

DEPARTMENT OF ENERGY  
FY 1995 CONGRESSIONAL BUDGET REQUEST  
GENERAL SCIENCE AND RESEARCH

OVERVIEW

SUPERCONDUCTING SUPER COLLIDER (SSC)

The Superconducting Super Collider (SSC), a large proton-proton collider for basic scientific research was under construction near Waxahachie, Texas. The SSC was designed to become the world's preeminent particle accelerator facility for high energy physics research. Research at the SSC was expected to answer questions about the ultimate constituents of matter and energy.

The project was terminated by Congress in 1993 when it passed the FY 1994 Energy and Water Appropriations Bill (P.L. 103-126). Included in this bill was \$640 million for the orderly termination of the SSC.

A study done in 1993 confirmed that approximately 20 percent of the 1991 Total Project Cost of \$8.249 billion had been spent and about 20 percent of the project was complete by July 1993. This study and other estimates projected that the project completion would be extended to the end of FY 2002 at a revised estimated cost of \$10-11 billion due to reduced outlays specified by the President's FY 1994 - FY 1998 budget and other factors.

Following termination of the project, the SSC Project Office was assigned to the Oak Ridge Operations Office by the Secretary of Energy. Termination plans have now been developed under the direction of the SSC Project Director. The DOE termination plan is consistent with the FY 1994 appropriations legislation that terminated the SSC project. Consistent with the provisions of this legislation, DOE will now: 1) terminate the SSC project in an orderly, cost-effective, environmentally sound, and safe manner; 2) develop a plan to maximize the value of the investment made in the project, including recommendations as to the feasibility of other uses of project assets, and report the results by July 1, 1994; and 3) work closely with the employees and other interested parties to mitigate the impacts of the termination. Key issues being considered during the termination include: personnel impacts; environmental, safety, and health risks; total cost control; terms of contract termination settlement; documentation and records management; disposition of personal and real property; site assessment; permit management; and alternate uses of site and facilities.

The termination of the project impacts thousands of contractors, as well as numerous universities, foreign countries, and the State of Texas. On November 17, 1993, the Project Office initiated actions to terminate agreements and contracts by officially notifying Universities Research Association (URA), Inc., the Management and Operating Contractor, that this project had been terminated. The definition of the required tasks to complete termination activities, and their associated costs, is under active review. A new Work Breakdown Structure (WBS) has been established to assist in defining and tracking these activities and costs.

The FY 1995 request totals \$180 million. The funds requested are for continuation of termination activities as directed by Congress, and for future uses of the SSC assets.

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 OFFICE OF ENERGY RESEARCH  
 (Tabular dollars in thousands, narrative in whole dollars)

LEAD TABLE

Superconducting Super Collider (SSC)

<u>Activity</u>	<u>FY 1993 Adjusted</u>	<u>FY 1994 Approp.</u>	<u>FY 1994 Adjustment</u>	<u>FY 1995 Request</u>
<b>SSC Project</b>				
Operating Expenses.....	\$115,241	\$640,000	\$0	\$180,000
Capital Equipment.....	40,500	0	0	0
Construction.....	359,672	0	0	0
Subtotal SSC Project.....	515,413	640,000	0	180,000
Adjustment.....	-2,500 a/	0	0	0
<b>Total SSC.....</b>	<b>\$512,913</b>	<b>\$640,000</b>	<b>\$0</b>	<b>\$180,000</b>
<b>Summary</b>				
Operating Expenses.....	\$115,241 b/	\$640,000	\$0	\$180,000
Capital Equipment.....	38,000	0	0	0
Construction.....	359,672	0	0	0
<b>Total Program.....</b>	<b>\$512,913</b>	<b>\$640,000</b>	<b>\$0</b>	<b>\$180,000</b>
<b>Staffing (FTEs)</b>				
HQ.....	82	10	10	10
Field.....	0	60	60	60
<b>Total.....</b>	<b>82</b>	<b>70</b>	<b>70</b>	<b>70</b>

Authorization: P.L. 95-91, "Department of Energy Organization Act" (1977)

a/ Amount of general reduction for use of prior year balances assigned to this program. The total will be taken at the Appropriation level.

b/ Excludes \$1,587,000 which has been transferred to the SBIR program.

