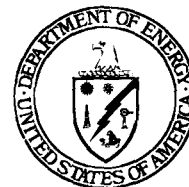


Congressional Budget Request

Energy Supply Research and Development
Nuclear Waste Fund
Isotope Production and Distribution Fund
Basic Research User Facilities

Volume 2

FY 1989



U.S. Department of Energy

Assistant Secretary,
Management and Administration
Office of the Controller
Washington, D.C. 20585

February 1988

DEPARTMENT OF ENERGY
FISCAL YEAR 1989 CONGRESSIONAL BUDGET REQUEST
ENERGY SUPPLY RESEARCH AND DEVELOPMENT
NUCLEAR WASTE FUND
ISOTOPE PRODUCTION AND DISTRIBUTION FUND
BASIC RESEARCH USER FACILITIES

VOLUME 2
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DEPARTMENT OF ENERGY
 FISCAL YEAR 1989 CONGRESSIONAL BUDGET REQUEST
 SUMMARY OF ESTIMATES BY APPROPRIATIONS
 BUDGET AUTHORITY IN THOUSANDS OF DOLLARS

	FY 1987 ACTUAL	FY 1988 ESTIMATE	FY 1989 REQUEST
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APPROPRIATIONS BEFORE THE ENERGY AND WATER DEVELOPMENT SUBCOMMITTEES:			
ENERGY SUPPLY RESEARCH AND DEVELOPMENT..	\$1,258,137	\$1,860,087	\$1,969,760
URANIUM ENRICHMENT.....	1,209,494	950,000	1,184,000
GENERAL SCIENCE AND RESEARCH.....	326,596	355,108	364,986
ISOTOPE PRODUCTION AND DISTRIBUTION FUND	509	89	16,243
BASIC RESEARCH USER FACILITIES.....	473,206	574,945	972,613
ATOMIC ENERGY DEENSE ACTIVITIES.....	7,481,852	7,749,364	8,100,000
DEPARTMENTAL ADMINISTRATION.....	226,874	164,243	177,814
ALASKA POWER ADMINISTRATION.....	2,881	3,026	3,159
BONNEVILLE POWER ADMINISTRATION.....	432,259	165,000	136,000
SOUTHEASTERN POWER ADMINISTRATION.....	19,647	27,400	36,267
SOUTHEASTERN - CONTINUING FUND.....	3,772	---	---
SOUTHWESTERN POWER ADMINISTRATION.....	25,337	16,648	15,389
WESTERN AREA POWER ADMINISTRATION.....	238,008	249,515	298,413
WESTERN AREA POWER EMERGENCY FUND.....	225	24	---
FEDERAL ENERGY REGULATORY COMMISSION....	99,079	100,000	106,760
NUCLEAR WASTE FUND.....	499,000	360,000	448,832
GEOHERMAL RESOURCES DEVELOPMENT FUND....	72	72	75
	-----	-----	-----
SUBTOTAL, APPROPRIATIONS BEFORE THE ENERGY AND WATER DEVELOPMENT SUBCOMMITTEES.....	12,296,948	12,575,521	13,830,311

DEPARTMENT OF ENERGY
 FISCAL YEAR 1989 CONGRESSIONAL BUDGET REQUEST
 SUMMARY OF ESTIMATES BY APPROPRIATIONS
 BUDGET AUTHORITY IN THOUSANDS OF DOLLARS

	FY 1987 ACTUAL -----	FY 1988 ESTIMATE -----	FY 1989 REQUEST -----
APPROPRIATIONS BEFORE THE INTERIOR AND RELATED AGENCIES SUBCOMMITTEES:			
ALTERNATIVE FUELS PRODUCTION.....	437	---	---
CLEAN COAL TECHNOLOGY.....	---	50,000	525,000
FOSSIL ENERGY RESEARCH AND DEVELOPMENT..	293,171	326,975	166,992
NAVAL PETROLEUM AND OIL SHALE RESERVES..	122,177	159,663	185,071
ENERGY CONSERVATION.....	232,362	309,517	89,359
ENERGY REGULATION.....	23,400	21,565	20,772
EMERGENCY PREPAREDNESS.....	6,044	6,172	6,154
STRATEGIC PETROLEUM RESERVE.....	147,433	164,162	173,421
STRATEGIC PETROLEUM ACCOUNT.....	---	438,744	1,017,907
ENERGY INFORMATION ACTIVITIES.....	60,301	61,398	62,856
	-----	-----	-----
SUBTOTAL, INTERIOR AND RELATED AGENCIES SUBCOMMITTEES.....	885,325	1,538,196	2,247,532
SUBTOTAL, ENERGY AND WATER DEVELOPMENT SUBCOMMITTEES.....	12,296,948	12,575,521	13,830,311
	-----	-----	-----
SUBTOTAL, DEPARTMENT OF ENERGY.....	13,182,273	14,113,717	16,077,843
PERMANENT - INDEFINITE APPROPRIATIONS:			
PAYMENTS TO STATES.....	912	1,839	1,909
	-----	-----	-----
TOTAL, DEPARTMENT OF ENERGY.....	\$13,183,185	\$14,115,556	\$16,079,752
	=====	=====	=====

