

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>

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	<u>FY 1986 Actual BA</u>	<u>FY 1987 Estimate BA</u>	<u>FY 1988 Request 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
18 URANIUM 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
23 ATOMIC ENERGY DEFENSE ACTIVITI	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 DONNEVILLE 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 MINNAPL 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	24	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	224	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

Technical Information Management Program

The information generated by the multi-billion dollar research and development (R&D) program of the Department of Energy (DOE) is captured in some 40,000 summaries per year reporting the results of this major investment of tax dollars. The Technical Information Management Program (TIMP) was established by DOE to gather, organize, analyze, and disseminate this R&D information to DOE-funded investigators and program managers and to facilitate access to the information by other Government organizations, industry, academia, and the general public. In addition to assuring cost-effective and efficient management, control, and accountability for the information resulting from DOE-funded R&D, the TIMP has the further responsibility of collecting, analyzing, and disseminating the results of energy-related R&D from worldwide sources for the use of DOE and other U.S. scientists, engineers, managers and policy-makers.

To achieve these goals, the TIMP carries out the following activities on a continuing basis:

- o Manages the Department's master file of information on worldwide energy R&D. This database helps program managers as well as working scientists and engineers to determine what research has already been completed before new projects are begun. Some 200,000 records reporting completed research are added each year.
- o Recommends technical information management policy, standards and procedures for the Department.
- o Operates a system to control the dissemination of classified and sensitive information produced by DOE R&D programs.
- o Advises and assists DOE field sites in assuring that Departmental policies and procedures are followed for the management of scientific and technical information.
- o Negotiates and carries out bilateral and multilateral agreements for the international exchange of energy R&D information to support the Department's domestic and international collaborative R&D programs.

- o Maintains a database on energy-related research in progress, so that DOE researchers can determine what research is under way before new projects are begun.
- o Assists program managers in the dissemination of the results of DOE-funded research.
- o Assures the availability of DOE research results to other Government agencies, industry, academia and the general public.
- o Monitors the receipt of information deliverables from R&D contracts to assure that contracted requirements are met.

The TIMP strategic objectives for FY 1988 and following years are to steadily increase the efficiency and effectiveness of the program through:

1. Introducing new information-handling technology as it becomes available to enhance system capabilities without increasing costs;
2. Closely monitoring information needs of the Department to assure that services provided match the priority requirements of DOE and its contractors;
3. Making full use of commercial services whenever appropriate and available;
4. Actively pursuing opportunities to acquire research results from abroad in a timely and comprehensive fashion at minimum cost; and
5. Controlling the flow of information abroad in a manner designed to support DOE collaborative research projects while protecting the security and economic interests of the United States.

During 1988 substantial progress will have been made on the conversion to a much improved information processing system at Oak Ridge, using state-of-the-art equipment and offering a much broader range of information service possibilities at relatively low cost. As we continue to seek efficiencies and provide improved services we will explore opportunities such as utilizing new optical disk technology for providing economical on-demand report distribution services, and particular attention will be given to identifying the needs of DOE investigators for computerized access to evaluated numerical and factual data.

The gross costs of operating the Technical Information Management Program are partially offset by collections from users of its products and services.

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

LEAD TABLE

Technical Information Management Program

<u>Activity</u>	<u>FY 1986</u>	<u>FY 1987 Appropriation</u>	<u>FY 1988 Base</u>	<u>FY 1988 Request</u>	<u>% Change from FY 1987 Approp.</u>
Technical Information Management Program					
Operating Expenses	\$ 13,066	\$ 13,848	\$ 13,893	\$ 13,100	- 5
Capital Equipment	550	850	850	900	+ 6
Subtotal	<u>\$ 13,616</u>	<u>\$ 14,698</u>	<u>\$ 14,743</u>	<u>\$ 14,000</u>	<u>- 5</u>
Less transfer of prior year unobligated authority	- 1,209	- 4,923 ^{1/}	0	0	- 100
Net Budget Authority	<u>\$ 12,407</u>	<u>\$ 9,775</u>	<u>\$ 14,743</u>	<u>\$ 14,000</u>	<u>+ 43</u>
Staffing (FTEs)	171	175	175	175	

Authorization: Section 31, P.L. 83-703

^{1/} To be reprogrammed from prior year unobligated funds.

