DEPARTMENT OF ENERGY
FY 1990 CONGRESSIONAL BUDGET REQUEST
ENERGY SUPPLY RESEARCH AND DEVELOPMENT

OVERVIEW

ADVISORY AND OVERSIGHT PROGRAM DIRECTION

This program provides the 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. It supports the staff in the Office of Field Operations Management, Office of Program Analysis, Science and Technology Affairs Staff, and related program and management support staff.

The staff budgeted in this program supports the Director of Energy Research by providing technical assessments, independent peer reviews and program evaluations, and interagency coordination of research assessments. It oversees DOE's multiprogram nonweapons laboratories and develops and implements university research and manpower development programs in support of DOE goals and missions. This staff also provides ongoing support to the Energy Research Advisory Board and supports the Lawrence and Fermi Awards process.

DEPARTMENT OF ENERGY
FY 1990 CONGRESSIONAL BUDGET REQUEST
ENERGY SUPPLY RESEARCH AND DEVELOPMENT
(dollars in thousands)

LEAD TABLE

Advisory and Oversight Program Direction

Activity	FY 1988 Actual	FY 1989 Estimate	FY 1990 Base	FY 1990 Request	Program Change Request vs Base	
					Dollar	Percent
Energy Oversight, Research Analysis and University Support						
Advisory and Oversight Program Direction						
Operating Expenses.....	$3,200	$3,339	$3,373	$3,373	---	---
Staffing Total FTE's.....	45	44	44	44		

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

DEPARTMENT OF ENERGY
FY 1990 CONGRESSIONAL BUDGET REQUEST
ENERGY SUPPLY RESEARCH AND DEVELOPMENT
(dollars in thousands)

SUMMARY OF CHANGES

Advisory and Oversight Program Direction

FY 1989 Appropriation	$ 3,339
Adjustments - Increased personnel costs	+ 34
FY 1990 Base and Congressional Budget Request	$ 3,373

DEPARTMENT OF ENERGY
FY 1990 CONGRESSIONAL BUDGET REQUEST
ENERGY SUPPLY RESEARCH AND DEVELOPMENT
(dollars in thousands)

KEY ACTIVITY SUMMARY

ADVISORY AND OVERSIGHT PROGRAM DIRECTION

I. Preface: Advisory and Oversight Program Direction

This program provides the Federal staffing and associated funding resources 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.

II. A. Summary Table

Program Activity	FY 1988	FY 1989	FY 1990	% Change
Advisory and Oversight Program Direction.....	$ 3,200	$ 3,339	$ 3,373	+ 1
Total, Advisory and Oversight Program Direction.....	$ 3,200	$ 3,339	$ 3,373	+ 1

III. Activity Descriptions

Program Activity	FY 1988	FY 1989	FY 1990
Advisory and Oversight Program Direction	Provided funds for salaries, benefits and travel for 45 full-time equivalents (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. ($2,687)	Provide funds for salaries, benefits, and travel related to 44 FTE's. Provide for normal increased salary and benefits costs, such as within grade and merit increases. ($3,239)	Provide funds for salaries, benefits, and travel to continue 44 FTE's, including normal increased personnel and benefits costs. ($3,273)

