

Congressional Budget Request

Energy Supply Research and Development
Nuclear Waste Fund

Volume 2

FY 1988



U.S. Department of Energy
Assistant Secretary,
Management and Administration
Office of the Controller

January 1987

DEPARTMENT OF ENERGY
 FISCAL YEAR 1988 CONGRESSIONAL BUDGET REQUEST
 SUMMARY OF ESTIMATES BY APPROPRIATIONS
 BUDGET AUTHORITY IN THOUSANDS OF DOLLARS

| | FY 1986 <u>Actual</u> <u>BA</u> | FY 1987 <u>Estimate</u> <u>BA</u> | FY 1988 <u>Request</u> <u>BA</u> |
|--|---------------------------------------|---|--|
| Appropriations Before The Energy and Water Development Subcommittees: | | | |
| Energy Supply Research and Development | \$ 1,701,351 | \$ 1,254,131 | \$ 1,914,710 |
| Uranium Enrichment | 1,549,015 | 1,210,400 | 1,070,000 |
| General Science and Research | 659,059 | 719,517 | 814,498 |
| Atomic Energy Defense Activities .. | 7,292,405 | 7,481,852 | 8,050,000 |
| Departmental Administration | 235,676 | 139,509 | 166,133 |
| Alaska Power Administration | 3,245 | 2,881 | 3,026 |
| Bonneville Power Administration ... | 404,329 | 327,659 | 205,800 |
| Southeastern Power Administration . | --- | 19,647 | 27,400 |
| Southeastern - Continuing Fund | 4,028 | --- | --- |
| Southwestern Power Administration . | 29,180 | 25,337 | 16,648 |
| Western Area Power Administration . | 195,842 | 240,309 | 295,515 |
| Western Area Power Emergency Fund . | 147 | 225 | --- |
| Federal Energy Regulatory Commission | 45,107 | -3,465 | -900 |
| Nuclear Waste Fund | 499,037 | 499,000 | 500,000 |
| Geothermal Resources Development Fund | <u>69</u> | <u>72</u> | <u>72</u> |
| Subtotal, Appropriations Before the Energy and Water Development Subcommittees | <u>\$12,618,490</u> | <u>\$11,917,074</u> | <u>\$13,062,902</u> |

DEPARTMENT OF ENERGY
 FISCAL YEAR 1988 CONGRESSIONAL BUDGET REQUEST
 SUMMARY OF ESTIMATES BY APPROPRIATIONS
 BUDGET AUTHORITY IN THOUSANDS OF DOLLAR

| | <u>FY 1986</u> Actual <u>BA</u> | <u>FY 1987</u> Estimate <u>BA</u> | <u>FY 1988</u> Request <u>BA</u> |
|---|---------------------------------------|---|--|
| Appropriations Before Interior and Related Agencies Subcommittees: | | | |
| Alternative Fuels Production | \$ 2,775 | \$ --- | \$ --- |
| Clean Coal Technology | --- | --- | 50,000 |
| Fossil Energy Research and Development | 309,389 | 251,402 | 168,900 |
| Naval Petroleum and Oil Shale Reserves | 13,002 | 122,177 | 159,700 |
| Energy Conservation | 426,187 | 149,679 | 86,090 |
| Energy Regulation | 23,423 | 23,400 | 21,680 |
| Emergency Preparedness | 5,750 | 6,044 | 6,206 |
| Strategic Petroleum Reserve | 107,533 | 147,433 | 270,181 |
| Energy Information Activities | <u>57,724</u> | <u>60,301</u> | <u>61,599</u> |
| Subtotal, Interior and Related Agencies Subcommittees | 945,783 | 760,436 | 824,356 |
| Subtotal, Energy and Water Development Subcommittees | <u>12,618,490</u> | <u>11,917,074</u> | <u>13,062,902</u> |
| Subtotal, Department of Energy | 13,564,273 | 12,677,510 | 13,887,258 |
| Permanent - Indefinite Appropriations: | | | |
| Payments to States | <u>629</u> | <u>705</u> | <u>727</u> |
| Total, Department of Energy | <u>\$13,564,902</u> | <u>\$12,678,215</u> | <u>\$13,887,985</u> |