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SUMMARY OF CHANGES

Superconducting Super Collider (SSC)

FY 1994 Appropriation.....	\$ 640,000
Adjustment.....	<u>          0</u>
FY 1994 Adjusted.....	640,000
The decrease in funding is associated with a reduction in the level of effort required to proceed with the SSC project termination consistent with Congressional direction.....	<u>-460,000</u>
FY 1995 Congressional Budget Request.....	<u>\$ 180,000</u>

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KEY ACTIVITY SUMMARY

SUPERCONDUCTING SUPER COLLIDER (SSC)

I. Preface: SSC Research, Development, Operations and Termination

In FY 1993, the SSC R&D program provided support for studies to develop the conceptual design and technological foundation for the SSC and its technical systems. The program had a strong focus on Superconducting magnet development and included R&D on detectors and other accelerator systems.

For FY 1994, the SSC was terminated by Congress. All of FY 1994 and FY 1995 Budget Authority is earmarked for SSC termination activities.

This subprogram also provides the Federal staffing resources and associated funding required to oversee and administer the SSC. The DOE staff now supports SSC termination. Oversight responsibility has been assigned to the Oak Ridge Operations Office.

II. A. Summary Table: SSC Research, Development, Operations and Termination

Program Activity	FY 1993 Enacted	FY 1994 Enacted	FY 1995 Request	% Change
SSC R&D.....	\$ 104,241	\$ 0	\$ 0	0
SSC Termination.....	0	627,600	170,000	- 73
SSC Program Direction.....	11,000	12,400	10,000	- 19
<b>Total, SSC Research, Development, Operations and Termination</b>	<b>\$ 115,241</b>	<b>\$ 640,000</b>	<b>\$ 180,000</b>	<b>- 72</b>

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

Program Activity	FY 1993	FY 1994	FY 1995
SSC Research, Development, Operations and Termination			
SSC R&D	<p>The FY 1993 R&amp;D program included the continuation of superconducting magnet R&amp;D, accelerator R&amp;D and detector R&amp;D. The program included R&amp;D to further refine the design of the superconducting magnets for the collider and high energy booster; accelerator R&amp;D to complete design of various accelerator systems and components and to fabricate and test prototypes of components; detector and experimental systems R&amp;D and operation of computing capability; general laboratory operations such as laboratory management and administration and the laboratory's technical and experimental support groups.</p> <p>Funding in the amount of \$1,587,000 was transferred to Energy Supply for the SBIR program.</p>	All funds budgeted for SSC termination.	All funds budgeted for termination.
	\$ 104,241	\$ 0	\$ 0
SSC Termination	N/A	<p>Funds provide for: personnel demobilization, including outplacement activities and severance packages; studies and planning for possible alternative uses of assets and facilities to maximize the value of the investment made; technical documentation and close out; orderly termination of subcontracts, real estate leases, and agreements with other laboratories; development of inventory lists, followed by distribution and disposal of equipment and other property; environmental,</p>	<p>FY 1995 SSC funds will continue to provide for the wide variety of ongoing activities necessary to close out the SSC.</p>

III. SSC Research, Development, Operations and Termination (Cont'd):

Program Activity	FY 1993	FY 1994	FY 1995
SSC Termination (Cont'd)		safety and health activities; site restoration; site and facilities maintenance and security; administration and support of the above tasks.	
	\$ 0	\$ 627,600	\$ 170,000
SSC Program Direction	<p>Provided funds for salaries, benefits, and travel for 73 full-time equivalents (FTEs) for the Office of SSC and 9 FTEs for Energy Research support personnel. (\$6,311,000)</p> <p>Staffed the Texas offices to provide effective policy and program direction and day-to-day DOE oversight and management of this large, complex project. Provided project oversight and management of construction activities at the site, oversight of the many design and development efforts for technical systems, and oversight of the laboratory's procurement and business activities to ensure cost and schedule baselines are met. Administered the M&amp;O contract, ensured compliance with ES&amp;H regulations and directives, and provided administrative support at the site. Served as the focal point for daily interactions with M&amp;O contractor staff, State of Texas representatives, Washington Support Office, and others as required.</p>	<p>Provide funds for salaries, benefits, and travel for 70 FTEs. (\$6,811,000)</p> <p>Provide 60 FTEs for the Oak Ridge Operations Office and the SSC Texas offices to support project termination. Provide day-to-day DOE oversight of contractor activities, ensure compliance with ES&amp;H regulations and directives, and protect the Government investment in equipment and facilities. Provide for daily interactions with contractor staff, State of Texas representatives, Oak Ridge Operations Office, DOE Headquarters, and others as required.</p>	<p>Provide funds for salaries, benefits, and travel for 70 FTEs. (\$6,826,000)</p> <p>Provide 60 FTEs for the Oak Ridge Operations Office and the SSC Texas offices to continue to provide effective day-to-day oversight and management of SSC termination activities at the site as in FY 1994.</p>