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

Program Activity	FY 1988	FY 1989	FY 1990
Advisory and Oversight Program Direction (Cont'd)	The Office of Program Analysis (OPA) provides technical assessments, independent peer reviews and program evaluations, and interagency coordination of research assessments. Represents DOE on the National Acid Precipitation Assessment Program (NAPAP). Provides support for the second interim assessment required by NAPAP.	Continue to provide technical assessments, independent peer reviews and program evaluations. Prepare portions of the final NAPAP assessment and review the entire assessment for accuracy, completeness, and objectivity.	Provide technical assessments, independent peer reviews and program evaluations at the FY 1989 level of effort.
	The Office of Field Operations Management develops and implements laboratory management and university research and manpower development programs in support of DOE goals and missions. Manages the University Reactor Fuel Assistance program including conversion of nuclear reactors to LEU fuel, the Laboratory Cooperative summer program, the Science Centers Research Semester Program, the University Research Instrumentation program and the Used Equipment program. Supports the Manpower Assessment program including support to the Task Force on Women, Minorities, and Handicapped. Supports the Director in oversight of DOE's multiprogram nonweapons laboratories, including management of the General Purpose Facilities construction program and the ORNL environmental compliance and cleanup program. Manages the R&D laboratory	Continue to provide ongoing program management. Student/faculty and high school teacher support will continue to be enhanced. Implement as appropriate recommendations of ERAB Education Panel on science education and ERAB Research and Technology Utilization Panel. MEL-FS program activities will continue to address escalating environment, safety and health issues related to facility rehabilitation projects and to ensure compliance with the numerous ES&H directives and regulations which result in complex environmental compliance activities at ORNL. The role and activities of the R&D Council will continue to increase. Technology transfer responsibilities will increase.	Provide continued program management at the FY 1989 level. Continue support for Laboratory Cooperative Science Centers Program and student/faculty appointments, conversion of university research reactors to LEU fuel, and support for precollege teacher/student research programs. Continue to oversee multiprogram nonweapons laboratories, manage institutional planning process, and manage the MEL-FS program including oversight of ES&H and environmental compliance activities as required by current regulations and directives. Provide continued support to the R&D Council. Technology transfer activities will continue to increase.

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

Program Activity	FY 1988	FY 1989	FY 1990
Advisory and Oversight Program Direction (Cont'd)	technology transfer program and provides ER support to the DOE-wide Task Force on High Temperature Superconductivity Pilot Centers and the Standing Working Group on Technology Transfer. Manages the institutional planning process, and extended coverage of the program to the 5 major ER single program laboratories. Oversees the laboratory appraisal process and the strengthened work for others policy. Supports the new R&D Council established by the Under Secretary.		
	The Science and Technology Affairs Staff provides ongoing support to the Energy Research Advisory Board (ERAB), supports the Lawrence and Fermi Awards process, and supports the Director of ER in his role as science advisor to the Secretary of Energy.	Continue to support the ERAB and the Director of ER at the authorized level of effort.	Support the ERAB and the Director of ER at the FY 1989 level of effort.
	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.	Continue staff activities as in FY 1988.	Provide staff support as in FY 1989.

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

Program Activity	FY 1988	FY 1989	FY 1990
Advisory and Oversight Program Direction (Cont'd)	Provided program support such as printing, small purchases of supplies and materials, timesharing on various information systems and communications networks and contractual support. Also provided reimbursement of the Office of Scientific and Technical Information for services provided. ($513)	Continue the variety of program support required in FY 1988. ($100)	Continue the variety and level of program support required in FY 1989. ($100)
Total Advisory and Oversight Program Direction	$ 3,200	$ 3,339	$ 3,373

DEPARTMENT OF ENERGY
FY 1990 CONGRESSIONAL BUDGET REQUEST
GENERAL SCIENCE AND RESEARCH

OVERVIEW

GENERAL SCIENCE PROGRAM DIRECTION

This program provides the Federal staffing resources and associated funding to plan, direct, and manage a viable, high quality national program of basic research in the fields of high energy physics and nuclear physics. It supports the staff in the Office of the Associate Director for High Energy and Nuclear Physics, the High Energy Physics Division, the Nuclear Physics Division, the Superconducting Super Collider (SSC) Division, and associated program and management support staff required to administer these programs.

The Department of Energy provides over 90 percent of the Federal support, and serves as the Executive Agent, for the nation's High Energy Physics programs. Approximately 80 percent of the total Federal support of basic nuclear research is provided through the Nuclear Physics programs. The staff develops program plans and provides for budget justification and execution. It supports, plans, and provides for construction, maintenance, and operation of the large facilities on which research in high energy physics and nuclear physics depends. It oversees the operation of large and complex accelerator facilities which are used by qualified physicists throughout the Nation, provides technical oversight of the high energy physics and nuclear physics research programs at 15 major laboratories and well over one hundred universities throughout the nation, and interacts with other Federal agencies. In carrying out these responsibilities, the staff funded by General Science Program Direction assesses the basic research needs of these programs with the advice and assistance of the High Energy Physics Advisory Panel (HEPAP) and the DOE/NSF Nuclear Science Advisory Committee (NSAC), participates actively in their meetings and subpanel studies, and provides administrative support for their operation. The initial stages of the creation of the SSC have required substantial and extraordinary staff effort in areas such as technical and management direction of the R&D program, establishing research policies and formulating long-range plans and budgets, together with site selection, environmental impact statements, public and Congressional inquiries, and planning for creation of a new laboratory. This staff also participates extensively in international collaboration and cooperative programs with Japan, China, the Soviet Union, and Spain and possibly in the future, Italy and Canada.

