

thorium reimbursements obligations in fiscal year 2003 from available carryover funds.

Other Uranium Activities.—The Committee recommendation is \$146,631,000, the same as the budget request and an increase of \$22,847,000 over fiscal year 2002. In addition to providing the requested \$10,000,000 for the conversion project for depleted uranium hexafluoride (DUF6), the Other Uranium Activities sub-account includes maintenance of enrichment facilities and inventories, financial liabilities arising prior to the privatization of the United States Enrichment Corporation, and maintenance of the Portsmouth Gaseous Diffusion Plant in cold standby.

SCIENCE

Appropriation, 2002	\$3,233,100,000
Budget Estimate, 2003	3,279,456,000
Recommended, 2003	3,271,233,000
Comparison:	
Appropriation, 2002	+38,133,000
Budget Estimate, 2003	-8,223,000

Note: The original budget request of \$3,285,088,000 for Science included \$5,632,000 to fund proposed legislation to require the agency to pay the full government share of the accruing cost of retirement for certain Federal employees. Since this legislation has not been enacted, the budget request has been reduced by this amount.

The Science account funds the Department's work on high energy physics, nuclear physics, biological and environmental sciences, basic energy sciences, advanced scientific computing, maintenance of the laboratories' physical infrastructure, fusion energy sciences, safeguards and security, science workforce development, and science program direction. The Committee is very supportive of the research conducted by the Department's Office of Science, but funding constraints preclude significant increases for fiscal year 2003. The Committee recommendation is \$3,271,233,000, a decrease of \$8,223,000 compared to the budget request, but \$38,133,000 more than fiscal year 2002.

As are many others, the Committee is concerned about the growing imbalance in the Federal investment in research in the physical sciences versus the life sciences. The recent emphasis on science research with direct applications to homeland security needs only exacerbates the under-investment in basic research in the physical sciences. Strength in the physical sciences is essential for the future well-being of the Nation because these sciences play a critical role in enabling U.S. technological innovation and global economic leadership. The physical sciences provide the foundation of knowledge for many fields of scientific endeavor, including the life sciences, and have many possible applications, including but not limited to national security and homeland defense.

The Committee hopes that the Department submits a fiscal year 2004 budget request that will support a robust physical sciences research program in the Office of Science. In addition to funding the capabilities that already exist at the national laboratories, the next budget request should also invest in the future by supporting the development of the next generation of scientists and engineers and the next generation of research instruments. The Committee will support future growth in the Science budget if the Department is able to present a rational scheme for setting priorities among the various research areas and among the wide range of possible new

projects (e.g., Next Linear Collider, Rare Isotope Accelerator, etc.), can improve its program and project management, and takes tangible and aggressive steps to implement external regulation at its Science laboratories. Continued self-regulation of these laboratories does not yield any measurable improvement in safety performance as compared to external regulation, and consumes resources that could be better spent on scientific research. The Committee firmly believes that a shift to external regulation would improve public trust and understanding of Office of Science activities, resulting in stronger Congressional support for its research programs.

The Committee encourages the Office of Science to streamline its field structure along the lines of the model being implemented by the National Nuclear Security Administration. The Committee also strongly encourages the Office of Science to focus its resources on the laboratories and field offices that are subject to the authority, direction, and control of the Director of the Office of Science.

HIGH ENERGY PHYSICS

The Committee recommends \$724,990,000 for high energy physics, the same as the budget request and \$8,890,000 more than fiscal year 2002. The previous subaccounts within the High Energy Physics account—research and technology and facility operations—are consolidated into a single account for fiscal year 2003, with the control level at the High Energy Physics level. The Committee is concerned about the difficulties being experienced with the luminosity upgrade of the Tevatron and with the Neutrinos at the Main Injector, both projects at Fermi National Accelerator Laboratory. The Committee expects the Department and the laboratory to exercise aggressive project management to bring these projects back on schedule, and to do so within the funds available for High Energy Physics. The Committee encourages the Department to work with the Office of Management and Budget to remove the existing limit on funding that may be spent for planning and research and development in support of the Next Linear Collider.

NUCLEAR PHYSICS

The Committee recommendation for nuclear physics is \$382,370,000, the same as the budget request and \$21,860,000 more than provided in fiscal year 2002. The Committee hopes the Department will move expeditiously through the project approval process for the 12 GeV upgrade for the Continuous Electron Beam Accelerator Facility. The Committee recommendation includes the requested amount of \$3,500,000 for research and development and pre-conceptual design activities in support of the Rare Isotope Accelerator.

