... but gives \$30m back to NSF

THE US Senate agreed on Monday to restore \$30 million of the \$44 million which the House of Representatives had earlier cut from the research budget of the National Science Foundation for the fiscal year 1978.

The Senate Appropriations Committee had recommended that \$40 m be restored, in line with the sum that the Senate had already authorised. This would have brought the NSF's budget to \$927 m, only \$7 m less than the amount requested by the administration.

However, Senator William Proxmire, Chairman of the Appropriations Subcommittee responsible for the NSF budget, introduced an amendment to the Appropriations Bill during the debate on the floor of the Senate on Monday afternoon cutting 2% off the total budget of all agencies covered by the bill.

Initially the cut would have been across the board, thus reducing the NSF budget by a further \$20 m from the total recommended by the Appropriations Committee. But the amendment as finally passed by the Senate distributed the cuts between the different agencies covered by the bill in such a way that the NSF budget was

reduced by only \$10 m, leaving it up to the foundation to decide where the cuts should come.

The House, in appropriating only \$893.9 million—\$44 million less than had been requested by the administration—had made a number of cuts in the foundation's new Applied Science and Research Applications (ASRA) directorate, much of whose work, it had claimed, should be carried out by other government departments. The Senate committee, however, apparently convinced of ASRA's potential, recommended that \$67 million be appropriated for it, an increase of \$9.1 million on funds currently available for the NSF's applied research programme, and only \$6.9 million less than the total initially requested.

The committee, however, in its report on the appropriations bill, expressed concern that ASRA's emphasis upon "integrated basic research" should not become a means of diverting funds from applied to basic research, and directed the NSF "to take whatever steps are necessary to ensure that funds administered by the ASRA directorate are not channelled into pure basic research".

David Dickson

Departments urged to support basic research

DR Frank Press, director of President Carter's Office of Science and Technology Policy, and Mr James T. McIntyre, director of the Office of Management and Budget, have written to the heads of all federal departments and agencies asking them to give 'careful consideration' to support of basic research in drawing up their budget proposals for the fiscal year 1980.

Mr McIntyre has already indicated that there is likely to be a "growth pause" in the 1980 budget, whose target deficit has recently been reduced from \$60.5 billion to \$43.5 billion due to growing concern about the effects of inflation.

In a memorandum to agency heads, the two presidential advisers say that "despite these tight constraints, we believe that it is important to re-emphasize the administration's concern for the funding of basic research".

They stress that it is the policy of the administration to assure effective support of basic or long-term research, particularly to provide a better basis for decision making or for dealing with long-term national problems.

Support for such moves has also come from the National Science Board, the policy-making body of the National

Science Foundation. In a report on *Basic Research in the Mission Agencies* which was presented to Congress by President Carter last week, the report states boldly that "basic research is useful", and emphasises that basic research has produced and continues to produce significant additions to scientific knowledge that are, or promise to be, of high potential in addressing national problems and concerns.

The report says that, in the main, mission agencies acknowledge payoffs from their investments in basic research, and points out that although there has been a 25-fold increase in current dollar terms in the amount of basic research performed in universities in the period 1953 to 1977, the performance of basic research by industry has increased by only 5 times over this period.

Dr Grover E. Murray, vice chairman of the National Science Board and chairman of the committee responsible for the report, said last week that "as a result of this review of the agencies and their activities, the board affirms its strong belief in the value of multiple support of scientific research by the federal government and in the key role of the mission agencies". □

Rogers proposes commission on research ethics

REPRESENTATIVE Paul Rogers, who has been responsible for much recent US health research legislation, has introduced a bill into the House of Representatives to set up a presidential commission for the study of ethical problems in medicine and biomedical and behavioural sciences.

The commission would include health professionals, biomedical and behavioural research workers, as well as non-specialists in these areas, and would require all executive agencies to provide pertinent information requested by the chairman.

The commission would be required to conduct studies of the legal, ethical and social implications of a number of specific issues, including the allocation of federal resources for biomedical and behavioural research and health care delivery, the requirements and guidelines applicable to clinical trials, counselling and testing for genetic diseases, and developments in *in vitro*

Rogers: grappling with dilemmas.

fertilisation.

It would succeed the present National Commission for the Protection of Human Subjects of Biomedical and Behavioural Research, which has more narrowly defined responsibilities, and will go out of existence at the end of October. Six weeks ago the Senate passed a resolution sponsored by, among others, Senator Edward Kennedy which would extend the life of the present commission for a further four years.

Introducing his bill in the House last week on behalf of members of the health and environment subcommittee of the House of commerce committee, Mr Rogers said that ethical problems connected with research on human subjects still exist. The US was grappling with many very difficult ethical dilemmas in medical practice

and in the conduct of biomedical and behavioural research which went far beyond the protection of the rights of research subjects.

"It is time we began to deal with these problems directly and as expertly as possible. Our experience with the national commission has demonstrated that the concept of a working study commission is a valid one, and has provided a model which may now be applied to the study of these areas at a time when Congress and the administration is having to make crucial policy decisions."