DEPARTMENT OF ENERGY
 FY 1988 CONGRESSIONAL STAFFING REQUEST
 TOTAL WORK FORCE

| | FY1986 FTE USAGE | FY1987 -FY86 | FY1987 CONGR REQ | FY1988 -FY87 | FY1988 CONGR REQ |
|-----------------------------|------------------------|-----------------|------------------------|-----------------|------------------------|
| ENERGY & WATER SUBCOMMITTEE | | | | | |
| HEADQUARTERS | 4,663 | 170 | 4,833 | 47 | 4,880 |
| FIELD | 9,393 | 62 | 9,455 | -4 | 9,451 |
| SUBCOMMITTEE TOTAL | 14,056 | 232 | 14,288 | 43 | 14,331 |
| | | | | | |
| INTERIOR SUBCOMMITTEE | | | | | |
| HEADQUARTERS | 1,254 | -13 | 1,241 | -104 | 1,137 |
| FIELD | 883 | 5 | 888 | -143 | 745 |
| SUBCOMMITTEE TOTAL | 2,137 | -8 | 2,129 | -247 | 1,882 |
| | | | | | |
| GRAND TOTAL | 16,193 | 224 | 16,417 | -204 | 16,213 |
| | | | | | |
| ADJUSTMENT | | -317 | -317 | 54 | -263 |
| | | | | | |
| ADJUSTED TOTAL | 16,193 | -93 | 16,100 | -150 | 15,950 |

DEPARTMENT OF ENERGY
 FY 1988 CONGRESSIONAL STAFFING REQUEST
 TOTAL WORK FORCE

| | FY1986 FTE USAGE | FY1987 -FY86 | FY1987 CONGR REQ | FY1988 -FY87 | FY1988 CONGR REQ |
|-------------------------------------|------------------------|-----------------|------------------------|-----------------|------------------------|
| 10 ENERGY SUPPLY RESEARCH AND DEV | 918 | 0 | 926 | 0 | 926 |
| HEADQUARTERS | 635 | 4 | 639 | 0 | 639 |
| FIELD | 283 | 4 | 287 | 0 | 287 |
| 15 OIL AND GAS ENRICHMENT | 65 | 2 | 67 | 0 | 67 |
| HEADQUARTERS | 54 | 2 | 56 | 0 | 56 |
| FIELD | 11 | 0 | 11 | 0 | 11 |
| 20 GENERAL SCIENCE AND RESEARCH | 38 | 1 | 39 | 0 | 39 |
| HEADQUARTERS | 38 | 1 | 39 | 0 | 39 |
| 25 ATOMIC ENERGY DEFENSE ACTIVITIES | 2,718 | 142 | 2,860 | 30 | 2,890 |
| HEADQUARTERS | 491 | 52 | 543 | 19 | 562 |
| FIELD | 2,227 | 90 | 2,317 | 11 | 2,328 |
| 30 DEPARTMENTAL ADMINISTRATION | 3,273 | 77 | 3,350 | 20 | 3,370 |
| HEADQUARTERS | 1,493 | 46 | 1,539 | 5 | 1,544 |
| FIELD | 1,500 | 31 | 1,611 | 15 | 1,626 |
| 34 ALASKA POWER ADMINISTRATION | 36 | 2 | 38 | -3 | 35 |
| FIELD | 36 | 2 | 38 | -3 | 35 |
| 36 IDAHO POWER ADMIN | 3,491 | -41 | 3,450 | -50 | 3,380 |
| FIELD | 3,491 | -41 | 3,450 | -50 | 3,380 |
| 38 SOUTHEASTERN POWER ADMIN | 38 | 2 | 40 | 0 | 40 |
| FIELD | 38 | 2 | 40 | 0 | 40 |
| 42 SOUTHWESTERN POWER ADMIN | 193 | -7 | 186 | 0 | 186 |
| FIELD | 193 | -7 | 186 | 0 | 186 |
| 46 WAPA - POWER MARKETING | 1,176 | -14 | 1,160 | 0 | 1,160 |
| FIELD | 1,176 | -14 | 1,160 | 0 | 1,160 |
| 50 WAPA - COLORADO RIVER BASIN | 219 | 0 | 219 | 0 | 219 |
| FIELD | 219 | 0 | 219 | 0 | 219 |
| 52 FEDERAL ENERGY REGULATORY COMM | 1,897 | 62 | 1,959 | 0 | 1,959 |
| HEADQUARTERS | 1,897 | 62 | 1,959 | 0 | 1,959 |
| 54 NUCLEAR WASTE FUND | 291 | 20 | 311 | 44 | 357 |
| HEADQUARTERS | 154 | 3 | 157 | 23 | 180 |
| FIELD | 137 | 17 | 154 | 23 | 177 |
| 56 GEOTHERMAL RESOURCES DEV FUND | 1 | 0 | 1 | 0 | 1 |
| HEADQUARTERS | 1 | 0 | 1 | 0 | 1 |
| 65 FOSSIL ENERGY RESEARCH AND DEV | 706 | -9 | 703 | -113 | 590 |
| HEADQUARTERS | 141 | -3 | 138 | 0 | 138 |
| FIELD | 565 | 0 | 565 | -113 | 452 |
| 70 MINERAL PETROL & OIL SHALE RES | 99 | -4 | 95 | 0 | 95 |
| HEADQUARTERS | 20 | 2 | 22 | 0 | 22 |
| FIELD | 79 | -4 | 73 | 0 | 73 |
| 75 ENERGY CONSERVATION | 322 | 30 | 352 | -109 | 243 |
| HEADQUARTERS | 201 | 26 | 227 | -84 | 143 |
| FIELD | 121 | 4 | 125 | -25 | 100 |
| 80 EMERGENCY PREPAREDNESS | 64 | 7 | 71 | 0 | 71 |
| HEADQUARTERS | 64 | 7 | 71 | 0 | 71 |
| 81 ECONOMIC REGULATION | 348 | -53 | 295 | -20 | 275 |
| HEADQUARTERS | 348 | -53 | 295 | -20 | 275 |
| 85 STRATEGIC PETROLEUM RESERVE | 152 | -0 | 147 | -5 | 142 |
| HEADQUARTERS | 34 | -12 | 22 | 0 | 22 |
| FIELD | 118 | 7 | 125 | -5 | 120 |
| 90 ENERGY INFORMATION ACTIVITIES | 446 | 20 | 466 | 0 | 466 |
| HEADQUARTERS | 446 | 20 | 466 | 0 | 466 |
| 94 ADVANCES FOR CO-OP WORK | 2 | 0 | 2 | 0 | 2 |
| FIELD | 2 | 0 | 2 | 0 | 2 |
| | | | | | |
| GRAND TOTAL | 16,193 | 274 | 16,417 | -204 | 16,213 |
| ADJUSTMENT | | -317 | -317 | 54 | -263 |
| ADJUSTED TOTAL | 16,193 | -93 | 16,100 | -150 | 15,950 |

