

DEPARTMENT OF ENERGY
FY 1991 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 science education and manpower development and facilities management programs in support of DOE goals and missions to promote health and safety and a clean environment, to enhance scientific competitiveness, and to contribute to the Nation's energy security. This staff also supports the Director of Energy Research in his role as science advisor to the Secretary of Energy and supports the Lawrence and Fermi Awards process.

DEPARTMENT OF ENERGY
 FY 1991 CONGRESSIONAL BUDGET REQUEST
 ENERGY SUPPLY, RESEARCH AND DEVELOPMENT
 (dollars in thousands)

LEAD TABLE

Advisory and Oversight Program Direction

Activity -----	FY 1989 -----	FY 1990 -----	FY 1991 Base -----	FY 1991 Request -----	Program Change Request vs Base	
					Dollar -----	Percent -----
Energy Oversight, Research Analysis and University Support Advisory and Oversight Program Direction Operating Expenses.....	\$3,339	\$3,326 a/	\$4,250	\$4,250	--	--
Staffing (FTE's).....	45	50 b/	50	50		

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

a/ FY 1990 reflects final Gramm-Rudman-Hollings sequester adjustments.
 b/ Revised request.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ENERGY SUPPLY, RESEARCH AND DEVELOPMENT
(dollars in thousands)

SUMMARY OF CHANGES

Advisory and Oversight Program Direction

FY 1990 Appropriation.....	\$ 3,326
Adjustments - Increased personnel costs.....	<u>+ 924</u>
FY 1991 Base and Congressional Budget Request.....	4,250

DEPARTMENT OF ENERGY
 FY 1991 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: Advisory and Oversight Program Direction

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
----- Advisory and Oversight Program Direction..... -----	\$ 3,339	\$ 3,326	\$ 4,250	+ 28
Total, Advisory and Oversight Program Direction	\$ 3,339	\$ 3,326	\$ 4,250	+ 28

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Advisory and Oversight Program Direction			
Advisory and Oversight Program Direction	<p>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. (\$3,111)</p>	<p>Provide funds for salaries, benefits, and travel to support 44 FTE's included in the FY 1990 budget including normal increased personnel costs. A revised request for six additional FTE's is discussed below. (\$3,276)</p>	<p>Provide funds for salaries, benefits, and travel related to 50 FTE's. Provide for six additional FTE's over the FY 1990 budget as discussed in FY 1990. Also provide for normal increased personnel costs resulting, for example, from within-grade and merit increases and the impact of the FY 1990 general and executive pay raises. (\$4,070)</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 National Acid Precipitation Assessment Program (NAPAP). Prepared portions of the final NAPAP assessment and reviewed the entire assessment for accuracy, completeness, and objectivity.</p>	<p>Continue to perform technical assessments, independent peer reviews and program evaluations in support of DOE's basic research goals and support increased workload on environmental issues at the FY 1989 level of effort.</p>	<p>Provide technical assessments, independent peer reviews and program evaluations and support environmental issues at the level of effort included in the FY 1990 budget.</p>
	<p>The Office of Field Operations Management continued to develop and implement laboratory management and university research science education and manpower development programs in support of DOE goals and missions. Managed 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. Supported the Manpower Assessment program including</p>	<p>Provide three additional FTE's above the FY 1990 budget, related to improving facilities management Department-wide, including increasing ES&H-related workload and the Secretary's 10-point initiative to strengthen environmental protection activities; to support increased activities related to science education including increased interactions with DOE's adopted school, Woodrow Wilson High School, and increased effort to implement recommendations from the Secretary's Berkeley Math/Science Education Conference; and for increased</p>	<p>Provide three additional FTE's as discussed in FY 1990, to support increased workload related to improving facilities management Department-wide including ES&H-related activities; and to support new science education initiatives involving mathematics enrichment, museum-based science education, and graduate support in selected energy-related fields including nuclear engineering. Continue program management in support of the National goal to maintain U.S. competitiveness through education and development of human resources,</p>

