

for the Hanford Waste Treatment Plant identified a number of significant problems in the Department's estimating, change control, and contract management processes at that project. These results have not inspired confidence in the reliability of the Department's cost and schedule baselines for other Environmental Management projects. Given the recent increases to the cost and schedule for the DUF6 conversion project, the Committee directs the Department to transfer \$1,250,000 each from the Portsmouth and Paducah DUF6 plants to the U.S. Army Corps of Engineers center of expertise on cost engineering to conduct a thorough independent review of the cost and schedule baseline for these two plants. In addition, this review should evaluate the recommendations of the DOE Inspector General (see DOE/IG-0642) regarding the economic advantages of adding another processing line to the Portsmouth plant. The Corps should provide a report on its review to DOE not later than May 15, 2005, and should provide a concurrent submission to the Committees on Appropriations.

### SCIENCE

|                             |                 |
|-----------------------------|-----------------|
| Appropriation, 2004 .....   | \$3,482,283,000 |
| Budget Estimate, 2005 ..... | 3,431,718,000   |
| Recommended, 2005 .....     | 3,599,964,000   |
| Comparison:                 |                 |
| Appropriation, 2004 .....   | +117,681,000    |
| Budget Estimate, 2005 ..... | +168,246,000    |

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 recommendation is \$3,599,964,000, an increase of \$168,246,000 compared to the budget request.

The Committee has provided additional funding for the Office of Science to address the following Committee priorities: high performance computing; additional operating time, equipment upgrades, and staffing to support increased research opportunities at Office of Science user facilities; nanoscale science research; remediation of safety deficiencies at DOE Science laboratories; and restoration of domestic fusion funding displaced by the new international fusion initiative. The Committee also provides additional funding to continue essential research and development and preconceptual design for the Rare Isotope Accelerator.

*External Regulation of DOE Science Laboratories.*—In July 2002, the Department produced a Committee-directed implementation plan for external regulation. The Department identified several key unresolved questions about external regulation, specifically the unknown costs of transitioning to external regulation and the unknown cost savings that might result from such a transition. However, the Department stated that it “believes that these issues can be resolved” and “favors the prospect of a transition to external regulation . . .” The Committee has subsequently taken steps to resolve these questions, tasking the General Accounting Office (GAO) to identify the current costs of DOE's self-regulation of the

Science laboratories and the potential savings that might result under external regulation. In its report (GAO-03-633R), the GAO found that the Department could save as much as \$41 million annually by shifting to external regulation of its Science laboratories. To address the question of transition costs, the Committee, in the Energy and Water Development Appropriations Act, 2003, directed the transfer of funds from the Department of Energy to the Nuclear Regulatory Commission (NRC) and the Occupational Safety and Health Administration (OSHA) to conduct compliance audits of the ten DOE Science laboratories. Upon completion of these audits, the Office of Science was tasked to prepare estimates of the costs to correct the identified deficiencies and bring these ten laboratories into compliance with NRC and OSHA safety standards.

The compliance audits revealed a backlog of safety-related deficiencies at the Department's ten Science laboratories. The existence and persistence of such a backlog is one of the unfortunate consequences of the Department's adherence to its current scheme of self-regulation. The Department is able to identify safety problems but is unable or unwilling to dedicate the necessary resources to correct these problems. The Committee added funding in fiscal year 2004 to address these safety deficiencies and is disappointed that the Department did not consider these safety deficiencies of sufficient importance to request any funding in fiscal year 2005. The Committee recommendation includes \$5,000,000 in fiscal year 2005 to continue resolving these outstanding safety deficiencies.

Through the direction of this Committee and with the cooperation of the ten Science laboratories, the Department's principal substantive objections to external regulation (i.e., unknown cost savings and unknown transition costs) have been resolved. The benefits of external regulation appear significant and the transition costs appear manageable. The Department's sole remaining objection to external regulation seems to be nothing more than a bureaucratic determination to preserve the Secretary's discretion to continue business as usual. In the Committee's view, the exercise of Secretarial discretion to continue neglecting worker safety by preserving the current ineffective scheme of self-regulation is not good public policy. When faced with mounting evidence of the efficacy and cost-effectiveness of external regulation, the Committee is unable to understand the Department's continued intransigence on this matter.

