$19.1 million) is associated with the transfer of post closure responsibilities
  and funding for long-term surveillance and maintenance activities at Rocky Flats, Fernald, and the
  Nevada off-sites from Environmental Management to Legacy Management in FY 2007.

Legacy Management - Pension and Benefit Continuity (\$120.7 million)

- This funding will allow the Department to reimburse closure site contractors for pensions and benefits owed to post closure contractor retirees. This includes pensions, medical benefits, life insurance, and Medicare Part B payments.
- The majority of funding (\$103.2 million) is associated with the payment of post closure pensions and
  post-retirement benefits and funding for the administration of post closure contractor pension and
  benefits at Rocky Flats and Fernald. These requirements are transferring from Environmental
  Management to Legacy Management in FY 2007.

# National Nuclear Security Administration Defense Nuclear Nonproliferation

_	(discretionary dollars in thousands)					
	FY 2005	FY 2006	FY 2007 Congressional	FY 2007 vs. FY 2006		
	Current	Current				
	Approp.	Approp.	Request	\$	%	
Defense Nuclear Nonproliferation						
Nonproliferation and verification R&D	219,836	318,780	268,887	-49,893	-15.7%	
Nonproliferation and international security	143,764	74,250	127,411	+53,161	+71.6%	
International nuclear materials protection	•	•		·		
and cooperation	403,451	422,730	413,182	-9,548	-2.3%	
Global initiatives for proliferation prevention	40,675	39,600		-39,600	-100.0%	
HEU transparency implementation	20,784	19,288		-19,288	-100.0%	
Elimination of weapons-grade plutonium production						
program	67,331	174,423	206,654	+32,231	+18.5%	
Fissile materials disposition	619,060	468,773	637,956	+169,183	+36.1%	
Offsite source recovery project	7,540	<u> </u>		·		
Global threat reduction initiative	<u> </u>	96,995	106,818	+9,823	+10.1%	
Subtotal, Defense Nuclear Nonproliferation	1,522,441	1,614,839	1,760,908	+146,069	+9.0%	
Use of prior year balances and other adjustments	-14,475		-34,695	-34,695	N/A	
Total, Defense Nuclear Nonproliferation	1,507,966	1,614,839	1,726,213	+111,374	+6.9%	

The FY 2007 **Defense Nuclear Nonproliferation** request is \$1,726.2 million, \$111.4 million or 7% above the FY 2006 current appropriation. The request includes \$638 million for Fissile Materials Disposition in the U.S. and Russia, the level required for the construction of facilities to convert weapons-grade plutonium into fuel for nuclear reactors; and \$283 million to fulfill the **Bratislava** Agreement between Presidents Bush and Putin. The FY 2007 request provides \$675 million toward the total U.S. commitment to the **Global Partnership** to address nonproliferation, disarmament, counter-terrorism, and nuclear safety issues. Nonproliferation concerns are of the highest government priority; and this program's work is of paramount importance for the security of the nation and the world.

#### Nonproliferation and Verification R&D (\$268.9 million)

 Funding supports fundamental research necessary for the U.S. government's Homeland Security and Intelligence missions, and will provide significant synergy across multiple agencies and missions.
 Funding sustains an FY 2006 increase for critical research in radiation detection; and sets new research in motion to significantly reduce detector size, while increasing sensitivity.

#### Nonproliferation and International Security (\$127.4 million)

Apparent funding increase due to realignment of Global Initiatives for Proliferation Prevention (GIPP)
and HEU Transparency Implementation (HEU TIP) into this program; masks an overall \$5.7 million
decrease in the combined activities. Decreases in the absorbed components HEU TIP and GIPP are
partially offset by increases in the International Cooperation, and International Nonproliferation Export
Control Programs.

#### International Nuclear Materials Protection and Cooperation (\$413.2 million)

Funding accelerates installations of radiation detection equipment at sites in Caucuses region; while
reducing funding to Rosatom Weapons Complex and Civilian Nuclear Sites reflecting the significant
accomplishments made during FY 2006. Megaports funding decrease due to acceleration of
installations in FY 2006 that completes the installation of radiation detection equipment at five
additional ports.