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

SUMMARY OF CHANGES

Technical Information Management Program

FY 1987 Appropriation enacted	\$ 9,775
Plus obligational authority to be reprogrammed from prior year unobligated funds	+ 4,923
Adjustment for pay increase	<u>+ 45</u>
FY 1988 Base	14,743
Cost savings from contract consolidation, program efficiencies, and additional cost recovery from users will enable program activities to be continued at base level with reduced appropriations.	<u>- 743</u>
FY 1988 Congressional Budget Request	\$ 14,000

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

KEY ACTIVITY SUMMARY

TECHNICAL INFORMATION MANAGEMENT PROGRAM

I. Preface: Technical Information Management Program

The information generated by the multi-billion dollar research and development (R&D) program of the Department of Energy (DOE) is captured in some 40,000 summaries per year reporting the results of this major investment of tax dollars. The Technical Information Management Program (TIMP) was established by DOE to gather, organize, analyze, and disseminate this R&D information to DOE-funded investigators and program managers and to facilitate access to the information by other Government organizations, industry, academia, and the general public. In addition to assuring cost-effective and efficient management, control, and accountability for the information resulting from DOE-funded R&D, the TIMP has the further responsibility of collecting, analyzing, and disseminating the results of energy-related R&D from worldwide sources for the use of DOE and other U.S. scientists, engineers, managers and policy-makers.

II. A. Summary Table

	<u>FY 1986</u>	<u>FY 1987</u>	<u>FY 1988</u>	<u>\$ Change</u>
Operating Expenses	\$ 13,066	\$ 13,848	\$ 13,100	- 5
Capital Equipment	550	850	900	+ 6
Subtotal	\$ 13,616	\$ 14,698	\$ 14,000	- 5
Less transfer of prior year unobligated authority	- 1,209	- 4,923	0	- 100
Net Budget Authority	\$ 12,407	9,775	\$ 14,000	+ 43

II. B. Major Laboratory and Facility Funding

Argonne National Laboratory	\$ 200	\$ 0	\$ 0	0
Oak Ridge National Laboratory	\$ 504	\$ 208	\$ 200	- 4

III. Activity Descriptions

Program Activity

Technical Information Management Program

	<u>FY 1986</u>	<u>FY 1987</u>	<u>FY 1988</u>
- Program Direction	Provided for maintaining facility services (utilities, janitorial, telecommunications, maintenance). Also provided for FTEs required to manage the Department's centralized technical information program including: managing the master file of information on worldwide energy R&D; recommending policies and procedures; operating a system to control the dissemination of classified and sensitive information; negotiating and carrying out bilateral and multilateral agreements for the exchange of information; maintaining a database on energy-related research in progress so that DOE researchers can determine what research has been completed or under way before new projects are started; and monitoring the receipt of information deliverables from R&D contracts to assure that contract requirements are met. (\$7,369)	Continued facility services and FTEs for management of centralized technical information program. Finalized new International Energy Agency (IEA) working agreement for multilateral exchange of energy R&D information. (\$7,600)	Continue same level of facility services and management. Escalation increases offset by management efficiencies. (\$7,600)

III. Activity Descriptions (Cont'd)

	<u>FY 1986</u>	<u>FY 1987</u>	<u>FY 1988</u>
- Acquisition and Appraisal	Provided for contract services to acquire and evaluate scientific and technical information which is made available to DOE scientists and engineers, and to meet requirements of certain international exchange agreements. (\$1,865)	Continued same level of acquisition and evaluation services. Reduced funding requirements through consolidation of contracts. (\$1,600)	Maintain same level of services. Further contract consolidation savings reflected. (\$1,500)
- Systems and Technology	Provided for contract services and equipment required to develop, build, and maintain information systems and to provide automated access to scientific and technical information. (\$2,120)	Additional funds required for converting DEC 10 systems to more efficient VAX cluster and operating dual systems during interim period. (\$2,600)	Maintain basic information systems but will reduce funding requirements through contract efficiencies. (\$2,400)
- Products and Services	Provided for contract services, equipment and supplies required to produce and make available information resulting from DOE's energy research. (\$2,262)	Continued to provide essential products and services. Provided \$300,000 additional capital equipment funds to replace old and inefficient duplicating equipment. (\$2,898)	Continue to provide same level of products and services. Funding requirements will be reduced by contract efficiencies and additional cost recovery from users. (\$2,500)
Total	<u>\$13,616</u>	<u>\$14,698</u>	<u>\$14,000</u>

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

OBJECT CLASS

Technical Information Management Program

	<u>FY 1986</u>	<u>FY 1987 Estimate</u>	<u>FY 1988 Estimate</u>
Direct Funding:			
11.1 Full-time permanent	\$ 4,761	\$ 4,942	\$ 5,057
11.3 Other than full-time	400	414	422
11.5 Other Compensation	146	153	154
11.9 Total - personnel compensation	<u>5,307</u>	<u>5,509</u>	<u>5,633</u>
12.1 Benefits	611	634	648
21.0 Travel	130	135	140
25.0 Other Services	7,018	7,570	6,679
31.0 Equipment	<u>550</u>	<u>850</u>	<u>900</u>
99.0 Subtotal	13,616	14,698	14,000
Funding Source: Less transfer of prior year unobligated authority	- 1,209	- 4,923	0
Net Authority	<u>\$12,407</u>	<u>\$ 9,775</u>	<u>\$14,000</u>