

# PHYSICS AND GOVERNMENT

## Cost-sharing emergency

New cost-sharing legislation, recently passed by Congress, is menacing the structure of graduate-research support. Department heads and government scientists indicate that the new laws are creating intramural discord, pitting university business officers against faculties and leaving officers of government-agency programs helpless.

**New rules benefit schools.** For several years Congress limited reimbursable overhead on research grants to a fixed percentage (about 20%) of direct costs. Thus besides sharing direct costs with universities, the agencies were assured of another type of institutional contribution to research projects receiving agency support. A significant portion of these indirect costs was absorbed by the schools from their general income.

The universities, however, had been agitating for many years to have the full costs of research borne by the federal government. A major part of their drive was to remove the overhead ceiling. Last year, with passage of the Independent Offices Appropriations Act for fiscal 1966, Congress eliminated the 20% limitation, and the universities are now allowed to seek full payment of indirect research costs. Congress, however, added the stipulation that "none of the funds provided . . . shall be used to pay . . . an amount equal to the entire cost." The new ruling has increased the cost per project by about 10% (in some cases 20% to 30%) but the funds available to the agencies have not increased that much.

The growth rate for university physics-research support by federal agencies for fiscal 1967 has been estimated at about 7.6% (PHYSICS TODAY, March, p. 55)—a figure less than half the growth rate that the Pake report indicated as necessary to support physics research in the colleges and universities. Thus, the new ruling exacerbates an already critical situation and leaves the agencies with less money than before to support research.

This ruling, coupled with pressures to spread the support, leaves federal program officers in a quandary. Should they drop some projects to provide the extra 10%? Must there be a moratorium on new projects? Can they provide support for young physicists, particularly those at mature campuses? Should the relative cost of projects be made important in the decision process? University scientists, more concerned with the growth of science than with the extra funds for their campuses, are deeply disturbed.

"The new ruling is a disaster," said one physics-department head. "They're taking the food out of the mouths of my graduate students." "A totally impossible situation," said another.

One option under these circumstances is for university fiscal agents and state research foundations to accept a new responsibility and not claim the full overhead costs. Some active department heads are imploring their fiscal counterparts to act with restraint and turn away from this insidious gift horse offering full-overhead reimbursement. But the state universities and their research foundations will in turn be under considerable pressure from their state legislatures and comptrollers to exact the maximal sum under the law.

**Situation thus far.** Since the new ruling went into effect on 1 March, some state research foundations and universities have suggested that they will consider sharing overhead costs if they observe that the new rules dis-

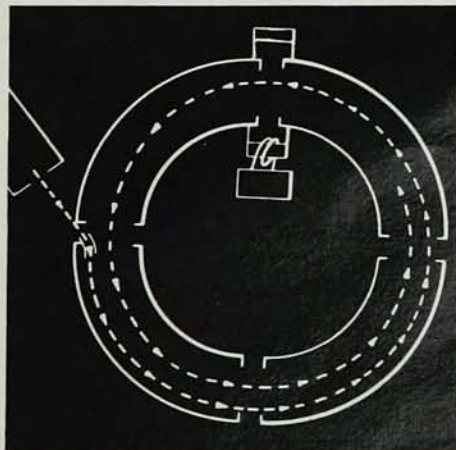
rupt university research. Others give no such guarantee. Federal program officers have reported that, in general, the more responsible institutions that were coöperative on the cost-sharing issue in the past have continued to be so; only a few have failed to recognize the crisis.

## Cosmotron SOS

As final plans are laid for scaling down the Brookhaven Cosmotron for its ultimate demise, a search is under way to locate those sustaining funds that the Atomic Energy Commission, in its budget, had denied the venerable but still vigorous machine. Meanwhile nuclear-structure physicists whose research directly depends on the 3-BeV, 0.1- $\mu$ A facility are shaking up a storm of complaint and criticism, not the least of which is directed toward themselves and their own neglected opportunities.

**Efficient termination.** When AEC directed Brookhaven National Laboratory to shut down the Cosmotron by July 1967, BNL sent out to all Cosmotron users a "Dear John" letter informing them of the fateful decision and asking how maximal use could be made of the machine in the time remaining. A detailed plan has now been devised, and beginning 27 June the facility will drop back to 15 shifts, 5 days a week (pending AEC approval) from its usual pace of 21 shifts, 7 days a week. Some of the personnel are now being transferred to other areas of the BNL accelerator department, and the remainder will be moved to other activities about the end of this year.

"It's like trying to sell a second-hand article," says T. Keith Glennan, head of Associated Universities, who is attempting to solicit other sources of Cosmotron support. "They ask me, 'Why should we pick up distressed merchandise?'" So far Glennan has made two or three passes both in government and on the outside, but he is not sanguine about the prospects. Another AUI scientist close to the situa-



tion says, "The die is cast, and whether we like it or not that machine is going to be closed down."