BIOLOGICAL AND ENVIRONMENTAL RESEARCH

The Committee recommendation for biological and environmental research is \$504,215,000, the same as the budget request but \$23,190,000 less than in fiscal year 2002. The Committee recommendation includes the requested level of funding, \$5,841,000, for the Savannah River Ecology Laboratory. The Committee encourages the Department to explore technologies for the preserva-

tion and recovery of frozen mouse gametes, which have the potential to reduce significantly the cost of developing and transporting strains of live mice around the country.

BASIC ENERGY SCIENCES

The Committee recommendation for basic energy sciences is \$1,019,600,000, the same as the budget request and an increase of \$15,895,000 from fiscal year 2002. For purposes of reprogramming during fiscal year 2003, the Department may allocate funding among all operating accounts within Basic Energy Sciences.

Research.—The Committee recommendation includes \$547,883,000 for materials sciences and engineering, and \$220,146,000 for chemical sciences, geosciences, and energy biosciences, both the same as the budget request. Included within the material sciences and engineering account is \$7,685,000 for the Experimental Program to Stimulate Competitive Research (EPSCoR), the same as the budget request and as the fiscal year 2002 funding level.

Construction.—The Committee recommends the requested amount of \$251,571,000, which includes \$210,571,000 for construction of the Spallation Neutron Source (SNS), \$11,000,000 for project engineering and design of Nanoscale Science Research Centers at Oak Ridge, Lawrence Berkeley, and Sandia National Laboratories, \$24,000,000 to initiate construction of the Center for Nanophase Materials Sciences at Oak Ridge National Laboratory, and \$6,000,000 for project engineering and design of the Linac Coherent Light Source at the Stanford Linear Accelerator Center.

ADVANCED SCIENTIFIC COMPUTING RESEARCH

The Committee recommendation is \$174,625,000, an increase of \$5,000,000 over the budget request and \$16,575,000 more than the funding in fiscal year 2002. The Committee is very concerned about the recent Japanese advances in scientific supercomputing, specifically with the Earth Simulator computer that is more capable by one or two orders of magnitude than the most advanced U.S. supercomputers. The Japanese advances suggest not only that the DOE approach to stimulating U.S. industry to produce high-performance computers using commodity components may not be working as well as hoped, but also means that U.S. scientists will be relegated to using second-class computing resources to support their research projects in the near future. The Office of Science, the Advanced Scientific Computing Research Advisory Committee, and the Advanced Scientific Computing Research program deserve credit for acting promptly to develop a U.S. response to the challenge posed by the Japanese Earth Simulator supercomputer. The Committee provides additional funds for the Department's efforts to re-evaluate the U.S. approach to advanced scientific computing and to explore whether alternative approaches such as topical computing may be more successful.

ENERGY RESEARCH ANALYSES

This program is transferred as a subprogram under Science Program Direction.

SCIENCE LABORATORIES INFRASTRUCTURE

This program combines the previously separate Multiprogram Energy Laboratories—Facilities Support program and the Facilities and Infrastructure program, which were funded in fiscal year 2002 at \$30,175,000 and \$10,000,000, respectively. For the combined Science Laboratories Infrastructure program, the Committee recommends \$47,680,000, an increase of \$4,945,000 over the budget request and \$7,505,000 over fiscal year 2002. Within this amount is included an additional \$1,500,000 to modernize outdated infrastructure at the Princeton Plasma Physics Laboratory. The Committee recommendation also provides \$10,000,000 for excess facilities disposal.

FUSION ENERGY SCIENCES

The Committee recommendation for fusion energy sciences is \$248,495,000, the same as the fiscal year 2002 funding level and \$8,815,000 less than the budget request. The Committee notes that the fiscal year 2002 funding level included \$19,604,000 for the completion of decontamination and decommissioning of the Tokamak Fusion Test Reactor (TFTR), leaving \$228,891,000 available for fusion research and facility operations in fiscal year 2002. By comparison, the Committee recommendation for fiscal year 2003 makes this \$19,604,000 available for fusion research and facility operations, including initiation of fabrication of the National Compact Stellarator Experiment (NCSX), an increase of 8.5 percent over the comparable amount available in fiscal year 2002.

Within the funding available for fusion energy sciences, the Committee recommendation provides an additional \$1,000,000 for National Spherical Torus Experiment (NSTX) research, an additional \$500,000 for NSTX operations, and an additional \$1,000,000 for preliminary design for the National Compact Stellarator Experiment (NCSX).