#### Elimination of Weapons-Grade Plutonium Production (\$206.7 million)

• Increased funding for Zheleznogorsk to meet a FY 2011 (December 2010) completion date for plutonium production reactor shutdown.

#### Fissile Materials Disposition (\$638.0 million)

Increased funding for the U.S. MOX Fuel Fabrication Facility (FY 2006 \$217.8 million; FY 2007 \$289.5 million) at the Savannah River Site, South Carolina, since this is a peak construction year.
 Increased funding for the Pit Disassembly and Conversion Facility (FY 2006 \$23.8 million; FY 2007 \$78.7 million) to procure equipment for the training module and design the Waste Facility.

#### Global Threat Reduction Initiative (\$106.8 million)

• Increase (+\$9.8 million) accelerates high value near-term threat reduction components of this work in keeping with Presidential direction and associated DOE initiatives.

# National Nuclear Security Administration Weapons Activities

(discretionary dollars in thousands) FY 2005 FY 2007 FY 2006 FY 2007 vs. FY 2006 Congressional Current Current Request Approp. Approp. Weapons Activities 1,351,206 1,372,327 1,410,268 +37,941 +2.8% Directed stockpile work... 2.300.014 2.123.161 1.937.390 -185.771 -8.7% Campaigns..... 1,644,755 Readiness in technical base and facilities..... 1,657,712 1,685,772 +41,017 +2.5% 209,979 -0.3% 199,709 209.264 -715 Secure transportation asset..... Nuclear weapons incident response..... 98,427 117,608 135.354 +17,746 +15.1% Facilities and infrastructure recapitalization program..... 313,722 149,365 291,218 +141,853 +95.0% +17.211 N/A 17.211 Environmental projects and operations..... 797,751 751,929 754,412 -43,339 -5.4% Safeguards and security..... 6,672,719 6,414,946 6,440,889 +25,943 +0.4% Subtotal, Weapons Activities..... +27.2% -47.177 +12,349 -45.349 -33,000 Use of prior year balances and other adjustments..... 6,625,542 6,369,597 6,407,889 +38,292 +0.6% Total, Weapons Activities.....

The FY 2007 **Weapons Activities** budget request is \$6,407.9 million, an increase of \$38.3 million or 0.6% above the FY 2006 appropriation. Essentially level funding will continue all programs to meet ongoing requirements 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 (\$1,410.3 million)

• The FY 2007 request is 2.8% above the FY 2006 level and will ensure that the nuclear warheads and bombs in the U.S. nuclear weapons stockpile are safe, secure, and reliable. Directed Stockpile Work is coordinated with the Department of Defense. It includes the Reliable Replacement Warhead (\$27.7 million) that is identifying designs to sustain long-term confidence in a safe, secure, and reliable stockpile and enable transformation to a responsive nuclear weapons infrastructure. It also includes an increase for Weapons Dismantlement and Disposition. (+\$37.9 million)

#### Campaigns (\$1,937.4 million)

Campaigns are focused scientific and technical efforts essential for certification, maintenance, and life extension of the stockpile. They have 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. 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; however, the Modern Pit Facility has been suspended. The Readiness Campaign is technology-based efforts to reestablish and enhance manufacturing and other capabilities needed to meet planned weapon component production. The decrease is due to the completion of congressionally-directed activities in FY 2006, decreases in Inertial Fusion Energy Technology programs, and planned profile decreases in the OMEGA and NIF programs. (-\$185.8 million)

#### Readiness in Technical Base and Facilities (\$1,685.8 million)

 To ensure the availability of essential facilities in the NNSA national security enterprise, \$1.2 billion is requested for baseline operation of facilities and other infrastructure required by stockpile stewardship programs, and \$281 million is requested for construction projects. The balance of the funding is included in program readiness, material recycle and recovery efforts, containers and storage. The overall increase reflects a prioritization of activities across the nuclear weapons complex. (+\$41.0 million)

#### Secure Transportation Asset (\$209.3 million)

• Ensures safe and secure movement of nuclear weapons, components, and materials for DOE, DoD and other customers. (-\$0.7 million)

#### Nuclear Weapons Incident Response (NWIR) (\$135.4 million)

 Request supports emergency management and provides response to nuclear emergency or terrorist threats. The increase realigns funding from Defense Nuclear Nonproliferation to NWIR for the Render Safe Research and Development Program. (+\$17.8 million)