DEPARTMENT OF ENERGY
FY 1990 CONGRESSIONAL BUDGET REQUEST
GENERAL SCIENCE AND RESEARCH
(dollars in thousands)

LEAD TABLE

General Science Program Direction

Activity	FY 1988 Actual	FY 1989 Estimate	FY 1990 Base	FY 1990 Request	Program Change Request vs Base	
					Dollar	Percent
General Science Program Direction						
Operating Expenses.....	$2,800	$3,157 a/	$3,300	$3,901	+601	+18
Staffing Total FTE's.....	45	44	44	49		

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

a/ Excludes $53,000 which represents applicable portion of $12,000,000 General Reduction contained in FY 1989 Appropriation.

DEPARTMENT OF ENERGY
FY 1990 CONGRESSIONAL BUDGET REQUEST
GENERAL SCIENCE AND RESEARCH
(dollars in thousands)

SUMMARY OF CHANGES

General Science Program Direction

FY 1989 Appropriation	$ 3,157
Adjustments - Increased personnel costs	+ 143
FY 1990 Base	$ 3,300
Increased costs for five additional FTE's and staff support	+ 601
FY 1990 Congressional Budget Request	$ 3,901

DEPARTMENT OF ENERGY
FY 1990 CONGRESSIONAL BUDGET REQUEST
GENERAL SCIENCE AND RESEARCH
(dollars in thousands)

KEY ACTIVITY SUMMARY

GENERAL SCIENCE PROGRAM DIRECTION

I. Preface: General Science Program Direction

This program provides the Federal staffing resources and associated funding to plan, direct, and manage a viable high quality national program of basic research in the fields of high energy physics and nuclear physics. It supports the staff in the Office of the Associate Director for High Energy and Nuclear Physics, the High Energy Physics Division, the Nuclear Physics Division, the Superconducting Super Collider (SSC) Division, and associated program and management support staff required to administer these programs.

II. A. Summary Table

Program Activity	FY 1988	FY 1989	FY 1990	% Change
General Science Program Direction.....	$ 2,800	$ 3,157	$ 3,901	+ 24
Total, General Science Program Direction.....	$ 2,800	$ 3,157	$ 3,901	+ 24

III. Activity Descriptions

Program Activity	FY 1988	FY 1989	FY 1990
General Science Program Direction	Provided funds for salaries, benefits, and travel for 45 full-time equivalents (FTE's) in the Office of High Energy and Nuclear Physics and for related program and management support staff totaling $2,872, (using $123 of prior year unobligated balances). ($2,749)	Provide funds for salaries, benefits, and travel for 44 FTE's, which is a reduction of two FTE's from the original FY 1989 allowance. ($3,107)	Provide funds for salaries, benefits, and travel for 49 FTE's. Increased funding will provide for five additional FTE's and for normal increased personnel costs such as within-grade and merit increases and greater employee participation in the Federal Employees Retirement System (FERS). ($3,625)

III. General Science Program Direction (Cont'd)

Program Activity	FY 1988	FY 1989	FY 1990
General Science Program Direction (Cont'd)	The High Energy Physics staff provides continued oversight of high energy accelerator centers at Brookhaven National Laboratory, Fermilab, and Stanford Linear Accelerator Center. Provides technical oversight for high energy physics research programs at 9 major laboratories, manages more than 100 university research tasks, and provides technical and project management oversight for 2 major construction projects and 3 major detectors. Provides effective DOE oversight for the facilities having more extensive programs of experiments as a result of their achieving their first full year of operations; i.e., Tevatron at Fermilab and the Stanford Linear Collider at SLAC. This requires increasing coordination of experimental collaborations among many different institutions, both domestic and foreign.	Provide management oversight of a $559 million (excluding SSC) budget for the High Energy Physics program. Operating time and experiments at new facilities at the laboratories will increase. Staff will continue to oversee fabrication of further new detectors for effective utilization of new facilities, as well as construction of AGS Accumulator/Booster, Fermilab computing upgrade and two major detectors, the SLD at SLAC and the DO at Fermilab. The staff also oversees a shared effort on the L3 detector at CERN.	Provide oversight of a $616 million (excluding SSC) budget for the High Energy Physics program. Utilization of existing facilities, particularly the Tevatron and SLC, will increase. Advanced accelerator R&D will increase to support test-bed exploration of very promising new concepts and to increase productivity of new facilities. Efforts on the two major detectors at SLAC and Fermilab will move into the debug and initial operation phase, and the staff will continue to participate with foreign countries in oversight of the L3 detector.
	The SSC Division manages the many technical, project management, and administrative tasks and deals with extensive Congressional, state and local, and public interface	Provide five FTE's, a reduction of two from the FY 1989 budget, for management of the $99 million SSC program. R&D on the SSC will be enhanced and an extensive	Provide five additional FTE's for oversight of the DOE $250 million SSC program, as well as the non-Federal funding contributions. R&D will focus on magnet industrialization,

