

EPRI will have at its disposal funds comparable to the research budget of a middle-sized federal agency. Some observers wonder, however, if the institute will really have a free hand as a research organization. EPRI board members are power company executives, most of whom have legal or financial rather than technical backgrounds. How much pressure, for example, will be put on EPRI to continue existing research projects or to help solve the operating problems of particular power companies? Starr says he was recruited under the general under-

standing that EPRI would run its own show and that so far he has encountered no issue that raised a "philosophical difference" between him and the board.

EPRI will be operating in a rather neglected sector of research. R & D on military and space systems has been funded by an ample flow of federal money. In private industry, research programs such as those operated by IBM and Bell Laboratories have produced impressive and profitable new technology. But in fields such as transportation, housing, and power production, neither industry nor government

has excelled in promoting R & D which would make it possible to use advanced technology to solve national problems.

EPRI's objectives are similar to those of the National Science Foundation's RANN (Research Applied to National Needs) program. But EPRI is a new sort of organization, and its backers think that the institute's close ties with the end users of its research will prove a special advantage. If EPRI does do well, it is likely to serve as an inspiration and a model to other industries which have been technological under-achievers.—JOHN WALSH

Training Grants: Tied Up in Congress with Ethics Bills

Scientific activity cannot be turned on and off like a faucet. The withdrawal of support disperses highly trained research teams, closes vital facilities, loses spinoff benefits, and disrupts development momentum. The current [Johnson] Administration has even struck at the lifeline of our future progress—science education. . . . Especially hard hit in the reductions is aid for postdoctoral students who serve as graduate student instructors. The decline of science education is the most damaging indictment of present Administration policy; it threatens to cripple the national effort in science for years to come.—RICHARD M. NIXON, October 1968

If Richard Nixon were to say today what he said in defense of science education during the 1968 presidential campaign, he would doubtless please—and surprise—the scientific community. But in light of current fiscal realities, that is hardly likely to happen. After almost 5 years, it is apparent that the President does not favor the expenditure of millions of dollars of federal funds for the support of graduate education. Instead of generally increasing graduate student support, as many educators hoped would happen, the Administration has emphasized aid to the disadvantaged only, relying on various loan programs to help students who do not qualify as very poor. In all this, science graduates have been particularly hard hit.

The impact of the Administration's decision to curtail spending has been most conspicuous in the biological sciences, where support of young postdoctoral researchers through the National Institutes of Health (NIH) train-

ing grant program has been cut back dramatically (*Science*, 26 Jan.). All year, leaders in the biomedical community have been busy trying to persuade the Administration to change its mind or to persuade Congress to force it to do so. It is hard to say how they are doing. They have made some headway with both camps but have yet to actually get training money back.

The Administration has agreed to institute a new program in place of the old one it insists on phasing out, but the new program is quite limited and has yet to get off the ground. Both houses of Congress have agreed to legislation restoring money for the NIH training programs, but those House and Senate bills have been tied up by amendments dealing with medical ethics and are, at the moment, in congressional limbo.

The Administration program, which Health, Education, and Welfare Secretary Caspar Weinberger announced in July (*Science*, 27 July), provides \$30

million a year (instead of approximately \$130 million) for a program that will provide fellowships of \$10,000 to individual trainees. Unlike the now-defunct training program, the new program will not pay large sums directly to institutions except in a very few situations in which there is a policy decision to encourage research in certain areas that are being neglected.

Originally, NIH officials hoped to be able to start accepting fellowship applications by 1 October. Now, they think they'll be lucky if they can begin in November. The problem is that, as yet, the new training program does not really exist—it has no money—and all anyone can do is wait for final approval from the White House Office of Management and Budget (OMB) which is still reviewing the matter. At OMB's request, NIH submitted a detailed spending plan that goes so far as to allot sums by discipline, with special emphasis on areas of "shortage" in which more manpower is presumably needed. Whether OMB will accept the NIH plan is uncertain. Some observers, who may be overly pessimistic, are betting the program will never get started. Others predict that when it does get OMB approval, it will be for less than the announced \$30 million.

Meanwhile, on Capitol Hill Representative Paul G. Rogers (D-Fla.) and Senator Edward M. Kennedy (D-Mass.) have taken up the cause of restoring training grants. However, it is not clear whether they are working with or against each other.