#### Facilities and Infrastructure Recapitalization Program (\$291.2 million)

 Request continues to restore, rebuild, and revitalize the physical infrastructure of the nuclear weapons complex by reducing the backlog of deferred maintenance, thereby improving the condition of facilities and infrastructure. The increase is for additional Recapitalization funding for additional deferred maintenance reduction. (+\$141.8 million)

#### Environmental Projects and Operations (\$17.2 million)

 Beginning in FY 2007, NNSA will be responsible for the funding and management of Long-Term Response Actions/Long-Term Stewardship for the Kansas City Plant, the Lawrence Livermore National Laboratory – main site, and the Sandia National Laboratory; which includes activities such as groundwater treatment; environmental monitoring of surface water, ground water, soils, and landfill remedies; reporting and liaison requirements for various states and surveillance/monitoring of contaminated decommissioned buildings that have not been demolished upon completion of Environmental Management program cleanup mission. (+\$17.2 million)

# Safeguards and Security (\$721.4 million) (net S&S estimate which reflects an adjustment for the security charge for reimbursable work)

• Starting in FY 2007, separate control levels are requested for Defense Nuclear Security and Cyber Security. Defense Nuclear Security funding of \$665.7 million supports the hiring and training of additional protective force personnel; initiation of physical security system upgrades; materials control and accountability; application of emerging technologies; and heightened physical security levels at NNSA sites. The Cyber Security funding request of \$88.7 million is a decrease of approximately 2% from FY 2006 levels. The funding sustains NNSA's information infrastructure and upgrades elements to counter cyber threats from external and internal attacks using the latest available technology. The decrease is in security construction projects. (-\$43.3 million)

# Office of Nuclear Energy, Science and Technology

	(discretionary dollars in thousands)					
·	FY 2005	FY 2006	FY 2007 Congressional	EV 2007 ve	FY 2007 vs. FY 2006	
	Current Current	Current		F1 2007 VS. F1 2006		
·	Approp.	Approp.	Request	\$	%	
Office Of Nuclear Energy, Science And Technology						
Energy Supply and Conservation						
University reactor infrastructure and education assistance	23,810	26,730	<del></del>	-26,730	-100.0%	
Research and development	168,350	223,740	347,132	+123,392	+55.1%	
Infrastructure	248,986	241,060	145,012	-96,048	-39.8%	
Spent nuclear fuel management	6,681					
Program direction	60,076	60,498	67,608	+7,110	+11.8%	
Transfer from state department	14,000					
Subtotal, Energy Supply and Conservation	521,903	552,028	559,752	+7,724	+1.4%	
Use of prior year balances and other adjustments	-128,564	-136,029		136,029	+100.0%	
Total, Energy Supply and Conservation	521,903	552,028	559,752	+7,724	+1.4%	
Other Defense Activities						
Infrastructure	78,381	91,872	75,949	-15,923	-17.3%	
Spent nuclear fuel management	1,488					
Program direction	33,587	30,792		-30,792	-100.0%	
Subtotal, Other Defense Activities	113,456	122,664	75,949	-46,715	-38.1%	
Use of prior year balances and other adjustments	-3,003	-3,003	-3,003	• —		
Total, Other Defense Activities	110,453	119,661	72,946	-46,715	-39.0%	
Total, Nuclear Energy, Science And Technology	503,792	535,660	632,698	+97,038	+18.1%	

The FY 2007 **Office of Nuclear Energy, Science and Technology** budget request is \$632.7 million, an increase of \$97.0 million or 18% above the FY 2006 appropriation. The program develops new nuclear energy generation technologies to meet energy and climate goals, develops proliferation-resistant nuclear fuel technologies that maximize energy from nuclear fuel, and maintains and enhances the national nuclear technology infrastructure.

#### Advanced Fuel Cycle Initiative (\$243.0 million)

• The program focuses on developing technologies which can 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 fuel. In FY 2007, a new initiative called the Global Nuclear Energy Partnership is being proposed to accelerate the work being done under the Advanced Fuel Cycle Initiative program. This new initiative will improve the way spent nuclear fuel is managed, will help facilitate the expansion of civilian nuclear power in the United States, and encourage civilian nuclear power in foreign countries in a proliferation-resistant manner.

