VICTIM OF HOUSE BUDGET BALANCING WAR, SSC NOW FACES UNCERTAIN FATE IN SENATE

Until the final vote on 17 June, the outlook in Congress for the gargantuan Superconducting Super Collider had appeared relatively favorable. The House Appropriations Committee had endorsed HR 5373, the Energy and Water Development Appropriations Act of 1993, which includes the Energy Department's research program, though it refused to accept the Bush Administration's figure of $650 million for the SSC. Still, the committee recommended funding the project at $483.7 million, the same as the SSC's current budget, and its 158-page report devoted six paragraphs of adoration to the super collider. The stand-pat funding, the report declared, was due entirely to severe budget restraints imposed on the committee. Then, almost apologetically, it stated: "The committee is mindful that cuts of the magnitude proposed will adversely impact both final cost and schedule and is hopeful that future fiscal circumstances will permit accelerated funding of this important national project to sustain the projected timetable and maintain current cost projections.... The SSC is the next logical, meaningful and significant step in the progress of high-energy physics.... The research and construction work surrounding the SSC is generating jobs and economic activity across a wide range of large industry, manufacturing and academic institutions around the country."

A week later, though, after an often rancorous three-hour debate on the House floor, the members voted 232 to 181 to support an amendment presented by Representative Dennis E. Eckart, an Ohio Democrat, to stop funding the SSC in fiscal 1993, which begins on 1 October. The decision was shocking. Only a few days earlier, a bipartisan group of SSC opponents in the House had counted fewer than 200 members ready to vote with them. But when the roll call on Eckart's amendment was over, 79 Republicans and 1 independent member had joined 152 Democrats in slaying the project. One Texas Congressman—Craig A. Washington, a Democrat who represents a predominantly black inner-city area of Houston—voted with the opponents, ignoring pleas from other Texans, including Joe Barton, Martin Frost, Jim Chapman and Jack Brooks, who led the battle for the project. The large margin of 51 votes against the SSC surprised both friends and foes. A year ago, deciding on a similar amendment to the energy appropriations bill, the House had supported the project by 87 votes.

Fireworks after the Fourth

The fate of the SSC now moves to the Senate, where 37 members voted to kill the project in last year's appropriations debate. The Senate Appropriations subcommittee on energy and water development, headed by J. Bennett Johnston, planned to delay considering the bill until after the Fourth of July recess, to allow a "cooling-off period" before any SSC fireworks. Johnston is a powerful supporter of the SSC. He represents Louisiana, where two contractors have plants ready to manufacture SSC magnets in bulk quantities.

To be built at an estimated cost of $8.24 billion, the SSC was the most conspicuous item in the first appropriations bill to come before the House after a constitutional amendment to require a balanced Federal budget fell just nine votes short of approval there. Ironically, the leaders in the unsuccessful battle for the amendment were Texans—principally Barton and Charles W. Stenholm. "What happened was a result of the current budget-cutting consciousness in Congress," said Barton, whose district includes the SSC site around Waxahachie. "They wanted a budget scalp they could take home and wave in front of voters."

Barton's metaphor had the anatomy wrong, according to Representative Leon Panetta, the California Democrat who is chairman of the House Budget Committee. Panetta, who voted against the SSC, argues that opposition to the project stiffened after the budget balancing amendment failed because members wanted to show they had strong enough backbones to deal with the deficit on their own.

In the Senate, Johnston, along with Lloyd Bentsen, one of the chamber's most influential Democrats, and Phil Gramm, a prominent Republican who is close to President Bush, admit that it will be an uphill fight for the SSC. Congress "needs to distinguish between high-priority programs, such as the SSC—which I and many in the scientific community believe to be the most important research effort in the world—and low-priority programs, which neither advance science nor promote a strong national purpose," Bentsen claimed in a statement for the news media.

But Senator Dale Bumpers, a Democrat of Arkansas, promised to repeat his combative attempt of last year to cancel the project. Speaking on the Senate floor the day the SSC was being debated in the House, Bumpers linked the decision on the super collider to Gramm's plan for the upper chamber to cast its vote on the budget balancing amendment to the Constitution: "I promise ... that [senators] are going to get a chance to do something about the deficit, not just to put a few words in the Constitution and say the deed is done.... You can put it in the Constitution, you can put it anywhere you want, but the spines of the members of Congress still have to be stiffened to make the tough choices."

The key to the Senate's decision on the SSC may be held by Appropriations Committee Chairman Robert C. Byrd, a formidable Democrat from West Virginia, who vowed to oppose Gramm's attempt to bring up the balanced-budget amendment. Byrd, who has previously supported the SSC, doesn't like to be in the same camp with some of the amendment's proponents and is likely to fight the super collider project on the grounds that it is the favorite of his enemies.

In an attempt to fend off any dire anti-SSC action in the House, Repre-

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sentatives George E. Brown Jr, a California Democrat, and Robert Walker, a Pennsylvania Republican—respectively chairman and senior minority member of the Committee on Science, Space and Technology—introduced an amendment that would require the President to certify by 1 June 1993 that at least $650 million in foreign contributions for the SSC were safely in the US Treasury. That sum equals about one-third of the $1.7 billion that Congress expects will go toward the super collider from foreign governments. Although the House approved the Brown–Walker amendment, it was made moot by the subsequent vote to jettison the SSC project.