Training grants and medical ethics, and even peer review, have become inextricably linked in the course of efforts to get a training bill passed. In May, Rogers introduced a bill to restore the NIH training program vir-

tually as it had been, although his bill included a provision requiring trainees to pay back the money they received if they chose not to spend a year in research for every year they were supported. Rogers' bill calls for an expenditure of \$208 million over 2 years. In addition to its training provisions, it contains a clause saying that none of this money may be used to support unethical research in the United States or abroad. An amendment to the bill prohibiting the use of federal funds for research on live fetuses was added on the floor and the bill passed the House.

In June Kennedy introduced two bills in the Senate. One dealt with training but contained provisions that made it substantially different from Rogers' bill. Kennedy emphasizes giving fellowships directly to individual scientists (as does the Administration's program) who would be selected centrally through NIH. Generally speaking, Rogers prefers the old system of giving money to institutions which then decide to whom training grants will go, although his bill does provide for some centrally awarded fellowships. (Under the old program, NIH had funds for both training grants and fellowships.) The Kennedy bill calls for the same amount of money as the Rogers bill—about \$208 million—but Kennedy would spend it in 1 year rather than 2 years. Both Rogers and Kennedy call for a study of the entire training situation by the National Academy of Sciences.

The second Kennedy bill focused on the ethics of human experimentation and called for creation of a national commission that would establish regulations governing medical experimentation and, at the same time, study the ethical implications of advances in research with a view to deciding what those regulations should be. After hearings, the Senate combined the training and ethics bills into one.

[The Senate bill also contains an amendment that would give the NIH peer review system the sanctuary of the law. Under that system, all grant applications are reviewed and ranked by expert scientists who sit on "study sections." Last spring, the biomedical community feared that this peer review structure would be destroyed in the course of an HEW effort to eliminate many of its hundreds of committees (*Science*, 25 May). As things stand now, those study sections were created by a regulation and could be disbanded easily. The amendment, introduced by Gaylord Nelson (D-Wis.), would preclude that possibility. In addition to preserving the present peer review setup, which applies to research grants, the amendment calls for creation of a similar system for review of all research contract applications.]

Rogers, reportedly, was not happy about the Senate's decision to combine the training and ethics bills. He had hoped to get a training bill through Congress but found himself confronted with a bill containing many provisions

that his subcommittee in the House had never considered. So, before the House could agree to go into conference with the Senate on the matter, Rogers held hearings on the ethics provisions late last month. Although there was a general feeling that regulations governing human experimentation are in order—HEW and NIH are already working on new guidelines and some already exist—and that a commission to study the ethical questions raised by scientific advances makes sense, there was no consensus that the two aspects of the issue should be handled by the same group, as Kennedy proposed.

Now that the House has considered the ethics proposals, it is ready to go into conference with the Senate but when that will happen is uncertain, just as there is no guarantee of what provisions a final bill will contain. A number of scientists are hoping for a bill that contains training provisions and calls for a commission to study ethical questions, leaving the regulatory provisions out. But even if that happens, the bill will still have to get the presidential seal of approval. Some observers say that by attaching an ethics provision to the training grant legislation, Congress will make it very hard for the President to veto the bill. But if it contains a \$208 million figure for training—\$178 million more than he wants—it is difficult to imagine that Nixon will be deterred from a veto just because he would be vetoing a study commission in the process.

—BARBARA J. CULLITON

Water Projects: How to Erase the "Pork Barrel" Image?

For years water resource projects such as flood control dams and barge canals have been widely thought of in terms of the pork barrel, with the benefit-cost analysis used to justify those projects often regarded as something of a confidence game. And, in truth, while many useful and well-justified projects have been built, questionable ones have been both numerous and conspicuous enough to account for the cynical view which many citizens take

of water resource development decisions. Now, the U.S. Water Resources Council (WRC) has promulgated—in the *Federal Register* of 10 September—a new set of "Principles and Standards" that aim at reform of water project planning and evaluation.

The preparation of such principles and standards was one of the major aims Congress had in mind when the WRC, an interagency body made up chiefly of the heads of departments

responsible for water resources development, was established under the Water Resources Planning Act of 1965. Some 8 years in coming, the new guidelines are here at last, and, having received the explicit approval of President Nixon himself, they are scheduled to take effect 25 October.

Congress, however, has ever been ambivalent toward reform in the evaluation of public works proposals. And, for a fact, the public works committees of the House and Senate want no reform that cuts drastically into new starts in project construction, as application of the new Principles and Standards might do. Accordingly, these committees hope to set aside some if not all of the provisions of this document, but without much chance of success given the President's power of veto. But the conflict over the Principles