Earlier this year, an editorial in the *New York Times* praised the work of the national commission, pointing out that its guidelines for the conduct of research on, for example, fetuses and prisoners had shaped research practices and had often been incorporated into government regulations, while fears that the commission would block valuable research had proved largely unwarranted.

However elsewhere the idea of a new commission with broadened responsibilities is likely to receive a cooler reception. Some research workers have claimed recently that research into *in vitro* fertilisation techniques, such as those used by Steptoe and Edwards leading up to the English "test-tube baby" birth, has been held up by the deliberations of a 12-person ethics advisory board set up last year by the Department of Health, Education and Welfare.

David Dickson

Geologists warn of uranium shortage

UNLESS there is a substantial increase in research and exploration efforts, demand for uranium fuel for light water nuclear reactors will soon outstrip supply, according to a report published last week by the US National Academy of Sciences.

According to the authors of the report, "if a [US] national policy decision is made to use nuclear-generated electric power as a major contribution to the total US energy supply, then at least a five-fold increase in the rates of discovery and development of reserves is necessary to meet current forecasts of future demands."

Among the measures recommended to achieve an adequate future supply of uranium is an expansion of the federally-supported research and development programme in the basic geology and geochemistry of uranium.

The report has been prepared as part of a comprehensive study of the nation's prospective energy economy during the period 1985 to 2010 currently being undertaken by the National Research Council at the request

of the Energy Research and Development Administration (now the Department of Energy).

The study is being conducted by a Committee on Nuclear and Alternative Energy Systems through an elaborate system of panels and resource groups involving more than 200 individuals. The committee's report had initially been scheduled for completion by 30 June 1977. However following difficulties in reaching a general consensus, no date for completion has yet been fixed, and it has been decided to publish in advance the reports of the various panels and resource groups, stressing that these do not necessarily reflect the view of the committee.

"Unless more money is put into research on uranium sources there won't be enough energy to power the research centre!"

The report on US uranium resources was prepared by a subpanel chaired by Dr Leon T. Silver, professor of geological and planetary sciences and the California Institute of Technology. The subpanel says that domestic uranium production has been between 12,000 and 13,000 tons of U_3O_8 for the past five years, and is estimated to reach between 17,000 and 19,000 tons by 1980, and between 22,000 and 26,000 tons by 1985. It claims that this will fall significantly short of the Department of Energy's forecasts of demand and production, and of its contracts for enrichment, if constraints on exploration and development are unchanged.

The subpanel also says that foreign exploration and demand are growing at comparable rates, and that the US will have to compete vigorously in order to obtain significant supplies of uranium abroad. The subpanel adds that the US "will have no particular exploration advantages unless it develops superior science and technology by a programme of research at home".

Current federal programmes of geological, geochemical and geophysical research relevant to uranium exploration are, it says, in general limited in concept and magnitude, inadequate in funding direction and co-ordination, and do not utilise the best talents and technical capabilities available in the US research community. □

Select Committee recommends itself for fast breeder inquiry

THE UK Select Committee on Science and Technology, clearing its cupboards before a possible general election, has recommended that it should hold a public inquiry into the future of Britain's Fast Breeder Reactor (FBR) programme. The inquiry should be completed within a single session of Parliament, preferably the next one.

In 1976 the Select Committee was told by the UKAEA that a decision to construct a commercial demonstration fast reactor (CDFR) must be reached within two years; but since then there has been a considerable change of atmosphere, with no firm proposal forthcoming from either the UKAEA or the Government. During the Wind-scale Inquiry into the reprocessing of nuclear fuel, Energy Secretary Tony Benn pledged an inquiry into FBRs without specifying what form or terms of reference it should adopt. The Select Committee now hope that their own inquiry would help to precipitate some decisions.

The Select Committee aims to inquire into the wider issues raised by FBRs, rather than study any particular proposal, such as the CDFR. Mr Arthur Palmer, the Committee chairman, said last week that the Committee hoped to avoid the ground already covered "by the numerous comprehensive and exhaustive enquiries into FBR policy options and technology which have already been made in North America and Western Europe". Rather it should concentrate on the implications of the previous work, whether general to FBR technology, or peculiar to its development in Britain.

Certainly there must be a further inquiry as soon as definite proposals for the CDFR are put forward; several Acts of Parliament allow for planning inquiries, depending on the exact nature of the proposal.

The details of the Select Committee's own inquiry will not be settled until the next Parliamentary session; but by that time there may be a new Government, or the responsibility may have fallen to a new Select Committee on Energy. The key procedural problems will be to decide whether interested parties can cross-examine expert witnesses, and to determine exactly what range of subjects will be held to be relevant. Until these problems are resolved, the proponents of FBRs will remain suspicious that the inquiry will merely duplicate others, and the FBR's opponents will fear that the whole exercise is designed to rubber-stamp the fast breeder programme.

Peter Scott