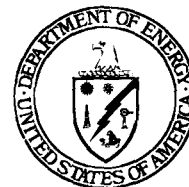


Congressional Budget Request

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 -----
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

UNIVERSITY RESEARCH SUPPORT

Since the establishment of the Department of Energy in 1977, DOE has strongly supported close interactions with the Nation's universities. This objective was reemphasized in 1984 with the issuance of policy guidelines from the Secretary. The Secretarial guidelines note the importance to DOE of stable and comprehensive university research, technology transfer, and manpower development programs, both directly and through the Department's laboratories. Special emphasis was given to the importance of involving students and U.S. industry in DOE sponsored research.

The University Research Support (URS) program and the related University Research Instrumentation (URI) program are the primary approaches used by DOE to strengthen the institutional capabilities of universities and colleges and the private sector to effectively contribute to the Department's long range R&D mission. The URS program consists of four major subprograms and a set of interrelated program activities focused on the following primary objectives:

1. Strengthen university capability to perform long-range energy R&D;
2. Utilize the unique resources of the Department's laboratories (scientists, facilities, equipment) to assist in the national effort to revitalize the nation's economic competitiveness;
3. Enhance the quality and increase the numbers of young people interested in pursuing energy-related scientific and technical professional careers;
4. Take full advantage of the unique resources and facilities at the DOE national laboratories for university faculty and student research and training.

The first URS subprogram, Laboratory Cooperative Science Centers, includes support for faculty and student research and training appointments at the DOE laboratories and for university-based nuclear research and training using university research reactors. The essential roles played by the Department's laboratories in assisting in university research and manpower development have been underscored in recent ERAB and White House Science Council reports on the health of U.S. colleges, universities and industry. Consistent with these analyses and the President's goal of improving our national science and technology research and education base, an initiative was begun in FY 1988 to support semester-length research appointments at five DOE multiprogram laboratory science centers involved in science education. This activity was built upon the University Laboratory Cooperative

program (established in 1960) and provides significant additional opportunities for university faculty and students to use DOE laboratory facilities on a year round basis. Support is provided for semester-length appointments for undergraduate science and engineering students selected nationally, based on academic merit and future research interests. The emphasis on undergraduate student support is directly responsive to the White House Science Council Report which recommends that Federal agencies provide additional research and training opportunities for the best and brightest undergraduate science and engineering students.

The second URS subprogram, R&D Laboratory Technology Transfer provides support to industry scientists and engineers to work on assignment at a national laboratory side-by-side with DOE's scientists to transfer federally supported expertise to the private sector for commercial applications. These assignments are cost-shared with industry and involve both large and small size companies. Support is also provided for pilot laboratory initiatives to improve spin-off of federally funded R&D to U.S. industry and for better communication of the technology transfer opportunities that are available at the laboratories.

The third URS subprogram, University Reactor Fuel Assistance, provides support for refueling and related activities for university nuclear research and training reactors. The National Academy of Science/National Research Council Energy Engineering Board is completing a study of the status and role of university reactors and is expected to make recommendations on DOE's future policies regarding nuclear university research reactors. The low enriched uranium (LEU) reactor fuel conversion program, as required by the Nuclear Regulatory Commission, will be approximately at its midpoint by FY 1989 with twelve university reactors having received support for their reactor safety studies and four having received Commission approval and order for conversion.

The fourth URS subprogram, Energy Manpower Development, includes efforts directed at increasing the number of young people pursuing energy-related scientific and technical careers. This subprogram also includes the Department's statutory responsibility for assessing the supply and demand of manpower for both current and future energy R&D programs. A significant expansion of support is proposed in the FY 1989 budget for precollege science student and teacher programs sponsored by the DOE laboratories. Seven high school science student honors programs will be supported in FY 1989 at the Lawrence Livermore, Brookhaven, Argonne, Lawrence Berkeley, Oak Ridge, and Fermi National Laboratories, and the Pacific Northwest Laboratory. Students are selected for participation in these programs by the Governors of the respective States. Similar DOE institutes sponsored since FY 1985 have received national visibility and acclaim as ways of exposing the very best high school science students to the world-class research facilities and programs at the DOE laboratories.