*Open Competition.*—In general, the Committee believes that new research facilities for the Office of Science should be openly competed among universities, private entities, federal laboratories and others qualified to build and operate such facilities. There are obviously exceptions, as when the new facility is specifically dependent on an existing reactor, light source, or accelerator located at an existing DOE laboratory or when the new facility represents a replacement of an existing facility. However, there should not be a default assumption that such facilities must be built at DOE national laboratories. The Committee is aware that research experiments associated with NASA flight missions, including those involving the development and delivery for flight of sophisticated instruments, are openly competed with universities, private companies, government laboratories, and others all able to submit pro-

posals. The Committee is also aware that DOE laboratories compete, actively against universities, private companies, and other government laboratories, for work from other Federal agencies. The Committee expects the Office of Science to apply the same standard of open competition for its own DOE-funded facilities. Accordingly, to enable many of Science facilities proposed in the Twenty-Year Facility Outlook to proceed, DOE is directed to determine how to accomplish such competition under current law and regulation or to develop proposals for changes to law or regulations to enable such competitions to proceed.

*Performance Measures.*—The Committee commends the Office of Science for its efforts to develop quantifiable performance measures for its research activities. Some of the measures (e.g., inverse picobarns) are less comprehensible to Congress than others, but the overall approach to quantitative performance measurement is worthwhile. The Office of Science presented clear data on operating time for user facilities within each Science subaccount, but future budget requests should include a standardized summary presentation for all Office of Science user facilities.

#### HIGH ENERGY PHYSICS

The Committee recommends a total of \$753,380,000 for high energy physics, an increase of \$16,000,000 over the budget request. The control level is at the High Energy Physics level. The additional funds are provided to meet increased electricity costs at the Stanford Linear Accelerator Center (SLAC) and to increase operating time and enhance user support at SLAC and the Fermi National Accelerator Laboratory. The Committee supports the Department's collaboration with the National Aeronautics and Space Administration (NASA) on the Gamma-ray Large Area Space Telescope (GLAST), the Alpha Magnetic Spectrometer (AMS), and the Joint Dark Energy Mission (JDEM), and encourages NASA to maintain the planned schedule for these missions.

#### NUCLEAR PHYSICS

The Committee recommendation for nuclear physics is \$415,040,000, an increase of \$14,000,000 over the budget request. An additional \$7,000,000 is provided to continue research and development and initiate conceptual design activities for the Rare Isotope Accelerator, and an additional \$7,000,000 is provided to increase utilization of the user facilities in the Nuclear Physics program.

#### BIOLOGICAL AND ENVIRONMENTAL RESEARCH

The Committee recommendation for biological and environmental research is \$571,590,000, an increase of \$75,000,000 over the budget request. The Committee recommendation provides an additional \$75,000,000 to maintain the program at approximately the same funding level as fiscal year 2004, which included several Congressionally-directed projects.

The Committee does not provide the requested \$5,000,000 to initiate Project Engineering and Design for the proposed new facility for the production and characterization of proteins and molecular

tags. The Committee does not agree with the Department's strategy of restricting competition for such a facility to only the DOE national laboratories. The Department should present in the fiscal year 2006 budget request an alternate procurement strategy for this and future Genomes to Life (GTL) facilities that will maximize rather than limit competition and will allow universities and other entities to compete with DOE national laboratories for these new GTL facilities. The Committee is aware that NASA has, for decades, conducted competitions for the development of research instrumentation among universities, NASA, DOE, and other government laboratories, and other entities. The Department is directed to develop a comparable approach to competition.

#### BASIC ENERGY SCIENCES

The Committee recommendation for basic energy sciences is \$1,076,530,000, an increase of \$13,000,000 over the budget request. For purposes of reprogramming during fiscal year 2005, the Department may allocate funding among all operating accounts within Basic Energy Sciences.

*Research.*—The Committee recommendation includes \$612,228,000 for materials sciences and engineering, and \$232,422,000 for chemical sciences, geosciences, and energy biosciences. The additional \$13,000,000 in these accounts is to fund additional research on nanoscale science, including research on low cost nanoparticles using plasma reactors at the Idaho National Laboratory, and increase operating time on the Basic Energy Sciences user facilities. Also included within this account is \$7,673,000 for the Experimental Program to Stimulate Competitive Research (EPSCoR), the same as the budget request.