The Committee acknowledges the significant scientific and engineering advances accomplished both in magnetic and inertial fusion. The Department is directed to prepare an updated program plan for fusion energy sciences, with particular attention to improving the integration of the magnetic fusion energy program and the work on inertial fusion funded primarily under the National Nuclear Security Administration. This updated program plan should also identify and evaluate the logical next steps in the U.S. fusion energy program, including the possibility of re-engaging in the International Thermonuclear Experimental Reactor (ITER). The program plan should also address the specific concerns with fusion power that were identified in the August 2002 draft report by the Rand Corporation entitled "Energy Technologies for 2050: A Methodology for Determining Research and Development Directions" and identify research actions to resolve those concerns. The Department should submit this updated program plan to Congress not later than March 31, 2003.

SAFEGUARDS AND SECURITY

The Committee recommends \$48,127,000, the same as the budget request and \$7,285,000 less than fiscal year 2002. Within this

amount is included an additional \$2,100,000 for essential safeguards and security upgrades at the Princeton Plasma Physics Laboratory.

SCIENCE WORKFORCE DEVELOPMENT

The national laboratories under the Office of Science represent a unique national asset, both in terms of state-of-the-art research facilities and expert scientists and engineers. The Department is encouraged to expand on existing programs to make these capabilities available to teachers of science, technology, engineering, and mathematics. Not only will these opportunities help to raise the level of teaching in the classroom in the near term, but improving science education is directly relevant to the quality of the future workforce available to the Department. The Committee recommendation is \$5,460,000, the same as the budget request for Science Education and an increase of \$1,000,000 over fiscal year 2002. This new program is intended to refocus the activities previously funded in the Science Education subprogram within Program Direction.

SCIENCE PROGRAM DIRECTION

The Committee recommendation is \$134,310,000 for Science program direction. This amount includes: \$125,540,000 for program direction at DOE headquarters and field offices, a reduction of \$2,847,000 from the budget request and \$9,960,000 less than fiscal year 2002; \$7,770,000 for Technical Information Management; and \$1,000,000 for Energy Research Analyses. The Technical Information Management program is transferred from the Energy Supply account to the Science account, so that program management will be aligned with program resources. It is included as a subprogram within the Science Program Direction program as the information management and program management functions are integrally related. The Committee recommendation for Technical Information Management is \$7,770,000, the same as fiscal year 2002 and \$155,000 less than the budget request. The Energy Research Analyses program is also transferred as a subprogram within Science Program Direction. The Committee recommendation provides \$1,000,000, the same as fiscal year 2002 and \$20,000 less than the budget request. The control level for fiscal year 2003 is at the program account level of Science Program Direction.

External Regulation of DOE Science Laboratories.—The conference report accompanying the Energy and Water Development Appropriations Act for Fiscal Year 2002 directed the Department to prepare a detailed implementation plan for external regulation of nuclear and worker safety at the Department's Science laboratories. The Committee is very disappointed in the response of the Office of Science and of the Department as a whole to this direction. With the concept of external regulation strongly supported by this Committee and by the directors of these ten laboratories, the Committee expected the Office of Science to take an aggressive role in developing and promoting this implementation plan within the Department. Instead, the Office of Science produced a weak initial draft plan and then failed to champion it effectively against the forces of bureaucratic inertia that plague the rest of the Department.

The implementation plan that was finally completed by the Office of Management, Budget, and Evaluation, and which was submitted one month after it was due to the Committee, remains grossly inadequate. The funding levels for Science Program Direction, as well as for Environment, Safety and Health (non-defense) and Departmental Administration, reflect the level of Committee dissatisfaction with this product. The question of external regulation has been studied extensively over the past decade, not only by the Department itself, the Nuclear Regulatory Commission (NRC), and the Occupational Safety and Health Administration (OSHA), but also by outside experts including the National Academy of Public Administration and the General Accounting Office (GAO). A recent GAO review of safety regulation at other government laboratories, major private sector companies, and European energy laboratories found that these other entities are all externally regulated, requiring consistently fewer resources than self-regulation by DOE and with no loss in safety performance.