ENERGY SUPPLY, RESEARCH AND DEVELOPMENT
ACTIVITIES

(Including Transfer of Funds)

For expenses of the Department of Energy activities including the purchase, construction and acquisition of plant and capital equipment and other expenses incidental thereto necessary for energy supply, research and development activities, and other activities in carrying out the purposes of the Department of Energy Organization Act (Public Law 95-91), including the acquisition or condemnation of any real property or any facility or for plant or facility acquisition, construction, or expansion; purchase of passenger motor vehicles (not to exceed [18] 21 for replacement only), [\$1,347,048,000,] \$1,909,710,000, to remain available until expended; [in addition \$684,158,000 shall be derived by transfer from Uranium Supply and Enrichment Activities provided in prior years and shall be available until expended; and of which \$84,100,000 which shall be available only for the Center for New Industrial Materials; the Center for New Industrial Materials; the Center for Nuclear Imaging Research; the Energy Research Complex; Saint Christopher's Hospital for Children - Energy Demonstration Project; Center for Excellence in Education - Energy Utilization Performance Project; the Institute of Nuclear Medicine; the Advanced Science Center; the Center for Science and Engineering; and funds provided for byproducts utilization activities shall be available only for the following regional projects: Florida Department of Agriculture and Consumer Services; Hawaii Department of Planning and Economic Development; Iowa State University; Oklahoma, Red-Ark Development Authority; Washington, Port of Pasco; State of Alaska.] (Energy and Water Development Appropriations Act, 1987 as included in Public Laws 99-500 and 99-591, section 101(e),) and in addition, as authorities by section 201 of Public Law 95-238 and notwithstanding 31 U.S.C. 3302, revenues received as user fees for use of the Liquefied Gaseous Fuels Spill Test Facility in Fiscal Year 1988 shall be retained and used to provide toxic and flammable spill test facilities and activities.