#### Nuclear Power 2010 (\$54.0 million)

Funding continues the program's focus on resolving the technical, institutional, and regulatory barriers
to the deployment of new nuclear power plants in the United States. In addition, funding allows for
the development of regulations, criteria and process associated providing standby support contracts
to protect sponsors of new nuclear power plants against the financial impact of certain delays during
construction or in gaining approval for operation that are beyond the sponsors' control.

#### Generation IV Nuclear Energy Systems Initiative (\$31.4 million)

 The program focuses on research and development issues necessary to establish the viability of next-generation nuclear energy concepts such as the Sodium-Cooled Fast Reactor and Very-High Temperature Reactor systems.

#### Idaho Facilities Management (\$95.3 million)

 The program 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. It is the government's objective to develop INL into a world-class nuclear energy research and development center by 2015.

# Office of Electricity Delivery and Energy Reliability

	(discretionary dollars in thousands)					
	FY 2005	FY 2006	FY 2007 Congressional	FY 2007 vs. FY 2006		
	Current	Current				
·	Approp.	Approp.	Request	\$	%	
Office Of Electricity Delivery & Energy Reliability						
Energy Supply and Conservation			•	•		
Research and development						
High temperature superconductivity R&D	53,034	49,995	45,468	-4,527	-9.1%	
Transmission reliability R&D	15,163	12,870		-12,870	-100.0%	
Electricity distribution transformation R&D	5,418	60,059		° -60,059	-100.0%	
Energy storage R&D	3,969	2,970		-2,970	-100.0%	
Gridwise	6,267	5,445		-5,445	-100.0%	
Gridworks	5,303	4,950		-4,950	-100.0%	
Visualization and controls	<u> </u>		17,551	+17,551	N/A	
Energy storage and power electronics			2,965	+2,965	N/A	
Distributed energy resources			29,652	+29,652	N/A	
Total, Research and development	89,154	136,289	95,636	-40,653	-29.8%	
Electricity restructuring	19,842	12,276	· —	<i>-</i> 12,276	-100.0%	
Operations and analysis			12,009	+12,009	N/A	
Program direction	8,135	13,313	17,283	+3,970	+29.8%	
Contruction	769				· <del></del>	
Subtotal, Electricity delivery and energy reliability	117,900	161,878	124,928	-36,950	-22.8%	
Use of prior year balances and other adjustments	-1,847					
Total, Electricity Delivery & Energy Reliability	116,053	161,878	124,928	-36,950	-22.8%	

The FY 2007 **Office of Electricity Delivery and Energy Reliability** budget request is \$124.9 million, a decrease of \$37.0 million or 23% below the FY 2006 appropriation, reflecting the phasing out of completed activities within the Distributed Energy program, the capture of synergies resulting from the merger of the predecessor organizations, and a reduction due to higher priority items.

#### Research and Development (\$95.6 million)

- Funding maintains the High Temperature Superconductivity activity (\$45.5 million) which focuses on superconductivity applications, wire development, and strategic research to improve the efficiency and reliability of the nation's electric delivery.
- The **Distributed Energy** activity (\$29.7 million) will complete several activities currently underway to develop integrated distributed-generation and thermal energy technologies.
- Visualization and Controls is a new activity (\$17.6 million) that consolidates former R&D activities
  (Gridwise, Gridworks, Energy Distribution Transformation, and Transmission Reliability) and focuses on:
  expansion of transmission monitoring and control capabilities which use GPS-synchronized data; integration
  of distributed energy resources with electric power systems; developing standards for the monitoring and
  control of distributed resources; developing technical principles for an open architecture; developing
  advanced control devices for customer loads and distributed resources; and developing systems to predict,
  locate, and prevent electrical faults.