*Construction.*—The Committee recommendation includes \$231,880,000 for Basic Energy Sciences construction projects, the same as the requested amount. The Committee recommendation provides the requested funding of \$80,535,000 for the Spallation Neutron Source (99-E-334) at Oak Ridge National Laboratory; \$32,085,000 for the Molecular Foundry (04-R-313) at Lawrence Berkeley National Laboratory; \$30,897,000 for the Center for Integrated Nanotechnologies (03-R-313) at Los Alamos and Sandia National Laboratories; \$20,075,000 for PED (03-SC-002) and \$30,000,000 for long-lead procurements (05-R-320) for the Linac Coherent Light Source at the Stanford Linear Accelerator Center; \$18,465,000 for the Center for Functional Nanomaterials (05-R-321) at Brookhaven National Laboratory; \$17,811,000 for the Center for Nanophase Material Sciences (03-R-312) at Oak Ridge National Laboratory; and \$2,012,000 for PED to support the various nanoscale science research centers (02-SC-002).

#### ADVANCED SCIENTIFIC COMPUTING RESEARCH

The Committee recommendation is \$234,340,000, an increase of \$30,000,000 over the budget request, with not more than \$25,000,000 of the increase devoted to hardware. The Committee provides these additional funds to support the Office of Science initiative to develop the hardware, software, and applied mathematics necessary for a leadership-class supercomputer to meet scientific computation needs. The Committee is disappointed that the efforts

of the High End Computing Revitalization Task Force (HEC RTF), under the lead of the Office of Science and Technology Policy (OSTP), did not translate into increased fiscal year 2005 funding requests for advanced scientific computing by any non-defense agencies other than the Department of Energy. The Department is encouraged to make substantial time available on its new leadership-class supercomputer to the laboratories of other government agencies, universities, and others with a compelling need for this capability, and to select these external users on a competitive basis as is presently done for users of the National Energy Research Scientific Computing Center.

#### SCIENCE LABORATORIES INFRASTRUCTURE

The Committee recommendation provides a total of \$42,336,000 for Science Laboratories Infrastructure, an increase of \$13,246,000 over the budget request but \$11,931,000 less than the current fiscal year. Of this increase, \$4,500,000 additional is provided to continue infrastructure subproject 18 under MEL-001 to support continuing activities at the Pacific Northwest National Laboratory to replace the infrastructure being displaced by the closure of the 300 Area at the Hanford site. The Committee directs the Department to include sufficient funds in the fiscal year 2006 budget request to continue this activity. An additional \$3,500,000 is provided to accelerate the other laboratory infrastructure projects under MEL-001. The Committee does not concur with the lack of a budget request to correct safety deficiencies at the Office of Science laboratories and provides \$5,000,000 to continue the corrective actions necessary to address the estimated \$56.6 million of deficiencies identified at these laboratories by the Occupational Safety and Health Administration and the Nuclear Regulatory Commission. An additional \$246,000 is provided to meet the Department's obligation for PILT payments at Argonne National Laboratory-East in fiscal year 2005 without offsetting reductions.

#### FUSION ENERGY SCIENCES

The Committee recommendation for fusion energy sciences is \$276,110,000, an increase of \$12,000,000 over the budget request. The additional \$12,000,000 is to be used to increase the utilization of existing large and small experiments; further work in inertial fusion technology; take advantage of opportunities in High Energy Density Physics, including research on fast ignition, and large-scale scientific computing; and provide for cost-effective construction and development of the National Compact Stellarator Experiment. The Committee notes the delay in site selection for the International Thermonuclear Experimental Reactor (ITER) and expects the Department to reduce its planned expenditures on ITER in fiscal year 2005 in consideration of this delay.

#### SAFEGUARDS AND SECURITY

The Committee recommends \$73,315,000, the same as the budget request, to meet additional safeguards and security requirements at Office of Science facilities.

## SCIENCE WORKFORCE DEVELOPMENT

The Committee provides \$7,660,000 for Science Workforce Development in fiscal year 2005, the same as the requested amount.

## SCIENCE PROGRAM DIRECTION

The Committee recommendation is \$155,268,000 for Science program direction. This amount includes: \$89,341,000 for program direction at DOE field offices and \$65,927,000 for program direction at DOE headquarters. The control level for fiscal year 2005 is at the program account level of Science Program Direction.

## FUNDING ADJUSTMENTS

The Committee recommendation includes an offset of \$5,605,000 for the safeguards and security charge for reimbursable work, as proposed in the budget request.