Explanation of Change

Deletes Language contained in Public Laws 99-500 and 99-591 which had specific application to fiscal year 1987.

Proposed Language provides fees from non-Federal users of the Liquefied Gaseous Fuels Spill Test Facility in Nevada to be received into the account as reimbursable expenses to be retained and used to operate, manage and maintain the facility.

DEPARTMENT OF ENERGY
 FISCAL YEAR 1988 CONGRESSIONAL BUDGET REQUEST
 SUMMARY OF ESTIMATES BY APPROPRIATION BY MAJOR ACTIVITY
 ENERGY SUPPLY RESEARCH AND DEVELOPMENT
 BUDGET AUTHORITY IN THOUSANDS OF DOLLARS

| | FY 1986 Actual | FY 1987 Estimate | FY 1988 Request |
|--|-------------------|---------------------|--------------------|
| Solar Energy | \$ 143,464 | \$ 123,532 | \$ 71,175 |
| Cooperative Venture R&D Pools | --- | --- | 5,000 |
| Geothermal | 26,495 | 20,830 | 15,935 |
| Hydropower | 481 | 450 | --- |
| Electric Energy Systems | 11,387 | 11,276 | 6,500 |
| Energy Storage Systems | 17,142 | 16,589 | 7,500 |
| Nuclear Energy R&D | 372,037 | 327,474 | 334,170 |
| Remedial Action & Waste Technology . | 229,915 | 276,870 | 251,500 |
| Civilian Waste R&D | 15,991 | 6,500 | 5,000 |
| Environmental, Safety and Health ... | 44,004 | 62,014 | 70,000 |
| Biological and Environmental Research | 178,000 | 193,992 | 217,500 |
| Liquified Gaseous Spill Test Facility | 1,732 | 2,000 | 500 |
| Magnetic Fusion | 361,480 | 345,313 | 345,600 |
| Basic Energy Sciences | 419,850 | 525,450 | 479,075 |
| Energy Research Analysis | 2,567 | 2,000 | 3,700 |

DEPARTMENT OF ENERGY
 FISCAL YEAR 1988 CONGRESSIONAL BUDGET REQUEST
 SUMMARY OF ESTIMATES BY APPROPRIATION BY MAJOR ACTIVITY
 ENERGY SUPPLY RESEARCH AND DEVELOPMENT (CONTINUED)

BUDGET AUTHORITY IN THOUSANDS OF DOLLARS

| | <u>FY 1986 Actual</u> | <u>FY 1987 Estimate</u> | <u>FY 1988 Request</u> |
|---|---------------------------|-----------------------------|----------------------------|
| University Research Instrumentation. | 6,176 | 5,000 | 5,000 |
| University Research Support | 10,168 | 15,775 | 13,400 |
| Advisory and Oversight Program Direction | 2,674 | 2,490 | 3,200 |
| Multi-Program Laboratories Facilities Support | 39,908 | 56,695 | 56,600 |
| Small Business Innovation Research Program | 29,137 | --- | --- |
| In-House Energy Management | 11,715 | 16,500 | 18,800 |
| Strategic Facilities Utilization Program | --- | --- | 2,175 |
| Technical Information and Management | 12,407 | 14,698 | 14,000 |
| Policy and Management | <u>3,497</u> | <u>3,874</u> | <u>4,300</u> |
| Subtotal, Energy Supply R&D ... | 1,940,227 | 2,029,322 | 1,930,710 |
| Less Use of Prior Year Balances and Other Adjustment | <u>-238,876</u> | <u>-775,191</u> | <u>-16,000</u> |
| Total, Energy Supply R&D..... | <u>\$1,701,351</u> | <u>\$1,254,131</u> | <u>\$1,914,710</u> |