The House decision is apt to bring on an unrealistic outcome: In terminating the SSC, DOE would receive a total of $34 million to close out the project and pay off some 19 000 contractors, or it may use the appropriation to supplement the budgets of other high-energy physics programs, such as Fermilab's main-injector upgrade or SLAC's proposed B factory.

—IRWIN GOODWIN

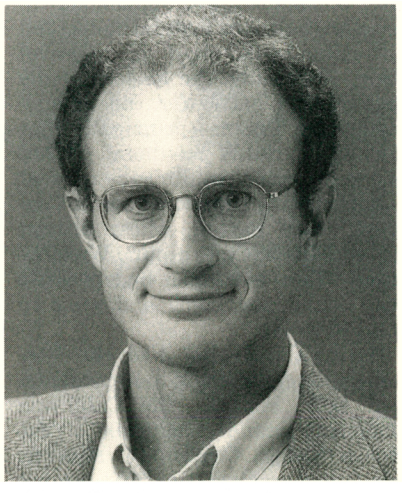
A DOE PANEL THINKS THE UNTHINKABLE: BUDGET SQUEEZE COULD ELIMINATE SLAC

The good times may have stopped rolling for high-energy physics. Not only is the Superconducting Super Collider in grave trouble politically and financially, but the US high-energy community itself is brandishing signs that there may be one or two labs too many for these hard times.

Since its first meeting in 1967, the High Energy Physics Advisory Panel has always recommended building larger new facilities for particle physics and has seldom proposed shutting any. But in an era when the Department of Energy's physics budgets are almost certain to be flat or worse for the next few years, the agency's leaders and some particle physicists have decided that they just cannot afford everything on HEPAP's wish list. This was exactly what Energy Secretary James D. Watkins said bluntly last fall to the HEPAP task force led by Charles H. Townes of the University of California at Berkeley. In the course of his statements to the Townes group, Watkins posed an unnerving question: If DOE funding for the high-energy physics program for fiscal 1993 had to be chopped savagely, by as much as 10% before inflation, what should happen? The answer from the task force was unexpectedly brutal: Should push come to shove, the SSC continues to be the highest priority and should be completed in 1999, no matter what the cost or pain to the rest of the community. Second to the SSC, the Townes group recommended upgrading Fermilab's Tevatron.

In 1990, a HEPAP subpanel headed by Frank Sciulli of Columbia University "strongly" endorsed building an electron-positron "B factory" with asymmetric rings, for which SLAC and Cornell have issued competing plans. The Sciulli subpanel ranked the project third on its priority list after the SSC and the Tevatron main-injector upgrade (PHYSICS TODAY, December 1990, page 20). One year later, confronted by DOE demands to fit the high-energy physics program to a sharply pared-down research budget, the Townes subpanel reluctantly concluded that neither the $204 million Tevatron upgrade nor the $184 million B factory at SLAC should proceed (PHYSICS TODAY, December 1991, page 53). In addition, the Townes subpanel found that the worst-case scenario would most likely reduce the 1993 operating budgets for Fermilab by 9%, Brookhaven by 13%, and SLAC, Argonne, Brookhaven and Lawrence Berkeley by some 12% if the SSC is to go forward with flat funding. Under this budget model, even university research would suffer reductions of about 6%.

Accompanying a copy of the Townes report to DOE officials last November was a letter from HEPAP Chairman Stanley Wojcicki, of Stanford University, addressed to William Happer, the department's director of energy research. Wojcicki's letter appeared uncommonly bitter: "It is no exaggeration to say that the recently concluded HEPAP meeting ... was by far the most depressing one in my memory. Being asked to respond to such drastic budgetary cuts gave us all a feeling that we were being asked to advise DOE on how to implement the demise of high-energy physics research in the US. The budget reduction will undoubtedly cause severe and long-lasting damage to the compelling and balanced program of research investigations in particle physics under way now. Moreover, this new apparent policy seems to us to be especially unwise because the nation is simultaneously investing heavily in ... the SSC. We are very concerned that reductions in the breadth and personnel of the high-energy physics base program at this time will inevitably undermine our ability to exploit [the SSC] when it turns on in eight years.... It makes very little scientific or economic sense to maim the existing high-energy physics program and even less sense to do so at a time when everything should be done to ensure the smooth transition of the present activities to the SSC era.... We are distressed because, if the contemplated scenario does indeed occur, then many exciting physics opportunities will have to be postponed, significantly reduced or, most often, simply thrown away."



Witherell: Advising in hard times.

Among the "grave consequences" likely to follow the proposed Draconian actions, Wojcicki foresaw "no way to 'balance the budget' without turning off, phasing out or seriously curtailing" high-energy physics conducted at US universities. "We are concerned that we may not be able to live up to the current expectations for our future participation in international collaborations," he asserted. Equally painful, Wojcicki lamented, would be the effect on "perhaps hundreds of people [who] will have to be laid off at the national labs [and on] graduate students, postdocs and assistant professors [who] will be forced out of the field. Senior faculty will have to decide whether they can responsibly encourage young people to join the field. Young people will find it hard to commit to a field which has difficulty