## NUCLEAR WASTE DISPOSAL

|                             |               |
|-----------------------------|---------------|
| Appropriation, 2004 .....   | \$188,879,000 |
| Budget Estimate, 2005 ..... | 749,000,000   |
| Recommended, 2005 .....     | .....         |
| Comparison:                 |               |
| Appropriation, 2004 .....   | - 188,879,000 |
| Budget Estimate, 2005 ..... | - 749,000,000 |

The Department of Energy requested a total of \$880,000,000 for work on the Yucca Mountain nuclear waste repository in fiscal year 2005, \$749,000,000 for Nuclear Waste Disposal and \$131,000,000 for Defense Nuclear Waste Disposal. However, the Department also assumed in its budget request that the full amount of \$749,000,000 for Nuclear Waste Disposal would be offset through the enactment of legislation to reclassify the fees paid into the Nuclear Waste Fund. The net request for discretionary spending for the repository in fiscal year 2005 is, therefore, only \$131,000,000. The Committee recommendation for Yucca Mountain mirrors the Administration's net request for discretionary spending in fiscal year 2005: \$0 for Nuclear Waste Disposal and \$131,000,000 for Defense Nuclear Waste Disposal. Within these limited funds, the Committee directs the Department to focus on maintaining the schedule for a December 2004 submittal of the License Application to the Nuclear Regulatory Commission.

This Committee strongly supports the proposed reclassification legislation, and encourages the House and Senate authorizing committees to pass promptly such legislation and the President to sign it into law. At this time, however, there are no indications that the reclassification language will be enacted in the near future. At best, the Office of Management and Budget (OMB) made an unwise budget calculation to assume this offset; at worst, OMB took a foolish political gamble by assuming that reclassification legislation would be enacted this year.

The consequences of this miscalculation are far-reaching. In response to an April 29, 2004, request from the Chairman and Ranking Member of the Energy and Water Development Subcommittee, the Department of Energy provided on May 24, 2004, the following

DEPARTMENT OF ENERGY  
(AMOUNTS IN THOUSANDS)

|  | FY 2004<br>Enacted | FY 2005<br>Request | House<br>Recommended |
|--|--------------------|--------------------|----------------------|
| Use of prior year balances.....  | -9,941             | ---                | ---                  |
| TOTAL, NON-DEFENSE ENVIRONMENTAL SERVICES.....   | 337,465            | 291,296            | 291,296              |
| <b>SCIENCE</b>   |                    |                    |                      |
| <b>High energy physics</b>   |                    |                    |                      |
| Proton accelerator-based physics.....  | 397,137            | 412,092            | 417,092              |
| Electron accelerator-based physics.....  | 158,545            | 150,890            | 161,890              |
| Non-accelerator physics.....   | 42,746             | 42,936             | 42,936               |
| Theoretical physics.....   | 42,007             | 49,830             | 49,630               |
| Advanced technology R&D.....   | 80,763             | 81,081             | 81,081               |
| Subtotal.....  | 721,198            | 736,629            | 752,629              |
| <b>Construction</b>  |                    |                    |                      |
| 98-G-304 Neutrinos at the main injector,<br>Fermilab.....  | 12,426             | 751                | 751                  |
| Total, High energy physics.....  | 733,624            | 737,380            | 753,380              |
| Nuclear physics.....   | 389,618            | 401,040            | 415,040              |
| Biological and environmental research.....   | 588,507            | 496,590            | 571,590              |
| <b>Construction</b>  |                    |                    |                      |
| 05-SC-004 Project engineering and design (PED),<br>facility for the production and characterization<br>of proteins and molecular tags..... | ---                | 5,000              | ---                  |
| <b>Basic energy sciences</b>   |                    |                    |                      |
| <b>Research</b>  |                    |                    |                      |
| Materials sciences and engineering research.....   | 572,314            | 603,228            | 612,228              |
| Chemical sciences, geosciences and energy<br>biosciences.....  | 219,611            | 228,422            | 232,422              |
| Subtotal, Research.....  | 791,925            | 831,650            | 844,650              |
| <b>Construction</b>  |                    |                    |                      |
| 05-R-320 LINAC coherent light source (LCLS).....   | ---                | 30,000             | 30,000               |
| 05-R-321 Center for functional nanomaterials (BNL)   | ---                | 18,465             | 18,465               |
| 04-R-313 The molecular foundry (LBNL).....   | 34,794             | 32,085             | 32,085               |
| 03-SC-002 Project engineering & design (PED) SLAC.   | 7,456              | 20,075             | 20,075               |
| 03-R-312 Center for nanophase materials sciences,<br>ORNL.....   | 19,882             | 17,811             | 17,811               |
| 03-R-313 Center for Integrated Nanotechnology.....   | 29,674             | 30,897             | 30,897               |
| 02-SC-002 Project engineering and design (VL).....   | 2,982              | 2,012              | 2,012                |
| 99-E-334 Spallation neutron source (ORNL).....   | 123,865            | 80,535             | 80,535               |
| Subtotal, Construction.....  | 218,653            | 231,880            | 231,880              |
| Total, Basic energy sciences.....  | 1,010,578          | 1,063,530          | 1,076,530            |
| Advanced scientific computing research.....  | 202,289            | 204,340            | 234,340              |
| <b>Science laboratories infrastructure</b>   |                    |                    |                      |
| Laboratories facilities support<br>Infrastructure support.....   | 1,511              | 1,520              | 1,766                |