Unfortunately, from that mass of available information, including external regulation pilot projects already completed at several DOE laboratories, the best that the Department could produce for a detailed implementation plan is a 17-page report calling for more studies. In many instances, including the tasking to provide the changes needed in statutory language and the estimate of reductions in funding and staffing at DOE headquarters, the Department merely repeated the questions posed by the Committee instead of making any attempt to answer those questions. The plan submitted by the Department proposes a number of additional studies but provides neither cost estimates nor completion dates for those efforts. Despite statements made at hearings before this Committee, it is clear that the leadership of the Department is more interested in preserving the status quo of self-regulation than in making a serious effort to improve the safety and efficiency of its laboratory operations. It is also clear that the Department cannot be relied upon to provide accurate and objective information in response to Committee requests for information on this issue.

There is a legitimate question on the cost of bringing the ten Science laboratories into compliance with NRC and OSHA regulations. The Department is, therefore, directed to submit to the House and Senate Energy and Water Development Appropriations Subcommittees, not later than September 30, 2003, a report providing a detailed estimate of the cost of bringing the ten Science laboratories named in House Report 107-112 into full compliance with NRC and OSHA standards for nuclear safety and worker safety. Funds to execute this task are provided under the Environment, Safety, and Health (non-defense) account. The NRC and OSHA are to conduct comprehensive compliance audits at the ten Science laboratories; from this information, the laboratories are to develop estimates of the costs necessary to correct the safety deficiencies identified by NRC and OSHA and bring their facilities and operations into compliance with NRC and OSHA standards. As part of this estimate, the laboratories should also isolate those costs for corrective measures that are needed to meet DOE's own safety standards, separate from those required to meet NRC and OSHA standards. The Department is to provide the results of these com-

pliance audits and compliance cost estimates directly to the Committee without delay or modification by DOE staff. To support the fiscal year 2004 appropriations process, NRC and OSHA, in consultation with the laboratories, should select an agreed-upon subset of four Science laboratories for which the compliance audits and compliance cost estimates can be completed not later than May 31, 2003. This subset should include one multiprogram laboratory with a nuclear reactor, a multiprogram laboratory with an accelerator, and two of the single-purpose laboratories. Of the laboratories in this subset with accelerators, at least one should be in an NRC agreement state and at least one in a non-agreement state. Further, the NRC and OSHA should select laboratories for this subset that were not studied previously under the external regulation pilot projects. The Committee expects the NRC and OSHA to enter into a Memorandum of Agreement, or modify an existing agreement, to define their respective responsibilities for radiation safety. This agreement should be provided to the Committee not later than May 31, 2003.

An additional question posed by the Committee but left unanswered by DOE is the cost savings that will result from staff and funding reductions at DOE headquarters and field offices once external regulation is in place. The Department is unable to answer this question because it does not know how much it presently spends on self-regulation of these ten Science laboratories. The Committee intends to task the General Accounting Office (GAO) to develop objective estimates of current resources expended by DOE and the potential savings from external regulation.

The Committee expects the Department to provide full support for the afore-mentioned efforts of the NRC, OSHA, GAO, and the ten Science laboratories.

FUNDING ADJUSTMENTS

The budget request included an offset of \$4,383,000 for the safeguards and security charge for reimbursable work. The Committee has provided direct funding for this activity and eliminated the funding offset. A general reduction of \$18,639,000 has been applied to the Science account.

NUCLEAR WASTE DISPOSAL

Appropriation, 2002	\$95,000,000
Budget Estimate, 2003	275,802,000
Recommended, 2003	209,702,000
Comparison:	
Appropriation, 2002	+114,702,000
Budget Estimate, 2003	-66,100,000

Note: The original budget request of \$212,045,000 for Nuclear Waste Disposal included \$2,343,000 to fund proposed legislation to require the agency to pay the full government share of the accruing cost of retirement for certain Federal employees. Since this legislation has not been enacted, the budget request has been reduced by this amount.

The Nuclear Waste Policy Act of 1982, as amended, established the Federal government's responsibility for the permanent disposal of spent nuclear fuel and high-level radioactive waste, and established the statutory framework to guide the selection and development of a site for a permanent repository. This law also created the Nuclear Waste Fund to finance the disposal of commercially-gen-

DEPARTMENT OF ENERGY
(AMOUNTS IN THOUSANDS)