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

LEAD TABLE

University Research Support

Activity	FY 1987	FY 1988	FY 1989 Base	FY 1989 Request	Program Change Request vs Base	
					Dollar	Percent
Laboratory Cooperative Science Centers.....	\$9,859	\$13,800	\$13,800	\$9,500	\$- 4,300	- 31%
R&D Laboratory Technology Transfer.....	826	1,000	1,000	1,400	+ 400	+ 40%
University Reactor Fuel Assistance.....	3,845	1,900	1,900	2,100	+ 200	+ 11%
Energy Manpower Development.....	1,095	1,700	1,700	2,770	+1,070	+ 63%
Total Program (OE).....	\$15,625	\$18,400	\$18,400	\$15,770	\$-2,630	- 14%

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

a/ Total reduced by \$150,000 which has been transferred to SBIR.

Department of Energy
FY 1988 CONGRESSIONAL Budget Request
Office of Energy Research
Energy Supply Research and Development

SUMMARY OF CHANGES

University Research Support

FY 1988 Appropriation.....	\$18,400
- Increase support for semester length research appointments for undergraduate science and engineering students and faculty teams at five DOE multiprogram laboratory sciences centers.....	+ 700
- Discontinue FY 1988 nuclear engineering research and education program.....	-5,000
- Increase support for laboratory technology transfer activities, including visiting industrial scientists appointments.....	+ 400
- Increase support for reactor sharing grants.....	+ 200
- Increase support for lab pre-college science student programs and initiate support for national high school science teacher research program at five DOE laboratories.....	<u>+1,070</u>
FY 1989 Congressional Request.....	\$15,770

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

KEY ACTIVITY SUMMARY

UNIVERSITY RESEARCH SUPPORT

I. Preface: Laboratory Cooperative Science Centers

Support is provided of faculty, graduate, and undergraduate students to participate in several for summer and semester-length research and education activities at DOE laboratories. One of the principal goals of this program is to take full advantage of the unique resources and facilities at the DOE laboratories for faculty and student research and related education. Support is also provided for year-round science activities, including faculty/student team research and special precollege science programs, at five multiprogram DOE laboratories.

II. A. Summary Table

Program Activity -----	FY 1987 -----	FY 1988 -----	FY 1989 -----	% Change -----
Laboratory Cooperative Science Education Centers.....	\$ 9,859	\$ 13,800	\$ 9,500	- 31%
Total Laboratory Cooperative Science Education Centers....	\$ 9,859	\$ 13,800	\$ 9,500	- 31%

II. B. Major Laboratory and Facility Funding

Ames Laboratory.....	\$ 120	\$ 120	\$ 120	--
Argonne National Laboratory....	1,650	2,540	2,800	+ 10%
Brookhaven National Laboratory.	515	575	1,000	+ 74%
DuPont E.I. Denemours.....	80	100	75	- 25%
Idaho National Engineering Lab.	0	0	15	--
Lawrence Berkeley Laboratory...	325	400	600	+ 50%
Oak Ridge National Laboratory..	200	900	1,200	+ 33%
Pacific Northwest Laboratories.	0	500	500	--
Fermi National Laboratory.....	83	50	50	--
Total.....	\$ 2,973	\$ 5,185	\$ 6,360	+ 23%

III. Activity Descriptions

Program Activity	FY 1987	FY 1988	FY 1989
Laboratory Cooperative Science Centers	Supported 2,300 faculty/student research and instructional appointments at DOE laboratories and research facilities, conducted a program evaluation of undergraduate student research and initiated planning for expansion of undergraduate research appointments at 5 DOE multiprogram labs (\$6,059).	Supports 2,300 faculty/student summer research and instructional appointments and initiates semester-length research and instructional programs for 300 nationally selected undergraduate science and engineering students at 5 DOE multiprogram lab science centers (\$8,800).	Supports semester-length research appointments for 450 science/engineering undergraduate students at six laboratory Science Centers and 36 faculty/student research teams. Provides support for 2,100 summer faculty/student research appointments. (\$9,500)
	No Activity.	Provide Support for university - based nuclear engineering research and education programs including 20 competitive awards, 10 graduate research fellowships and and 8 joint laboratory/university research projects, as mandated by Congress in FY 1988. (\$5,000)	No Activity.
	Provided support for Center for Excellence in Education at Indiana University as mandated by Congress in FY 1987. (\$3,800).	No Activity.	No Activity.
	\$9,859	\$13,800	\$9,500