DEPARTMENT OF ENERGY  
(AMOUNTS IN THOUSANDS)

|   | FY 2004<br>Enacted | FY 2005<br>Request | House<br>Recommended |
|---|--------------------|--------------------|----------------------|
| -----   |                    |                    |                      |
| Construction  |                    |                    |                      |
| 04-SC-001 Project engineering and design (PED),<br>various locations.....                 | 1,988              | ---                | ---                  |
| MEL-001 Multiprogram energy laboratory<br>infrastructure projects, various locations..... | 29,759             | 16,391             | 24,391               |
| Subtotal, Construction.....   | 31,747             | 16,391             | 24,391               |
| -----   |                    |                    |                      |
| Subtotal, Laboratories facilities support.....  | 33,258             | 17,911             | 26,157               |
| Oak Ridge landlord.....   | 5,049              | 5,079              | 5,079                |
| Excess facilities disposal.....   | 6,019              | 6,100              | 6,100                |
| Safety-related corrective actions.....  | 9,941              | ---                | 5,000                |
| Total, Science laboratories infrastructure.....   | 54,267             | 29,090             | 42,336               |
| Fusion energy sciences.....   | 262,552            | 264,110            | 276,110              |
| Safeguards and security.....  | 51,581             | 73,315             | 73,315               |
| Science workforce development.....  | 6,432              | 7,660              | 7,660                |
| Science program direction   |                    |                    |                      |
| Field offices.....  | 79,629             | 89,341             | 89,341               |
| Headquarters.....   | 57,874             | 65,927             | 65,927               |
| Technical information management program.....   | 7,668              | ---                | ---                  |
| Energy research analyses.....   | 1,014              | ---                | ---                  |
| Total, Science program direction.....   | 146,185            | 155,268            | 155,268              |
| -----   |                    |                    |                      |
| Subtotal, Science.....  | 3,445,633          | 3,437,323          | 3,605,569            |
| =====   |                    |                    |                      |
| General reduction/use of prior year balances.....   | -9,941             | ---                | ---                  |
| Less security charge for reimbursable work.....   | -4,357             | -5,605             | -5,605               |
| Miscellaneous appropriations (P.L. 108-199).....  | 50,948             | ---                | ---                  |
| =====   |                    |                    |                      |
| TOTAL, SCIENCE.....   | 3,482,283          | 3,431,718          | 3,599,964            |
| =====   |                    |                    |                      |
| NUCLEAR WASTE DISPOSAL  |                    |                    |                      |
| Repository program.....   | 109,182            | 661,510            | ---                  |
| Program direction.....  | 79,697             | 87,490             | ---                  |
| =====   |                    |                    |                      |
| TOTAL, NUCLEAR WASTE DISPOSAL.....  | 188,879            | 749,000            | ---                  |
| =====   |                    |                    |                      |
| DEPARTMENTAL ADMINISTRATION   |                    |                    |                      |
| Administrative operations   |                    |                    |                      |
| Salaries and expenses   |                    |                    |                      |
| Office of the Secretary.....  | 4,226              | 5,441              | 4,649                |
| Board of contract appeals.....  | 649                | 653                | 653                  |
| Chief information officer.....  | 34,794             | 44,856             | 38,273               |
| Congressional and intergovernmental affairs.....  | 4,423              | 4,956              | 4,865                |
| Economic impact and diversity.....  | 4,673              | 5,400              | 5,140                |
| General counsel.....  | 19,882             | 23,349             | 21,870               |
| Office of Management, Budget and Evaluation.....  | 103,595            | 106,055            | 107,805              |
| Policy and international affairs.....   | 13,740             | 17,977             | 15,114               |
| Public affairs.....   | 3,831              | 4,649              | 2,464                |
| -----   |                    |                    |                      |
| Subtotal, Salaries and expenses.....  | 189,813            | 213,336            | 200,833              |