Reconciliation Action No Love Feast for NSF

National Science Foundation (NSF) funding seems to have suffered a setback when the Reagan Administration won its massive budget victory in the House of Representatives on the eve of the Fourth of July recess. Such was the confusion, however, that it is still difficult to assess accurately the implications.

Rumors during the debate that NSF funds had been "zeroed" were soon contradicted by Republican and Democratic leaders. But NSF is now regarded as more vulnerable to Republican efforts in the House to reduce total foundation spending and shift funds among programs, probably at the expense of basic research.

What happened was that funds for NSF were not included in the huge, omnibus "reconciliation" measure that was pushed through by a coalition of Republicans and conservative Democrats as a substitute for legislation put forward by the House Budget Committee, on which Democrats hold a majority. Separation from the reconciliation measure means that the NSF authorization will come to the floor on its own. Thus NSF is being thrust into an exposed position at a time when Administration forces are enjoying a run of success on budget matters.

Republican committee staff sources say that because NSF was left out of the substitute reconciliation measure does not indicate that it is being targeted specially for cuts. The thinking was that big-budget, controversial items should be packaged together, and NSF and other small science agency budgets did not fit that bill.

Nevertheless, Republicans are likely to seek to reduce the funding authorized for NSF by the House Science and Technology Committee. The problem as Republicans see it is that the committee's authorization for NSF is some $127 million higher than the $1033.5 million requested in the Reagan Administration budget. Republican members of the science committee, led by ranking minority member Representative Larry Winn, Jr. (R–Kans.), are expected to try to trim the NSF total. At the same time they want to increase funding for science education and instrumentation for research. To find such funds in a smaller budget will obviously require reductions in other programs, presumably basic research.

The budget process is far from complete. Appropriations bills are only now headed for the floor and the House-Senate dialogue on the budget has not really begun. But the rout of the House Democrats in the reconciliation battle may indicate that what is left is largely formalities. And the Administration, notably Office of Management and Budget Director David Stockman, seems to be calling the tune.—***John Walsh***

Polish Scientists Form New Society

After more than 6 months of anxious waiting, a group of Polish scientists and men of letters have been given government permission to form a Polish Society for the Advancement of Sciences and the Arts. The president is Grzegorz Bialkowski, physics professor at Warsaw University.

Bialkowski, who recently spent 3 months at the University of California at Davis, told *Science* that informal groups of academics, doctors, and science journalists began talking of the possibility of such a society following the strikes of last August which led to a more lenient political climate in Poland. The first formal meeting was held last November, when proceedings were initiated to get registration from the Ministry of Internal Affairs. The Polish Academy of Sciences also gave its approval. The society, which has no formal government connections, now numbers about 200 members, including the president of the Polish Academy.

The purpose of the new society will be to evaluate science policy and education at all levels of the system and to attempt to reduce the influence of the state in the content of instruction and on academic advancement.

Specifically, Bialkowski says the group has been organizing panel discussions on "urgent matters" such as the structure of higher education in science and the humanities. For example, there is pressure among students and professors to eliminate the requirement for some ideologically based courses on politics and the economy and to make them optional.

Another issue the society wants to address involves the government's standards for financing basic research which Bialkowsky characterizes as very formal and bureaucratic. Related to this is increasing the role that merit plays in academic advancement. Says he, "In Poland this is a fresh problem since World War II, completely in disagreement with Polish traditions."

Other areas the society intends to address are the impact of political decisions on science in Poland, cooperation among different disciplines, public understanding of science, and science education from elementary school on up. It also wants to cultivate more international contacts and address technical problems such as the difficulty of obtaining foreign books and journals.

Bialkowsky acknowledges that the political situation continues to be unstable but contends that is not a reason to delay plans. "If we say we won't do anything because of fear of violent changes, then we will do nothing at all."—***Constance Holden***

Israeli Denied Visa for Conference in India

An international conference on Mössbauer spectroscopy, which was scheduled to take place in India on 13 to 18 July, has been postponed following difficulties in obtaining visas for Israeli participants. The International Union of Pure and Applied Chemistry (IUPAC), which was sponsoring the meeting, withdrew its support on 19 June, and said that it would sponsor no further meetings in India until assurances are given that all bona fide participants would be granted entry visas.

The official reason given by the Indian organizers for postponing the meeting was that a fire on the university campus where it was scheduled to take place had made the logistics very difficult. But the postponement came just a few days after withdrawal of IUPAC sponsorship, and after some speakers had indicated that they would not participate unless the Israelis were allowed to attend.

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The troubles began in late May when Shimon Ofer, an Israeli chemist who was scheduled to speak at the meeting, was informed that his application for an entry visa had been turned down. A second would-be Israeli participant, E. R. Bauminger, was still awaiting action on her visa application when the conference was postponed. No explanation has been offered.