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

Program Activity	FY 1989	FY 1990	FY 1991
Advisory and Oversight Program Direction (Cont'd)	<p>support to the Task Force on Women, Minorities, and Handicapped. Supported 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. Managed the R&D laboratory technology transfer program and provided ER support to the DOE-wide Task Force on High Temperature Superconductivity Pilot Centers and the Standing Working Group on Technology Transfer. Managed the institutional planning process which includes the five major ER single program laboratories. Continued to oversee the laboratory appraisal process and the strengthened work for others policy. Supported the R&D Council established by the Under Secretary.</p>	<p>laboratory oversight. Continue support for Laboratory Cooperative Science Centers Program and student/faculty appointments, and support for precollege teacher/student research programs. Provide increased support for solving science education problems. Continue to oversee multiprogram nonweapons laboratories, manage the institutional planning process, and manage the MEL-FS program including improved facilities management and expanded oversight of escalating ES&H issues related to facility rehabilitation projects and to ensure compliance with numerous ES&H directives and regulations. Support the expanded activities related to quarterly meetings with directors of major DOE laboratories, the National Research Council (NRC) committee assessment study of the status of U.S. nuclear energy education, including increased laboratory oversight responsibilities. Support increased technology transfer responsibilities, including development of a baseline review of Departmental activities and input for the National Energy Strategy.</p>	<p>continue to support Laboratory Cooperative Science Centers Program, and precollege teacher/student research appointments and new initiatives at DOE laboratories targeted at minorities and women. Overview programs to increase precollege and college educational opportunities, including women and minorities. Manage University Research Instrumentation. Continue to oversee multiprogram nonweapons laboratories in support of energy R&D goals, and manage the institutional planning process and the MEL-FS program. Continue to oversee multiprogram facilities support through major rehabilitation projects and ES&H-related activities. Continue to support technology transfer from DOE laboratories as part of the National economic competitiveness initiative. Continue support to the quarterly laboratory directors meetings, nuclear energy education efforts and interagency meetings involving NSF, Department of Education and all major mission agencies</p>
	<p>The Science and Technology Affairs Staff provided ongoing support to the Energy Research Advisory Board (ERAB), which advises on DOE's R&D goals and strategies. Supported the Lawrence and Fermi Awards process, and supported the Director of ER in his role as science advisor to the Secretary of Energy.</p>	<p>Continue to support the ERAB and the Director of ER at the FY 1989 level of effort.</p>	<p>Continue to support the Director of ER at the FY 1990 level of effort.</p>

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

Program Activity	FY 1989	FY 1990	FY 1991
Advisory and Oversight Program Direction (Cont'd)	<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>Provide three additional FTE's above the FY 1990 budget level for enhanced ES&H oversight capability and support to line management related to nuclear safety, health physics, occupational safety and industrial hygiene, environmental protection, hazardous waste management, safeguards and security, emergency preparedness, and quality assurance. Perform safety appraisals and environmental compliance audits.</p>	<p>Continue staff support activities at the revised FY 1990 level of effort with three additional FTE's for increased ES&H responsibilities.</p>
	<p>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. (\$228)</p>	<p>Continue the variety of program support required in FY 1989. (\$50)</p>	<p>Continue the variety of program support required in FY 1989 and FY 1990. Also provide for support costs of Automated Office Support Systems workstations including hotline support, hardware modifications, upgrades, moves, and telecommunications/network support. (\$180)</p>
	\$ 3,339	\$ 3,326	\$ 4,250
Advisory and Oversight Program Direction	\$ 3,339	\$ 3,326	\$ 4,250

DEPARTMENT OF ENERGY
FY 1991 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 in support of the Nation's goals to support basic research and development and to maintain U.S. competitiveness. 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, 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. Over 85 percent of the total Federal support of basic nuclear physics research is provided through the Nuclear Physics program. 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. This staff works in close cooperation with the Office of Superconducting Super Collider (OSSC), since the SSC is an integral part of the High Energy Physics program.

This staff also participates extensively in international collaboration and cooperative programs with Japan, W. Germany, CERN Laboratory (Geneva, Switzerland) member countries, China, the Soviet Union, Spain, Italy, and Canada.

DEPARTMENT OF ENERGY
 FY 1991 CONGRESSIONAL BUDGET REQUEST
 GENERAL SCIENCE AND RESEARCH
 (dollars in thousands)

LEAD TABLE

General Science Program Direction

Activity	FY 1989	FY 1990	FY 1991 Base	FY 1991 Request	Program Change Request vs Base	
					Dollar	Percent
General Science Program Direction						
Operating Expenses.....	\$2,635 a/	\$3,008 a/b/	\$3,950	\$3,950	--	--
Staffing (FTE's).....	39	46 c/	46	46		

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

- a/ Reflects comparability adjustments of \$522,000 in FY 1989 and \$838,000 in FY 1990 to Superconducting Super Collider Program Direction.
- b/ FY 1990 reflects final Gramm-Rudman-Hollings sequester adjustments.
- c/ Revised request.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
GENERAL SCIENCE AND RESEARCH
(dollars in thousands)

SUMMARY OF CHANGES

General Science Program Direction

FY 1990 Appropriation.....	\$ 3,008
Adjustments - Increased personnel costs.....	<u>+ 942</u>
FY 1991 Base and Congressional Budget Request.....	\$ 3,950

DEPARTMENT OF ENERGY
 FY 1991 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 to ensure U.S. competitiveness in basic research. 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, and associated program and management support staff required to administer these programs.