DEPARTMENT OF ENERGY
FY 1988 CONGRESSIONAL BUDGET REQUEST
ENERGY SUPPLY RESEARCH AND DEVELOPMENT

OVERVIEW

Advisory and Oversight Program Direction

This program provides the Federal staffing resources and associated funding required by the Director of Energy Research to carry out his responsibilities under the Department of Energy Organization Act (P.L. 95-91) and as mandated by the Secretary in areas beyond the scope of the other assigned Energy Research programs. This staff performs and supports in-house and external analyses and studies to meet ER's responsibilities for monitoring the Department's research and development programs and advises the Secretary with respect to the well-being and management of the multiprogram laboratories. These responsibilities include advising on research activities carried out by any of the Assistant Secretaries; providing support for the Energy Research Advisory Board; operating the Department's multiprogram laboratory institutional planning process; providing Departmental oversight of the laboratory appraisal process; providing management oversight of the energy research multiprogram laboratories; addressing laboratory management issues; overseeing the Department's relationships and programs with the university community; and providing program management of the Energy Research Analysis, University Research Support, Multiprogram Energy Laboratories-Facilities Support (MEL-FS), University Research Instrumentation, and R&D Laboratory Technology Transfer programs.

DEPARTMENT OF ENERGY
 FY 1988 CONGRESSIONAL BUDGET REQUEST
 ENERGY SUPPLY RESEARCH AND DEVELOPMENT
 (dollars in thousands)

LEAD TABLE

Advisory and Oversight Program Direction

| | FY 1986 Actual ----- | FY 1987 Appropriation ----- | FY 1988 Base ----- | FY 1988 Request ----- | % Change from FY 1987 Approp. ----- |
|--|----------------------------|-----------------------------------|--------------------------|-----------------------------|---|
| Energy Oversight, Research Analysis and University Support | | | | | |
| Advisory and Oversight Program Direction | | | | | |
| Operating Expenses..... | \$2,674 | \$2,490 | \$2,702 | \$3,200 | 28.5% |
| Total..... | \$2,674 a/ | \$2,490 | \$2,702 | \$3,200 | 28.5% |
| Staffing (FTE's)..... | 44 | 44 | 44 | 44 | |

Authorization: Section 209, P.L. 95-91.

a/ Total has been reduced by \$106,000 in accordance with P.L. 99-177, The Balanced Budget and Emergency Deficit Control Act of 1985 (Gramm/Rudman/Hollings).

DEPARTMENT OF ENERGY
FY 1988 CONGRESSIONAL BUDGET REQUEST
ENERGY SUPPLY RESEARCH AND DEVELOPMENT
(dollars in thousands)

SUMMARY OF CHANGES

Advisory and Oversight Program Direction

| | |
|--|----------|
| FY 1987 Appropriation enacted..... | \$ 2,490 |
| Adjustments - Increased personnel costs attributable to the 1987 pay raise, increased agency contribution to the new Federal Employees Retirement System, and one additional day..... | + 212 |
| | <hr/> |
| FY 1988 Base..... | 2,702 |
| - Increased personnel costs to replace unobligated carryover in order to maintain the FTE level and to provide for within-grade and merit increases and associated benefits and support costs..... | + 498 |
| | <hr/> |
| FY 1988 Congressional Budget Request..... | \$ 3,200 |

DEPARTMENT OF ENERGY
 FY 1988 CONGRESSIONAL BUDGET REQUEST
 ENERGY SUPPLY RESEARCH AND DEVELOPMENT
 (dollars in thousands)

KEY ACTIVITY SUMMARY

OFFICE OF ENERGY RESEARCH

I. Preface: Advisory and Oversight Program Direction

This program provides the staffing and associated funding resources as described in the Overview statement.

II. A. Summary Table

| Program Activity | FY 1986 | FY 1987 | FY 1988 | % Change |
|---|----------|----------|----------|----------|
| Advisory and Oversight Program Direction..... | \$ 2,674 | \$ 2,490 | \$ 3,200 | + 28.5% |
| Total, Advisory and Oversight... | \$ 2,674 | \$ 2,490 | \$ 3,200 | + 28.5% |