I. Preface: R&D LABORATORY TECHNOLOGY TRANSFER

 This Department-wide program establishes the framework to facilitate the effective transfer of technology making the results of research and development available widely and promptly in the marketplace. Improved state-of-the-art opportunities for utilization of Government-sponsored R&D and assignment of industry scientists at multiprogram and major single program laboratories are integral components of this program. In the spirit of the President's Executive Order on Facilitating Access to Science and Technology, the U.S. and private and public sectors can broaden their technology base with new knowledge and opportunities from Federal laboratories.

II. A. Summary Table

Program Activity -----	FY 1987 -----	FY 1988 -----	FY 1989 -----	% Change -----
R&D Laboratory Technology Transfer.....	\$ 826	\$ 1,000	\$ 1,400	+ 40%
Total R&D Laboratory Technology Transfer.....	\$ 826	\$ 1,000	\$ 1,400	+ 40%

II. B. Major Laboratory and Facility Funding

Argonne National Laboratory....	\$ 185	\$ 75	\$ 100	+ 33%
Brookhaven National Laboratory.	50	50	100	+ 100%
Fermi National Laboratory.....	0	90	30	- 67%
Idaho National Engineering Lab.	70	45	100	+ 122%
Lawrence Berkeley Laboratory...	92	43	100	+ 133%
Lawrence Livermore Nat. Lab. ..	0	0	100	--
Los Alamos National Laboratory.	15	38	100	+ 163%
Oak Ridge National Laboratory..	80	30	100	+ 233%
Pacific Northwest Laboratories.	224	8	100	+1150%
Sandia National Laboratory.....	50	115	100	- 13%
Total.....	\$ 766	\$ 494	\$ 930	+ 88%

III. Activity Descriptions

Program Activity	FY 1987	FY 1988	FY 1989
R&D Laboratory Technology Transfer	Funded 20 laboratory-industry technology exchange assignments involving 8 laboratories and 20 companies. Published Technology '86 to showcase Department's accomplishments in technology transfer. Funded 2 laboratory initiatives in technology transfer as model activities. Initiated data base for technology application assessments. Laboratory implementation of program is growing rapidly across the Department (\$826).	Increase number of industry-laboratory technology exchange assignments to 25 and include major single program laboratories in the program. Publish Technology '87 to report the Department's technology transfer opportunities and accomplishments. Undertake additional laboratory technology initiatives with the prospect of broad application (\$1,000).	Increase number of industry-laboratory technology exchange assignments to 30. Pursue highly leveraged laboratory technology transfer initiatives with strong cost-sharing component. Develop further DOE resources data base (\$1,400).

I. Preface: University Reactor Fuel Assistance

Provides support associated with the fabrication and shipping of nuclear fuel for university-based nuclear research/training reactors. The university-based nuclear research and manpower development effort is highly dependent on these specialized facilities, not only for nuclear related training, but also for research in the basic sciences. Support is provided through this program for the NRC-mandated conversion of university reactors to low enriched uranium fuel. This subprogram also includes support on a competitive basis for university reactor sharing grants which provide research and training opportunities for faculty/students from nearby universities and colleges.