DEPARTMENT OF ENERGY
 FY 1989 CONGRESSIONAL STAFFING REQUEST
 TOTAL WORK FORCE

	FY1987 FTE USAGE	FY1988 -FY87	FY1988 CONGR REQ	FY1989 -FY88	FY1989 CONGR REQ
ENERGY & WATER SUBCOMMITTEE					
HEADQUARTERS	4,697	264	4,961	73	5,034
FIELD	9,356	58	9,414	-75	9,339
SUBCOMMITTEE TOTAL	14,053	322	14,375	-2	14,373
INTERIOR SUBCOMMITTEE					
HEADQUARTERS	1,181	66	1,247	-111	1,136
FIELD	882	25	907	-140	767
SUBCOMMITTEE TOTAL	2,063	91	2,154	-251	1,903
GRAND TOTAL	16,116	413	16,529	-253	16,276
ADJUSTMENT		-263	-263	-209	-472
ADJUSTED TOTAL	16,116	150	16,266	-462	15,804

DEPARTMENT OF ENERGY
 FY 1989 CONGRESSIONAL STAFFING REQUEST
 TOTAL WORK FORCE

	FY1987 FTE USAGE	FY1988 -FY87	FY1988 CONGR REQ	FY1989 -FY88	FY1989 CONGR REQ
10:ENERGY SUPPLY RESEARCH AND DEV	922	14	936	10	946
HEADQUARTERS	644	7	651	10	661
FIELD	278	7	285	0	285
15:URANIUM ENRICHMENT	59	8	67	0	67
HEADQUARTERS	48	8	56	0	56
FIELD	11	0	11	0	11
20:GENERAL SCIENCE AND RESEARCH	42	-3	39	7	46
HEADQUARTERS	42	-3	39	7	46
25:ATOMIC ENERGY DEFENSE ACTIVITI	2,782	88	2,870	40	2,910
HEADQUARTERS	492	62	554	21	575
FIELD	2,290	26	2,316	19	2,335
30:DEPARTMENTAL ADMINISTRATION	3,333	133	3,466	6	3,472
HEADQUARTERS	1,756	79	1,835	6	1,841
FIELD	1,577	54	1,631	0	1,631
34:ALASKA POWER ADMINISTRATION	36	-1	35	0	35
FIELD	36	-1	35	0	35
36:BONNEVILLE POWER ADMIN	3,398	-18	3,380	-50	3,330
FIELD	3,398	-18	3,380	-50	3,330
38:SOUTHEASTERN POWER ADMIN	38	2	40	0	40
FIELD	38	2	40	0	40
42:SOUTHWESTERN POWER ADMIN	192	-6	186	0	186
FIELD	192	-6	186	0	186
46:WAPA - POWER MARKETING	1,160	-21	1,139	0	1,139
FIELD	1,160	-21	1,139	0	1,139
50:WAPA - COLORADO RIVER BASIN	219	21	240	0	240
FIELD	219	21	240	0	240
52:FEDERAL ENERGY REGULATORY COMM	1,562	97	1,659	0	1,659
HEADQUARTERS	1,562	97	1,659	0	1,659
54:NUCLEAR WASTE FUND	307	8	315	-15	300
HEADQUARTERS	152	14	166	29	195
FIELD	155	-6	149	-44	105
56:GEOTHERMAL RESOURCES DEV FUND	1	0	1	0	1
HEADQUARTERS	1	0	1	0	1
63:CLEAN COAL TECHNOLOGY	0	45	45	13	58
HEADQUARTERS	0	21	21	5	26
FIELD	0	24	24	8	32
65:FOSSIL ENERGY RESEARCH AND DEV	709	-6	703	-133	570
HEADQUARTERS	141	-3	138	-10	128
FIELD	568	-3	565	-123	442
70:NAVAL PETROL & OIL SHALE RES	89	6	95	0	95
HEADQUARTERS	17	5	22	0	22
FIELD	72	1	73	0	73
75:ENERGY CONSERVATION	320	32	352	-109	243
HEADQUARTERS	197	30	227	-84	143
FIELD	123	2	125	-25	100
80:EMERGENCY PREPAREDNESS	64	7	71	0	71
HEADQUARTERS	64	7	71	0	71
81:ECONOMIC REGULATION	288	-13	275	-22	253
HEADQUARTERS	288	-13	275	-22	253
85:STRATEGIC PETROLEUM RESERVE	147	0	147	0	147
HEADQUARTERS	28	-1	27	0	27
FIELD	119	1	120	0	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	 16,116	 413	 16,529	 -253	 16,276
ADJUSTMENT		-263	-263	-209	-472
ADJUSTED TOTAL	16,116	150	16,266	-462	15,804