The IUPAC secretariat in Oxford, England, was informed of the visa difficulties early in June, and a cable was immediately sent to the conference organizers stating that unless the Israelis were allowed into India for the meeting, IUPAC would be forced to withdraw its sponsorship. IUPAC set a deadline of 19 June for the matter to be resolved. The conference organizers replied that the issue was under review "at the highest levels of government," but when no action had been taken by the deadline, IUPAC withdrew its support. "We had no alternative," says N. C. Williams, IUPAC's executive secretary.

Withdrawal of IUPAC support has only symbolic value. IUPAC essentially approves the scientific content of meetings it sponsors, but does not put up money nor participate in the organization. Nevertheless, withdrawal of IUPAC support is not taken lightly. In 1977, IUPAC withdrew its sponsorship of a meeting in Yugoslavia following denial of a visa to a South African scientist; the South African was admitted the following day, and IUPAC sponsorship was reinstated.

The Indian episode has raised doubts about the participation of Israeli scientists in future meetings in India. Officials at the Indian Embassy in Washington insist that there is no general policy to deny visas to Israeli scientists. The conference organizer, V. G. Bhide, also informed IUPAC, in a letter received 1 July, that the Indian government has given assurances that it has no intention of barring any bona fide scientist from participating in international conferences. Permission for Israeli scientists to enter India is based, said Bhida, not on visas but on landing permits issued at the airport when they arrive.

An official government statement will probably be needed to clear up the confusion before IUPAC will sponsor future meetings in India.

—Colin Norman

Solar Power Satellite Research Called Premature

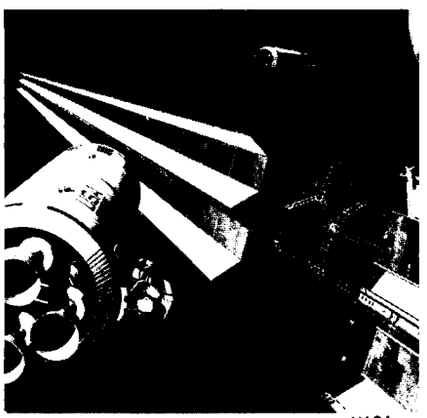
The National Academy of Sciences has found itself in the unusual position of recommending against the expenditure of research funds. In a report released last week, an Academy committee said that although solar power satellites might hold great potential for the 21st century, it would be premature to spend research and development funds on them in the 1980's.

Much of the needed research will be going on for other purposes, the report added. For now, NASA and the Department of Energy should simply keep a close eye on relevent technologies such as low-cost photovoltaics and the automated construction of large space structures, and periodically report to Congress.

"Electric Power from Orbit: A Critique of a Satellite Power System" is a product of the Satellite Power Systems Committee of the National Research Council, the academy's operating arm. It reviews a 3-year, $20-million DOE/NASA study of the SPS completed late last year. The review was performed at the request of DOE and largely with DOE funding. The committee relied heavily on the study's technical research, although it did consult frequently with independent experts. The National Science Foundation, which in 1979 was authorized to study the construction of SPS's with extraterrestrial materials, also helped fund the NRC review and was the official sponsor of the project.

The DOD/NASA study had considered a specific "reference" SPS system with 60 satellites spaced around the earth in geosynchronous orbit 36,000 kilometers over the equator. Each would hold a rack of photovoltaic cells the size of Manhattan Island, together with antennas for beaming power down to the earth in the form of microwaves. Upon its completion in 2030, the system's total output would be about 300 billion watts, half of the electrical generating capacity of the United States in 1980.

The NRC panel concluded that the DOE/NASA study, which included evaluations of the economic, social, political, and environmental impacts of such a project, was well-conceived and well-managed. However, it found the earlier study's price tag of $1.3 trillion for the SPS extremely optimistic. Despite economies of scale and expected advances in technology, the committee found that the costs of crystalline silicon cells are likely to be 10 to 50 times higher than that assumed in the reference system. NASA's cost goals for transport to low earth orbit were also low by a factor of 2 to 3. Finally, the committee pointed to cost overruns on even relatively well-understood aerospace projects. The reference system is "in concept, simple and attractive; but in actual scope, without parallel in human experience in the design, construction and operation of systems," says the report. The earlier study had estimated that the reference system would cost about $4000 per kilowatt of installed capacity. The NRC's most optimistic estimate is $10,000 per kilowatt. Conventional electric power currently costs about $1000 per kilowatt.



NASA

An artist's view of SPS

Building an SPS system with material mined on the moon or extracted from asteroids is an attractive idea, says the NRC study, but building the mines and transport systems would be even more complicated and expensive than the SPS itself.

The Office of Technology Assessment, which will soon release its own report on SPS, reaches similar conclusions about the time scale and difficulty of the endeavor. However, the OTA report points out that even a relatively modest SPS research program, funded at $5 million to $30 million per year, could make significant progress in defining relevant technologies and perhaps in lowering the cost of the SPS.

—M. Mitchell Waldrop