#### Operations and Analysis (\$12.0 million)

- The FY 2007 budget request creates the new **Operations and Analysis** program. As a result, the Electricity Restructuring program and two new subprograms are established, as follows:
  - Permitting, Siting, and Analysis (\$5.9 million) will support many of the new activities prescribed in the National Energy Policy of 2005 such as identifying National Interest Electric Transmission Corridors and implementing the Department's lead role to coordinate all federal agency permits and reviews needed to construct transmission lines across federal lands. The activity will also continue the legacy activities of Electric Markets Technical Assistance.
  - Infrastructure Security and Energy Restoration activities (\$6.1 million) execute DOE's role as the Lead Sector Specific Agency for protecting the nation's critical energy infrastructure.

# **Civilian Radioactive Waste Management**

(discretionary dollars in thousands) FY 2005 EY 2006 FY 2007 Congressional FY 2007 vs. FY 2006 Current Current Request % Approp. Approp. Office Of Civilian Radioactive Waste Management Defense Nuclear Waste Disposal +41.580 +12.0% 346.500 388.080 229.152 Defense nuclear waste disposal..... Nuclear Waste Disposal +309.0% 263,872 19.800 80.986 +61,186 Repository program..... Intergrated spent fuel recycling..... -100.0% 49,500 -49,500 -3,766 -4.8% 79,360 79,200 75.434 Program direction..... 148,500 +7,920 +5.3% Total, Nuclear Waste Disposal..... 343,232 156,420 Total, Civilian Radioactive Waste Management..... 572.384 495,000 544,500 +49.500 +10.0%

The FY 2007 **Civilian Radioactive Waste Management** budget (CRWM) request is \$544.5 million, an increase of \$49.5 million or 10% above the FY 2006 appropriation. The CRWM program fulfills the U.S. government's responsibility for permanent geologic disposal of spent nuclear fuel and high-level radioactive waste resulting from both the nation's civilian and defense atomic energy activities. The program is responsible for developing successful waste acceptance, transportation, and disposal strategies that protect public health and safety in ways that are both environmentally and economically viable.

### Nuclear Waste Disposal [Civilian (\$156.4 million) and Defense (\$388.1 million)]

The **CRWM** program conducted a review in FY 2005 that led to the development of an operational strategy based on a "clean canisterized" approach for fuel handling in FY 2006. 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 2007 budget request continues to support this approach.

In addition, the Administration intends to submit to Congress a legislative proposal to address regulatory, funding and other issues to allow the Department to move forward with this critical project.

#### Yucca Mountain Project (FY 2006 \$305.9 million; FY 2007 \$355.4 million)

• In FY 2007, work will continue on the design of the Canister Handling Facility and development of a canister to be used for transportation, aging, and disposal (TAD) of spent nuclear fuel (+\$15.0M), both of which support the new "clean/canisterized" approach. Waste Package design will continue in FY 2007 along with the development of several prototype waste packages for testing (+\$20.0M), and site safety upgrades (+\$19.0M). Fuel Handling Facility design has been slowed in FY 2007 in order to focus on design and development of the TAD canister (-\$5.0M)

#### Transportation (FY 2006 \$19.9 million; FY 2007 \$67.8 million)

• Increase in funds provides for continued design activities necessary to support the procurement of prototypes for escort, buffer and cask rail cars (+\$11.7M) for the National Transportation Program. In addition, the increased funding will support critical engineering and design work for the Nevada rail line and associated support facilities (+\$19.4M). As a result of rail alignment activities additional institutional interactions with stakeholders will be required (+\$8.2M).

### **Office of Science**

(discretionary dollars in thousands) FY 2005 FY 2006 FY 2007 FY 2007 vs. FY 2006 Congressional Current Current Approp. Approp. Request Office Of Science 722,906 716,694 775.099 +58,405 +8.1% High energy physics..... 454,060 +87.026 +23.7% 394,549 367,034 Nuclear physics..... Biological and environmental research..... 566,597 579,831 510,263 -69.568 -12.0% 1,083,616 1,134,557 1,420,980 +286,423 +25.2% Basic energy sciences..... 318,654 +83.970 +35.8% 226,180 234,684 Advanced scientific computing research..... Science laboratories infrastructure..... 37,498 41,684 50,888 +9,204 +22.1% 266,947 287,644 318,950 +31,306 +10.9% Fusion energy sciences program..... +4.0% 73.630 76,592 72,773 +2.962 Safeguards and security..... Science program direction..... 154,031 159,118 170,877 +11,759 +7.4% 7.120 10.952 +3.832 +53.8% Workforce development for teachers and scientists..... 7.599 113,621 Small business innovation research (SBIR)..... Subtotal, Science..... 3.646,317 3,601,996 4,107,315 +505,319 +14.0% -5.605 -10.667-5,605 Use of prior year balances and other adjustments...... 3,596,391 4,101,710 +505,319 +14.1% 3,635,650 Total, Office Of Science.....