DEPARTMENT OF ENERGY
FY 1989 CONGRESSIONAL BUDGET REQUEST
OFFICE OF ENERGY RESEARCH

OVERVIEW

ENERGY RESEARCH ANALYSIS

The Office of Program Analysis (OPA) manages the Energy Research Analysis Program to fulfill one of the major responsibilities of the Director of the Office of Energy Research. The Department of Energy Organization Act (Public Law 95-91) states "...It shall be the duty and responsibility of the Director-- [of the Office of Energy Research] 1) to advise the Secretary with respect to the physical research program... (and) 2) to monitor the Department's energy research and development programs in order to advise the Secretary with respect to any undesirable duplication or gaps in such programs..." Accordingly, the Office of Program Analysis arranges for and participates in the assessments of research projects and programs in order to judge the significance of these efforts and to identify undesirable duplications and gaps.

There are three types of independent technical assessments performed by OPA on research programs throughout the Department. First, OPA staff performs comprehensive project by project evaluations of major programs using outside experts from industry, academia and the National Laboratories. These peer reviews provide the basis for judgments on the quality of the research and its impact. DOE Principal Officers responsible for energy R&D recognize that without this program less technically competitive projects might be funded. Second, technical assessments provide independent views on the directions that future R&D in specific areas should take to be more productive and relevant to DOE missions. Research assessments are performed by contractors and OPA staff drawing on the world's leading experts in the specific fields being addressed. Tasks by the Foreign Applied Sciences Assessment Center (FASAC) and JASON's are included in these assessments.

In addition, the Energy Research Advisory Board (ERAB) funded by this office addresses questions posed directly by the Secretary or the Director, Office of Energy Research, and provides views based upon their expertise. Third, OPA investigates the accomplishments of programs by determining specific advances in science or marketable products that arise from the program's R&D. Accounts of scientific developments are prepared in lay English to communicate the program's accomplishments to the general public.

OPA also has the responsibility within DOE for providing financial support for management of the National Acid Precipitation Assessment Program (NAPAP) created by the Acid Precipitation Act of 1980 (P.L. 96-294). OPA provides funds under NAPAP for summarizing and synthesizing the state of the science in acid rain research and producing assessment reports useful for policymakers.

DEPARTMENT OF ENERGY
 FY 1989 CONGRESSIONAL BUDGET REQUEST
 ENERGY SUPPLY RESEARCH AND DEVELOPMENT
 (dollars in thousands)

LEAD TABLE

ENERGY RESEARCH ANALYSIS

Activity	FY 1987	FY 1988	FY 1989 Base	FY 1989 Request	Program Change Request vs Base	
					Dollar	Percent
Energy Research Analysis (OE)	\$1,979	\$3,700	\$3,700	\$3,800	\$+ 100	+ 3%

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

DEPARTMENT OF ENERGY
FY 1989 CONGRESSIONAL BUDGET REQUEST
ENERGY SUPPLY RESEARCH AND DEVELOPMENT
OFFICE OF ENERGY RESEARCH
(dollars in thousands)