**A cautionary tale.** The tragic story that some nuclear-structure people tell is this: Some two and one half years ago there was a lull at the Cosmotron. The Brookhaven AGS had been started up, and many high-energy people working on the Cosmotron moved over to the 33-BeV machine to the delight of nuclear physicists and radio chemists, who previously had little chance of getting near the Cosmotron. At this time AUI itself decided that the Cosmotron should be turned off whenever such facilities as the Argonne ZGS and the Penn-Princeton machine were in a position to pick up the load. Their reasons were buttressed by a reported offer from AEC, which suggested that if BNL closed down the Cosmotron, Brookhaven might stand a better chance to get funds for the AGS conversion.

Since that time, however, the whole interest in nuclear physics has increased greatly because newly developed techniques have extended the possibilities of exploring nuclear structure with Cosmotron protons. Brookhaven, say the nuclear people, would never consider closing down the Cosmotron today. But once they made their decision, AEC made them adhere to it.

Meanwhile a Cosmotron review committee, headed by Richard Wilson of Harvard, had been established by BNL director Goldhaber (with AEC concurrence) to make recommendations to AUI regarding disposition of the machine. The Wilson committee unanimously concluded that the Cosmotron was indeed important to the national effort in elementary-particle and nuclear physics. "An inspection of the current work on the Cosmotron," wrote the committee, "shows that about half of the experiments could be done at other accelerators, but only at the expense of further crowding. . . . The other half . . . utilize features that are unique to the Cosmotron and would be abandoned or drastically altered if the Cosmotron were not available. . . . The Cosmotron, in view of its long duty cycle, precise energy control and narrow spread of energy in the

range of 1 BeV, allows a serious beginning to the nuclear structure experiments. It would appear unwise to deny this promising field the development it can achieve. . . ." On the basis of the Wilson committee report, AUI also reviewed the situation and subsequently made a strong plea to AEC for continued Cosmotron operation.

Despite all such assurances and testimonies of utility and uniqueness, AEC decided to shut down the Cosmotron. "Given the requirements for more extensive and costly high-energy facilities," said AEC, "the demands for support in other fields of science, the existence of other accelerators operating at equal or higher energies and intensities, and the distribution of these facilities across the country, the Commission, on balance, has concluded to halt operation of the Cosmotron."

**Criticisms and complaints.** "It doesn't make any sense," says one nuclear-structure physicist concerning the AEC decision. Says another, "There is a tendency for AEC programs to be too segmented. They have these various categories, and if you don't fall snugly into one of them, it's hard to get support. It is much easier to receive funds from AEC for something that is straightforward high-energy physics. But where you have a machine like the Cosmotron that does work in medicine, biology, chemistry, astrophysics, high-energy and nuclear physics, support is far harder to find." "The AEC budget," says another scientist "interacts strongly with high-energy physics at Brookhaven. Comparing the Cosmotron with the BNL high-energy facilities is putting the wrong two things in juxtaposition."

Other nuclear structure people had more pointed opinions. "It's the leadership of AEC that is at fault," says one. "I'm sure that decisions at AEC are not made by knowledgeable people. The Cosmotron is trivial to them with their concern for the high-energy facilities." And another: "Physics is not supported in a reasonable way."

**Wrong, says AEC.** AEC as well as the Office of Science and Technology categorically deny all such allegations. "Those who criticize our decisions," says an AEC spokesman, "are not really in a position to know how much sweat and effort we gave to studying

this problem. The OST, the Budget Bureau and the Joint Congressional Committee on Atomic Energy were all in on it." And AEC research division chief Paul W. McDaniel says, "If we are going to build the 200 BeV and the \$55 million LASL machine, we can't fund everything. All of us feel that shutting down the Cosmotron was a very unpleasant decision to make."

An OST spokesman concurred with the AEC viewpoint. "Many of the nuclear people take a simplistic view of the situation," he said. "Part of the problem has to do with the fear that the Penn-Princeton machine won't be available to them. But AEC insists that this is not the case. There is also a political question as to how big Brookhaven should grow. The AEC may want to keep BNL a certain size. But there is one fundamental reason that always comes into such matters. How do you assign priorities? Where is the \$3-\$4 million a year for the Cosmotron going to come from? What work would you cut off?"

To this a nuclear scientist close to the Wilson committee replies, "The committee didn't have in front of it the AEC budget and so couldn't determine what other facilities they might have cut out instead. But there are many activities not nearly so unique or vigorous as the Cosmotron that could be pared."

**Self-criticisms.** Perhaps the strongest charges the nuclear people direct are at themselves. One Wilson committee member confessed, "We started too late; we weren't sufficiently alert to the dangers. We should have knocked at the doors of AEC and Brookhaven two or three years ago and discussed the future of the Cosmotron at the time. I believe that physicists think about these things too casually and don't take responsibility on their shoulders until it's too late."

"If we had come in earlier and there had been time to find and organize support from other directions," says another scientist, "perhaps the Cosmotron might have been saved. But this idea of support from other agencies was not pushed as hard as it could have been. We never got that far. It's a case of too little and too late. Maybe there's a lesson in it for all of us." □