III. General Science Program Direction (Cont'd)

Program Activity	FY 1988	FY 1989	FY 1990
General Science Program Direction (Cont'd)	activities associated with the SSC. Analyzes technical designs and cost estimates resulting from the advanced technology R&D effort and assists in seeking to increase international collaboration in this new accelerator facility. Oversees initiation of a program of industrial involvement in magnet R&D and technology transfer. Provides technical support to the SSC Site Task Force (STF) as required.	industrialization program for magnet production will be underway. Technical experts in accelerator design, magnet design and fabrication, and experimental physics are required. In addition to managing an increasing project budget, staff is required to prepare extensive program documentation, prepare briefings and budget justifications, conduct reviews, and participate in efforts to secure non-Federal cost sharing, particularly through international collaboration.	detectors, engineering and fabrication of injectors, and accelerator R&D, physics, and theoretical analyses. External relations will increase, particularly with the local governments regarding land acquisition following final site selection in FY 1989. State and international agreements for cost-sharing arrangements will be negotiated. Site specific activities will increase, and construction activities will begin. Workload related to project management plans, briefings, reviews, and documentation will continue to be heavy.
	The Nuclear Physics staff provides continued oversight of seven large and complex national accelerator facilities. Provides technical oversight for nuclear physics research programs at 13 major laboratories, manages more than 100 university research tasks, and provides technical and project management oversight for 5 construction and major equipment projects. Manages R&D associated with and monitors conventional	Provide effective oversight of a $261 million budget for the Nuclear Physics program. Provide program management and oversight for increasing research and facilities activity in the heavy ion physics program. Increased activities in high spin physics, recoil mass spectrometry, and continued growth in the AGS program and relativistic heavy ion physics will lead to increased workload on the staff. Staff will continue to be heavily	Provide oversight of a $299 million Nuclear Physics program which includes increased user facility utilization. CEBAF construction is increased and is at the point of critical decisions in the area of procurement of high technology and experimental equipment. Substantially increased effort will be needed to monitor new detector fabrication activities. There will be increased theory research activity toward establishment of a theory

III. General Science Program Direction (Cont'd)

Program Activity	FY 1988	FY 1989	FY 1990
General Science Program Direction (Cont'd)	construction activities of the Continuous Electron Beam Accelerator Facility (CEBAF). Interacts with DOE, contractor, and other officials on the complex arrangements involved in establishing a new laboratory/accelerator facility. Manages Nuclear Data program. Continues planning and R&D for a relativistic heavy ion collider (RHIC).	involved in CEBAF construction activity and planning and R&D for a new nuclear physics facility (RHIC).	institute with startup of the program focused on new scientific directions.
	Provided program and management support in the areas of budget and finance, personnel administration, acquisition and assistance, construction, environment and safety. Provided management and administrative support to the SSC Site Task Force (STF).	Continue program and management support as in FY 1988.	Continue program and management support at the FY 1989 level.
	Provided program support such as printing, supplies and materials, advertising and contractual support. ($51)	Continue the variety and level of program support required in FY 1988. ($50)	Continue the variety of program support required in FY 1989. Increased funding will provide contractual support for the increasing environment, safety and health workload and provide support for Automated Office Support Systems workstations. ($276)
Total General Science Program Direction	$2,800	$3,157	$3,901