II. A. Summary Table: General Science Program Direction

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
General Science Program Direction.....	\$ 2,635	\$ 3,008	\$ 3,950	+ 31
Total, General Science Program Direction	\$ 2,635	\$ 3,008	\$ 3,950	+ 31

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
General Science Program Direction	<p>Provided funds for salaries, benefits, and travel for 39 full-time equivalents (FTE's) in the Office of High Energy and Nuclear Physics and for related program and management support staff. (\$2,610)</p> <p>The High Energy Physics staff provided continued oversight of a \$550 million budget and of high energy accelerator centers at Brookhaven National Laboratory, Fermilab, and the Stanford Linear Accelerator Center. Provided technical oversight for high energy physics research programs at nine major laboratories, managed more than 100 university research tasks, and provided technical and project management oversight for three major construction projects and three major detectors. Provided effective DOE oversight for new facilities at the laboratories whose operating time and experiments increased. Continued to oversee fabrication of further new detectors for effective utilization of new facilities, as well as construction of the AGS Accumulator/Booster, the Fermilab computing upgrade and two major detectors, the SLD at SLAC and the DO at Fermilab. The staff also participated with foreign countries in oversight of the L3 detector at CERN.</p>	<p>Provide funds for salaries, benefits, and travel for 39 FTE's included in the FY 1990 budget including normal increased personnel costs. A revised request for seven additional FTE's is discussed below. Six are associated with increased environment, safety and health (ES&H) responsibilities and one will provide increased support in the Office of High Energy and Nuclear Physics. (\$2,848)</p> <p>Provide continued oversight of the High Energy Physics program excluding primary responsibility for SSC. However, the staff will maintain close coordination with the SSC staff on all SSC program activities since SSC is being built to perform high energy physics research. Provide one additional FTE for increased line management responsibilities for compliance with ES&H regulations at large accelerator facilities. Includes appraisal of contractor ES&H performance and ensuring safe disposal of byproducts and wastes. 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 oversee a shared effort with foreign countries on the L3 detector.</p>	<p>Provide funds for salaries, benefits, and travel for 46 FTE's. Provide for seven additional FTE's over the FY 1990 budget level, as discussed in FY 1990. Also provide increased personnel costs resulting, for example, from within-grade and merit increases and the impact of the FY 1990 general and executive pay raises. (\$3,765)</p> <p>Provide continued oversight of the High Energy Physics Program at the FY 1990 revised request level of effort which includes one additional FTE. Continue close liaison on SSC program activities. Continue to oversee the safe and efficient operation and strong utilization of existing facilities, including the Tevatron and SLC, and research capabilities. Oversee experimental and theoretical research carried out by university based scientists. Continue oversight of test-bed exploration of very promising new advanced accelerator concepts. Maintain foreign liaison for conduct of experiments at foreign accelerators with unique capabilities not available in the U.S. and for oversight of the L3 detector. Oversee continuation of the Fermilab Linac Upgrade Project.</p>

III. General Science Program Direction (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
General Science Program Direction (Cont'd)	<p>The Nuclear Physics staff provided continued oversight of a \$258 million budget and seven large and complex national accelerator facilities. Provided technical oversight for nuclear physics research programs at 13 major laboratories, managed more than 100 university research tasks, and provided technical and project management oversight for five construction and major equipment projects. Managed R&D and monitored conventional construction activities related to the Continuous Electron Beam Accelerator Facility (CEBAF). Interacted with DOE, contractor, and other officials on the complex arrangements involved in establishing a new laboratory/accelerator facility. Managed Nuclear Data program. Continued planning and R&D for the Relativistic Heavy Ion Collider (RHIC).</p>	<p>Provide oversight of the Nuclear Physics program which includes increased user facility utilization. Provide one additional FTE for increased line management responsibilities for compliance with ES&H regulations and other increased workloads. Includes appraisal of contractor ES&H performance and ensuring safe disposal of byproducts and wastes. 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 leading to establishment of a theory institute; this enhanced program will focus on new scientific directions.</p>	<p>Provide oversight of the Nuclear Physics program at the FY 1990 revised request level of effort which includes one additional FTE. Provide continued management oversight of complex accelerator facilities. Support increased R&D, construction and pre-operation activities for CEBAF. Support RHIC R&D and construction. Substantially increased effort will be needed for the RHIC project at BNL to supervise managerial enhancements, maintenance of safety and environmental standards, industrialization of superconducting magnet components, development and fabrication of detectors, and general adherence to cost and schedule baselines. Support R&D at university facilities and optimize research programs at facilities which were recently upgraded. Oversee a significant university user experimental research program, and manage the Nuclear Data program in support of various DOE programs. Continue to support theoretical research which includes beginning a nuclear theory institute for advanced concepts.</p>
	<p>Provided program and management support in the areas of budget and finance, personnel administration, acquisition and assistance, construction, environment and safety. Supported the SSC Site Task Force (STF).</p>	<p>Provide four additional FTE's to provide program and management support at an acceptable level. Independent ES&H oversight capability will be enhanced to carry out increased responsibilities for nuclear safety, health physics, occupational safety and industrial hygiene, environmental protection, hazardous waste management, safeguards and security, emergency preparedness, and quality assurance. Perform safety appraisals and environmental compliance audits at large accelerator facilities.</p>	<p>Provide program and management support at the FY 1990 revised request level which includes four additional FTE's.</p>

III. General Science Program Direction (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
General Science Program Direction (Cont'd)	Provided program support such as printing, supplies and materials, advertising and contractual support. (\$25)	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. (\$160)	Continue at an increased level the variety of program support required in FY 1990. (\$185)
	\$ 2,635	\$ 3,008	\$ 3,950
General Science Program Direction	\$ 2,635	\$ 3,008	\$ 3,950