III. Activity Descriptions

| Program Activity | FY 1986 | FY 1987 | FY 1988 |
|--|--|---|--|
| Advisory and Oversight Program Direction | <p>Provided funds for the salaries, benefits, and travel for 44 FTE's in the Office of Field Operations Management, Office of Program Analysis, Science and Technology Affairs Staff, and related program and management support staff. (\$2,554)</p> <p>The Office of Program Analysis (OPA) provided technical assessments, independent peer reviews and program evaluations, and interagency coordination of research assessments. Represented DOE on the Interagency Task Force on Acid Precipitation providing assistance as required by the National Acid Precipitation Assessment Plan.</p> | <p>Provide for personnel-related costs associated with continuation of the authorized level of 44 FTE's. Use of \$287 prior year unobligated carryover will be required for salaries, benefits, and travel, to maintain and support the required FTE level and to fund the 1987 pay raise and the increased agency contribution to the new Federal Employees Retirement System. (\$2,490)</p> <p>Continue to support the Director, Office of Energy Research, as required, including increased responsibilities for OPA staff due to cuthack in FY 1987 funding. Continue support for the first interim assessment required by the National Acid Precipitation Assessment Plan.</p> | <p>Continue staff activities at the FY 1987 level of effort. Provide increased funds due to lack of unobligated carryover to maintain and support the FTE level and provide for the normal increased personnel costs such as within-grade and merit increases, impact of the 1987 pay raise, and the increased agency contribution to the Federal Employees Retirement System as participation increases. (\$3,125)</p> <p>Continue to provide technical assessments and independent peer reviews and program evaluations, including assessments deferred due to lowered FY 1987 funding. Support the 1988 second interim assessment as required by the National Acid Precipitation Assessment Plan.</p> |

III. Advisory and Oversight Program Direction (Cont'd)

| Program Activity | FY 1986 | FY 1987 | FY 1988 |
|---|--|--|---------|
| <p>The Office of Field Operations Management continued to develop and implement university research and manpower development programs in support of DOE long term/cross technology R&D program goals, coordinate improved and expanded DOE-university relationships including initiation of an annual report/evaluation for the Secretary on DOE-university relationships. Managed the University Reactor Fuel Assistance program, the University Laboratory Coop program, and the University Research Instrumentation program. Supported the Director in oversight of the management and well-being of DOE's multiprogram nonweapons laboratories, including management of the MEL-FS construction program and the ORNL environmental upgrade program.</p> | <p>Continue to strengthen DOE-university relationships through expanded university research and manpower development programs, including expansion of support for the University Laboratory Cooperative program. Convert university reactors to low enriched uranium (LEU) fuel. Continue to manage the University Research Instrumentation program. Continue to support laboratory management overview and MEL-FS program. Meet increased requirements to participate in Government-wide working groups on work for others programs, implementation of new patent legislation by the laboratories, and oversight of technology transfer activities. Meet increased ES&H responsibilities of the MEL-FS program.</p> | <p>Continue program management as in FY 1987 and provide for significant expansion of faculty/student research training opportunities at the Department's Laboratories and conversion of university nuclear reactors to LEU fuel. Provide increased oversight and close coordination with the operations offices on high visibility new projects under the strengthened work for others policy and as a result of patent rights being granted to the labs by P.L. 96-517. Provide increased emphasis on improving U.S. industrial competitiveness.</p> | |
| <p>The Science and Technology Affairs Staff provided ongoing support to the Energy Research Advisory Board. Supported the Lawrence and Fermi Awards process. Supported the Director of ER in his role as science advisor to the Secretary of Energy.</p> | <p>Continue staff activities at approximately the FY 1986 level of effort.</p> | <p>Continue staff activities at approximately the FY 1987 level of effort.</p> | |
| <p>Provided program and management support in the areas of budget and finance, personnel administration, acquisition and assistance, policy and coordination, and construction, environment and safety.</p> | <p>Continue staff activities at approximately the FY 1986 level of effort.</p> | <p>Continue staff activities at approximately the FY 1987 level of effort.</p> | |
| <p>Provided program support such as printing, small purchases of supplies and materials, and contractual support. (\$120)</p> | <p>Provide for a variety of program support services such as printing, supplies and materials, timesharing on various information systems and communications networks such as electronic mail, and contractor support for technical writing and editing using \$50 of prior year unobligated funds. (\$0)</p> | <p>Provide funds to allow a required slight increase in the level of program support activities for such things as printing, supplies, materials, timesharing and information services, and contractor support. (\$75)</p> | |
| <p>Total, Advisory and Oversight Program Direction \$2,674</p> | <p>\$2,490</p> | <p>\$3,200</p> | |