	FY 2002 Enacted	FY 2003 Request	House
Excess facilities.....	3,500	1,841	5,000
	=====	=====	=====
TOTAL, NON-DEFENSE ENVIRONMENTAL MANAGEMENT.....	236,372	166,000	213,259
	=====	=====	=====
URANIUM FACILITIES MAINTENANCE AND REMEDIATION			
Uranium Enrichment Decontamination and Decommissioning Fund			
Decontamination and decommissioning.....	298,641	234,523	234,523
Uranium/thorium reimbursement.....	1,000	1,000	1,000
Total, Uranium enrichment D&D fund.....	299,641	235,523	235,523
Other Uranium Activities			
Maintenance and pre-existing liabilities.....	110,784	146,631	146,631
02-U-101 Depleted uranium hexafluoride conversion project, Paducah, KY and Portsmouth, OH.....	10,000	---	---
96-U-201 DUF6 cylinder storage yard, Paducah, KY....	3,000	---	---
Total, Other uranium activities.....	123,784	146,631	146,631
Use of prior year balances.....	-5,000	---	---
	=====	=====	=====
TOTAL, URANIUM FACILITIES MAINTENANCE AND REMEDIATION.....	418,425	382,154	382,154
	=====	=====	=====
SCIENCE			
High energy physics.....	704,700	704,897	704,897
Construction			
98-G-304 Neutrinos at the main injector, Fermilab.....	11,400	20,093	20,093
Total, High energy physics.....	716,100	724,990	724,990
Nuclear physics.....	360,510	382,370	382,370
Biological and environmental research.....	516,000	504,215	504,215
Construction			
01-E-300 Laboratory for Comparative and Functional Genomics, ORNL.....	11,405	---	---
Total, Biological and environmental research.....	527,405	504,215	504,215
Basic energy sciences			
Research			
Materials sciences and engineering research.....	434,353	547,883	547,883
Chemical sciences, geosciences and energy biosciences.....	218,714	220,146	220,146
Engineering and geosciences.....	38,938	---	---
Energy biosciences.....	32,400	---	---
Subtotal, Research.....	724,405	768,029	768,029
Construction			
03-SC-002 Project engineering & design (PED) SLAC.....	---	6,000	6,000
03-R-312 Center for nanophase materials sciences, ORNL.....	---	24,000	24,000
02-SC-002 Project engineering and design (VL).....	3,000	11,000	11,000

DEPARTMENT OF ENERGY
(AMOUNTS IN THOUSANDS)

	FY 2002 Enacted	FY 2003 Request	House
99-E-334 Spallation neutron source (ORNL).....	276,300	210,571	210,571
Subtotal, Construction.....	279,300	251,571	251,571
Total, Basic energy sciences.....	1,003,705	1,019,600	1,019,600
Advanced scientific computing research.....	158,050	169,625	174,625
Energy research analyses.....	1,000	1,020	---
Science laboratories infrastructure			
Infrastructure support.....	1,020	1,020	1,020
Oak Ridge landlord.....	7,359	5,079	5,079
Excess facilities disposal.....	10,000	5,055	10,000
Construction			
03-SC-001 Science laboratories infrastructure project engineering and design (PED), various loc.	---	3,355	3,355
MEL-001 Multiprogram energy laboratory infrastructure projects, various locations.....	18,613	28,226	28,226
02-SC-001 Multiprogram energy laboratories, project engineering design, various locations.....	3,183	---	---
Subtotal, Construction.....	21,796	31,581	31,581
Total, Science laboratories infrastructure.....	40,175	42,735	47,680
Fusion energy sciences program.....	248,495	257,310	248,495
Safeguards and security.....	55,412	48,127	48,127
Science workforce development.....	---	---	5,460
Science program direction			
Field offices.....	63,000	70,163	68,600
Headquarters.....	72,500	58,224	56,940
Science education.....	4,460	5,460	---
Technical information management program.....	---	---	7,770
Energy research analyses.....	---	---	1,000
Total, Science program direction.....	139,960	133,847	134,310
Subtotal, Science.....	3,250,812	3,283,839	3,289,872
General reduction.....	-12,800	---	-18,639
Less security charge for reimbursable work.....	-4,932	-4,383	---
TOTAL, SCIENCE.....	3,233,100	3,279,456	3,271,233
NUCLEAR WASTE DISPOSAL			
Repository program.....	39,000	212,813	146,713
Program direction.....	56,000	62,989	62,989
TOTAL, NUCLEAR WASTE DISPOSAL.....	95,000	275,802	209,702
DEPARTMENTAL ADMINISTRATION			
Administrative operations			
Salaries and expenses			
Office of the Secretary.....	4,700	4,645	4,000
Board of contract appeals.....	911	743	743