SUMMARY OF CHANGES

Energy Research Analysis

FY 1988 Appropriation	<u>\$ 3,700</u>
FY 1989 Base	3,700
- Provides for a cost of living increase for each of the Assessment and Acid Rain activities	<u>+ 100</u>
FY 1989 Congressional Budget Request	<u>\$ 3,800</u>

DEPARTMENT OF ENERGY
 FY 1989 CONGRESSIONAL BUDGET REQUEST
 OFFICE OF ENERGY RESEARCH
 (dollars in thousands)

KEY ACTIVITY SUMMARY

ENERGY RESEARCH ANALYSIS

I. Preface: Energy Research Analysis

The Office of Program Analysis manages the Energy Research Analysis program to fulfill one of the responsibilities of the Director, Office of Energy Research. The Department of Energy's Organization Act (Public Law 95-91) states "It shall be the duty and responsibility of the Director--(Office of Energy Research) 1) to advise the Secretary with respect to the physical research program... (and) 2) to monitor the Department's energy research and development programs in order to advise the Secretary with respect to any undesirable duplication or gaps in such programs..." Accordingly, the Office of Program Analysis assesses research projects and programs in order to judge the significance of these efforts and to identify undesirable duplications and gaps.

II. A. Summary Table

Program Activity -----	FY 1987 -----	FY 1988 -----	FY 1989 -----	% Change -----
Program Technology Assessment..	\$ 1,429	\$ 2,550	\$ 2,600	+ 2
Acid Rain Support.....	550	1,150	1,200	+ 4
	-----	-----	-----	----
Total Energy Research Analysis.	\$ 1,979	\$ 3,700	\$ 3,800	+ 3

II. B. Major Laboratory and Facility Funding

Argonne National Laboratory....	\$ 135	\$ 105	\$ 100	- 5
Brookhaven National Laboratory.	\$ 290	\$ 141	\$ 400	+184
Oak Ridge National Laboratory..	\$ 188	\$ 605	\$ 400	- 34
Pacific Northwest Laboratory...	\$ 345	\$ 415	\$ 450	+ 8

III. Activity Descriptions

Program Activity	FY 1987	FY 1988	FY 1989
ENERGY RESEARCH ANALYSIS			
Program Technology Assessment	Perform technical assessments of Coal Gasification, peer review of the Advanced Research and Technology Development (AR&TD/FE) program, and accomplishments of the Basic Energy Sciences (BES) program. Support advisory committees such as ERAB, JASON, and FASAC.	Perform technical assessments of Coal Liquefaction (FE). Prepare Program Accomplishments of High Energy Physics (ER) and lay language version of BES; conduct Peer Reviews of Advanced Process Technology (APT/FE), and Small Business Innovation Research (ER). Fact finding surveys of the Exploratory Funds R&D (ER) and Ceramics Research (DOE). Support ERAB, JASON, FASAC, SBIR and ETSAP.	Perform technical assessments of membrane separations (ER, CE); laser instrumentation (ER); and catalysis (FE, CE, ER) for research needs. Prepare Program Accomplishments of Advanced Research & Technology Development (FE) for the nonscientific community. Conduct Peer Reviews in Conservation & Solar Renewable programs. Support ERAB, JASON, FASAC, SBIR and ETSAP.
	\$ 1,429	\$ 2,550	\$ 2,600
Acid Rain Support	Provide DOE share of support for NAPAP management and technical staff under P.L. 96-294. Conclude interim assessment. Assess interim results of major research projects, including the National Stream Survey, the Mountain-Cloud Network, and the National Trends Network.	Provide DOE share of NAPAP management and technical staff under P.L. 96-294. Begin final assessment for 1990 concluding the 10-year NAPAP program. Assess the results of the first phase validation of the Regional Atmospheric Deposition Model and the Materials Research Program. Perform research needs assessment of the MAP3S program (ER).	Provide DOE share of support for NAPAP management and technical staff under P.L. 96-294. Draft Final Assessment for 1990 concluding the 10-year NAPAP program. Assess the results of the second phase validation for the Regional Atmospheric Deposition Model, the Direct-Delayed Response Program, the National Forest and Soils Surveys. Synthesize the results of over \$380 million worth of Federally funded acid rain research funded through FY 1988 to prepare for use by decision makers.
	\$ 550	\$ 1,150	\$ 1,200
Total Energy Research Analysis	\$ 1,979	\$ 3,700	\$ 3,800