III. SSC Research, Development, Operations and Termination (Cont'd):

Program Activity	FY 1993	FY 1994	FY 1995
SSC Program Direction (Cont'd)	Staffed the Washington Support Office to manage HQ activities related to the DOE SSC program and additional non-Federal contributions. Provided oversight for negotiation and implementation of detailed cost-sharing arrangements with foreign countries. Participated in oversight of accelerator and detector R&D programs. Coordinated SSC program activities with the high energy physics program and integrated SSC program planning with Departmental strategic planning activities. Provided support for project control, and civil construction at the HQ level. Met demands for project reviews, briefings, information requests, and other program support requirements of the SSC project.	Provide ten FTEs to support HQ activities related to termination of the DOE SSC program. Terminate negotiations for non-Federal contributions. Coordinate SSC termination activities with the high energy physics program, including development of plans for disposition of Government facilities and equipment at the site.	Provide ten FTEs to continue to support HQ activities related to termination of the DOE SSC program as in FY 1994.
	Provided ER HQ program and management support to the SSC in the areas of budget and finance, personnel administration, acquisition and assistance, policy review, information resources management, and construction management support.	No activity.	No activity.
	Provided a variety of program support at HQ and at the Project Office such as rents, printing and binding, and contractual support such as relocation services, environment, safety and health, and Automated Office Support Systems (AOSS) workstations. (\$4,689,000)	Provide a variety of program support required for termination. (\$5,589,000)	Continue to provide a variety of program support for termination. Reduce contractual support services. (\$3,174,000)
	\$ 11,000	\$ 12,400	\$ 10,000

III. SSC Research, Development, Operations and Termination (Cont'd):

Program Activity	FY 1993	FY 1994	FY 1995
SSC Research, Development, Operations and Termination	\$ 115,241	\$ 640,000	\$ 180,000



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KEY ACTIVITY SUMMARY

SUPERCONDUCTING SUPER COLLIDER (SSC)

I. Preface: Capital Equipment

The SSC had significant capital equipment requirements for procurements in support of R&D efforts on the many accelerator technical system and components, and for engineering design and procurement of detector components and systems. Also included were the equipment needs for establishing a major new research laboratory, including in-house computing capability, acquisition of general purpose scientific instrumentation and general laboratory support equipment. The SSC was terminated by Congress in FY 1994. No equipment funds are budgeted for FY 1994 or FY 1995.

II. A. Summary Table: Capital Equipment

Program Activity	FY 1993 Enacted	FY 1994 Enacted	FY 1995 Request	% Change
SSC Capital Equipment.....	\$ 40,500	\$ 0	\$ 0	0
Total, Capital Equipment	\$ 40,500	\$ 0	\$ 0	0

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

Program Activity	FY 1993	FY 1994	FY 1995
<b>Capital Equipment</b>			
SSC Capital Equipment	<p>Provided a major increase for the design and fabrication of SSC detector systems following selection of the two large general purpose detectors. Also provided continued support for fabrication of accelerator systems and components prototypes; general laboratory equipment; and computing equipment.</p>	<p>All funds are budgeted for SSC termination.</p>	<p>All funds are budgeted for SSC termination.</p>
	\$ 40,500	\$ 0	\$ 0
<b>Capital Equipment</b>	\$ 40,500	\$ 0	\$ 0

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KEY ACTIVITY SUMMARY

SUPERCONDUCTING SUPER COLLIDER (SSC)

I. Preface: Construction

II. A. Summary Table: Construction

Program Activity	FY 1993 Enacted	FY 1994 Enacted	FY 1995 Request	% Change
Construction.....	\$ 359,672	\$ 0	\$ 0	0
Total, Construction	\$ 359,672	\$ 0	\$ 0	0

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

Program Activity	FY 1993	FY 1994	FY 1995
Construction	<p>Provided for the superconducting magnet program, including the collider dipole and quadrupole contracts with industry and for the high energy booster magnet contracts. Also provided: for fabrication of elements of the linac, low energy booster, medium energy booster, and high energy booster; for fabrication of other collider technical systems; for design and construction of enclosures for the low energy booster, medium energy booster, and collider, including tunnels and surface structures; and for other conventional construction including initiation of one experimental halls, utilities and infrastructure; for project management and administration; and for contingency.</p>	<p>All funds are budgeted for SSC termination.</p>	<p>All funds are budgeted for SSC termination.</p>
	\$ 359,672	\$ 0	\$ 0
Construction	\$ 359,672	\$ 0	\$ 0