II. A. Summary Table

Program Activity	FY 1987	FY 1988	FY 1989	% Change
University Reactor Fuel Assistance.....	\$ 3,845	\$ 1,900	\$ 2,100	+ 11%
Total University Reactor Fuel Assistance.....	\$ 3,845	\$ 1,900	\$ 2,100	+ 11%

II. B. Major Laboratory and Facility Funding

Argonne National Laboratory....	\$ 313	\$ 200	\$ 0	-100%
Brookhaven National Laboratory.	15	0	15	--
DuPont E.I. Denemours.....	25	35	25	- 29%
Idaho National Engineering Lab.	2,303	1,000	1,400	+ 40%
	-----	-----	-----	-----
Total.....	\$ 2,656	\$ 1,235	\$ 1,440	+ 17%

III. Activity Descriptions

Program Activity	FY 1987	FY 1988	FY 1989
-----	-----	-----	-----
University Reactor Fuel Assistance	Supported refueling of 7 university reactors (5 with LEU fuel) and supported 23 reactor sharing awards. Continued support for NRC mandated conversion to Low Enriched Uranium (LEU) fuel. Supported seven conversion safety analysis studies, spent fuel shipping guidelines preparation and shipping cask licensing. (\$3,845)	Support for refueling for 3 reactors (2 with LEU fuel) and support 23 reactor sharing awards. Continue support of LEU conversion. Replace HEU fuel from 5 reactors (\$1,900).	Provide refueling for four reactors (2 with LEU fuel) and fund 23 reactor sharing awards involving scientists from more than 50 colleges and universities. Continues support for LEU conversion (\$2,100).
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I. Preface: Energy Manpower Development

This program supports the continued collection and analysis of base line data on the employment, utilization, and supply of engineers and scientists relative to energy-related manpower supply/demand. This activity also supports the Department's longer term R&D mission by encouraging students to pursue energy-related scientific and technical careers through activities such as the Pre-Freshman Engineering Program (PREP), laboratory-based high school science teacher research programs, and the DOE national high school science student honors program.

II. A. Summary Table

Program Activity	FY 1987	FY 1988	FY 1989	% Change
Energy Manpower Development.....	\$ 1,095	\$ 1,700	\$ 2,770	+ 63%
Total Energy Manpower Development.....	\$ 1,095	\$ 1,700	\$ 2,770	+ 63%

II. B. Major Laboratory and Facility Funding

Brookhaven National Laboratory.	\$ 112	\$ 0	\$ 100	--
Fermi National Laboratory.....	100	160	100	- 38%
Lawrence Berkeley Laboratory...	0	0	150	--
Lawrence Livermore Nat. Lab....	100	0	135	--
Oak Ridge National Laboratory..	0	0	125	--
Total.....	\$ 312	\$ 160	\$ 610	+281%

III. Activity Descriptions

Program Activity	FY 1987	FY 1988	FY 1989
Energy Manpower Development	Continued analyses of energy-related manpower supply/demand data including in-depth assessment of manpower needs of nuclear research and nuclear energy sectors (\$400). Support 20 Prefreshman Engineering (PREP) projects reaching 2,100 minority and women precollege students (\$300).	Support energy-related manpower supply/demand studies including analysis of census data on scientists/engineers involved in all phases of energy R&D (\$500). Support 20 PREP projects reaching 2,100 students (\$300).	Continues analyses of manpower in energy-related fields including assessment of needs for advanced degree professionals (\$550). Support 20 PREP projects reaching 2,100 students (\$300).

III. ENERGY MANPOWER DEVELOPMENT (Cont'd)

Program Activity	FY 1987	FY 1988	FY 1989
Energy Manpower Development (Cont'd)	Supported laboratory-based precollege science teacher/student programs including DOE high school science student honors research programs at four DOE laboratories (LLNL, BNL, Fermi & LBL). Students are selected for participation in these Honors Programs by the State Governors (\$395).	Continue support for laboratory-based precollege science programs including six high school student honors programs (LLNL, BNL, Fermi, LBL, ANL, & ORNL) (\$900).	Continues support for laboratory-based precollege science education programs including support for a seventh high school science student honors program at PNL. Initiates support for national high school science teacher research program at five DOE labs. 200 teachers would be supported in summer hands-on research/instructional programs. Teachers would be selected both on a national basis through professional scientific societies (\$1,920).