The FY 2007 **Office of Science** budget request is \$4,101.7 million, an increase of \$505.3 million or 14% above the FY 2006 appropriation. The program funds investments in basic research that are critical to the success of DOE missions in national security and energy security; advancement of the frontiers of knowledge in the physical sciences and areas of biological, environmental, and computational sciences; and provision of world-class research facilities. This increase is the Department's component of the **President's American Competitiveness Initiative**: the initiative will double investment in basic science over the next 10 years.

#### Basic Energy Sciences (\$1,421.0 million)

The Basic Energy Sciences program conducts research and builds and operates user facilities to
expand scientific foundations for new and improved energy technologies and to understand and
mitigate the environmental impacts of energy use. Funding supports research on nanoscale
science (+\$50.9M) and the Hydrogen Fuel Initiative (+\$17.5M). It also funds the first full year of
operations of the Spallation Neutron Source at ORNL (+\$99.7M), and provides R&D and project
engineering and design for the National Synchrotron Light Source II (NSLS II) project (+\$45.0M).

#### Advanced Scientific Computing Research (\$318.7 million)

• The Advanced Scientific Computing Research program conducts mathematics and computing research, and delivers state-of-the-art computational and networking capabilities to scientists nationwide enabling them to extend the frontiers of science. The program is developing world-leading scientific computing capabilities. In FY 2007, funding is increased for computational partnerships with other SC programs (+\$10.5M), and the **Leadership Computing Facilities** at Oak Ridge National Lab and Argonne National Lab (+\$48.8M). Funding for NERSC increases to enhance capacity and address oversubscription issues (+\$17.3M).

#### Biological and Environmental Research (\$510.3 million)

 The Biological and Environmental Research program advances environmental and biomedical knowledge to improve energy production development and use. This program provides DOE funding for the Administration's Climate Change Science Program (\$126.2M). Increased funding is provided for the Genomic: GTL (+\$49.8M) and Human Genome (+\$11.7M) programs. FY 2006 congressionally-directed projects are completed (-\$128.7M).

#### High Energy Physics (\$775.1 million)

• The High Energy Physics program conducts basic research to explore the laws of nature governing the most basic constituents of matter and the forces binding them. These are fundamental principles of physics and of the physical sciences. The program participated in the construction of the international Large Hadron Collider (\$3.2M) and will continue to participate in its research program. Increased funding is provided for the International Linear Collider to support a U.S. leadership role

in the international R&D program (+\$30.0M). New project engineering and design funding for the **Electron Neutrino Appearance Detector** project (+\$10.3M) is requested.

#### Nuclear Physics (\$454.0 million)

 The Nuclear Physics program supports research to provide new insights and knowledge of the structure and interaction of atomic nuclei and the primary forces and particles of nature in nuclear matter. Operations of the Relativistic Heavy Ion Collider at Brookhaven National Lab are resumed in FY 2007 (+\$30.2M). Funding is requested for project engineering and design for the 12GeV CEBAF upgrade project at Thomas Jefferson National Accelerator facilities (+\$7.0M).

#### Fusion Energy Sciences (\$318.9 million)

• The Fusion Energy Sciences program is the national research effort to advance plasma science, fusion science, and technology needed for an economical and environmentally safe fusion energy source. This program is funding U.S. participation in the international ITER project (\$60.0M), a burning plasma experiment. Domestic activities are being maintained at near FY 2006 levels.

#### Workforce Development for Teachers and Scientists (\$11.0 million)

The Workforce Development for Teachers and Scientists program provides a continuum of
educational opportunities to the Nation's students and teachers of science, technology, engineering
and mathematics. The Laboratory Science Teacher Professional Development program is
increased by \$3.8 million, primarily for support of additional middle school teachers.