

which had previously been endorsed by the committee, particularly because of problems with leakage in the existing British fast reactor steam generator components. Mr Wydler also said, however, that UK Atomic Energy Authority officials felt that cooperative agreements with the United States presented unique difficulties because of the Freedom of Information Act and the Atomic Energy Act requiring the disclosure of proprietary business information.

In contrast with his defeat in the fast breeder debate, Mr Stockman seems to have won on the other point of dispute with nuclear advocates in the Department of Energy, namely renewed federal support for spent fuel reprocessing from commercial reactors. The nuclear industry has been pushing for the reopening of the Barnwell reprocessing plant in South Carolina, which was denied funds by the Carter Administration; no money for commercial reprocessing is, however, included in the budget request, although there are funds for the West Valley Demonstration Project.

Backing up its general stance in favour of reprocessing, however, the Reagan Administration has decided to discontinue the spent-fuel programme intended to provide storage facilities away from power station sites. This programme is being refocused within the Department of Energy to concentrate on the development of alternative spent-fuel storage technologies which can be used by utilities at existing reactor sites.

Although the Administration has set its face against subsidies for commercial reprocessing, it has in the past few days become known that plans to dismantle at least this aspect of the Carter anti-proliferation policy are being worked out.

David Dickson

German big science

Win some, lose some

Germany should spend an extra DM 800 million (£170 million) on big science projects over the next ten years, recommends the committee set up a year ago by the previous minister of science, Volker Hauff — and another DM 425 million of projects should be accounted for under the current budget.

The "big science" committee, chaired by Professor Klaus Pinkau (who was recently appointed director of the Max Planck Institut für Plasmaphysik at Garching) reported last week to Minister Andreas von Bülow on a shopping list of ten major projects (*Nature* 3 July 1980, p.8) ranging from high-energy physics to geology, which, if they were all undertaken now, would have cost Germany at least DM 2,015 million (430 million). On being given the task, Pinkau said it would be a "work of art" to steer the right course between scientific worthiness and the government's

ability to pay — for the committee was given no financial guidelines. In the interim, the German economy has weakened, and the Pinkau committee felt obliged to take cost strongly into account.

However, some sleight of hand reduces the bill. The committee recommends that Germany support LEP, the large electron-positron collider which physicists would like to see as the next major facility at CERN, the European subnuclear physics laboratory in Geneva. LEP will cost Germany DM 350 million; but as it is likely to be built within CERN's current budget and staff, the committee reckons it will mean no extra expenditure. Similarly, a DM 75 million replacement for Meteor, Germany's principal and ageing oceanographic research vessel, can be paid for within the current geosciences budget.

Of the other projects, the committee says the refitting and expansion of the BER II research reactor at the Hahn-Meitner Institut, Berlin, costing DM 47 million, should be undertaken immediately"; so should the construction of the DM 33 million SUSE, a 250 MeV superconducting cyclotron for heavy ion physics proposed by the Technical University of Munich — provided the university can raise part-finance from the regional government of Bavaria, and make the accelerator a national facility. An equivalent facility proposed by the Jülich nuclear laboratory near Cologne was rejected (it cost more).

The committee puts some of the most expensive projects on ice. HERA, a high energy proton-electron collider for the DESY subnuclear physics laboratory at Hamburg which would cost DM 600 million (in two parts) is recommended "in principle", but a decision should await developments in superconducting technology; and the question of a relativistic heavy ion accelerator for GSI Darmstadt (DM 190 million) is to "remain open".

The latter raises an interesting question in physics: will relativistic heavy ion collisions lead to entirely new states of nuclear matter (as in neutron stars) as some nuclear physicists predict, or will it just lead to a mass of high energy but otherwise familiar fragments? The feeling in Germany is that some low cost test of this question should be made first, for example, by feeding heavy ions into the intersecting storage rings at CERN. But if such experiments were done, German thinking goes, it should be *outside* CERN's budget or there will be no money for LEP.

On this issue, on HERA, and on others such as the proposed spallation neutron source (where Jülich and Karlsruhe have competing proposals) and the deep drilling programme of the Deutsches Forschungsgemeinschaft, Germany will also be looking for increased international collaboration. The European synchrotron radiation source, however, proposed by the European Science Foundation, is said to be "not of high priority". **Robert Walgate**

Madrid conference

Detente denied

Western leaders have failed to react "realistically" to Mr Brezhnev's latest proposals for detente, a *Pravda* editorial complained last week. The proposals, put forward at the party congress last month, covered three main issues: the extension of "confidence building measures" (CBMs) to all Soviet territory west of the Urals, and the possibility of introducing similar measures in the Far East, special negotiations on the Persian Gulf and Afghanistan, and a moratorium on medium-range nuclear weapons in Europe.

The party congress coincided with the closing weeks of the Madrid review conference on implementation of the Helsinki Final Act. CBMs, as specified in the Final Act, cover notification of major military manoeuvres (more than 25,000 troops), exchange of observers for manoeuvres and also notification of major troop movements, though this last clause is left to the discretion of the participating states. Notification of manoeuvres, moreover, in the case of a participating state whose territory extends beyond Europe, is mandatory only for an area within 250 km of its European frontier. The suggestions that the Helsinki clauses on CBMs should extend as far as the Urals, came, initially, from the French delegates to Madrid, and were not greeted with enthusiasm by the Soviet delegation, until, on 23 February, Mr Brezhnev made them his own. Not surprisingly, Mr Brezhnev suggested some kind of reciprocity from the West. Since the whole of Europe falls within the CBM zone, this would presumably have to be of a qualitative nature, such as the discretionary notification of smaller-scale troop movements, or, judging from hints in the Soviet media, curtailing "provocative" broadcasts to the Soviet bloc.

Afghanistan, too, was an issue which the Soviet delegation at Madrid at first tried to block as "irrelevant" (because the Helsinki Final Act referred to security and cooperation in Europe). Mr Brezhnev's call for a moratorium on nuclear arms seems to reiterate the Polish proposal at Madrid for a European disarmament conference in autumn 1981. Unfortunately, none of Mr Brezhnev's peace proposals touched on the sensitive issue of declaration and verification of troop and armaments strength — the point on which all similar negotiations have broken down for the past 35 years. His suggestion of an "authoritative international committee" whose members "might include the most prominent scientists" of the countries concerned, which would "demonstrate the vital necessity of averting a nuclear catastrophe" has, however, been passed on to the international Pugwash council as a matter of urgency.

On the other aspects of detente, the

Moscow seminar threat

The Moscow Sunday seminars for Jewish refusenik scientists, which have been held (official harassment permitting) since 1973, now face a new threat. Last Friday, Dr Irina Brailovskaya was informed by the deputy chairman of the local municipal council that if she continued to host the seminars, she and her whole family would be liable to internal exile.

This official told Dr Brailovskaya that there had been complaints from the neighbours about the holding of the seminars. "We do not object to scientific meetings", he explained, "but the devil only knows what is going on here!"

The seminars have only recently resumed after a KGB clamp-down last autumn. Following the arrest of Dr Viktor Brailovskii, on 13 November, for several weeks the apartment was surrounded on Sundays by security police who turned away intending participants. Early in the new year, the seminars resumed on Saturday evenings, and then, a few weeks ago, reverted to the traditional Sundays.

In a recent message to Western scientists, Dr Brailovskaya said that her husband has been held in custody beyond the legal limit (three months) within which he should have been either charged or released. He is, she said, in a poor state of health, suffering from chronic hepatitis and a blockage of the gall duct.

auspices seem good for renewed East-West cooperation. President Reagan's assistant secretary designate on human rights, Dr Ernest Lefever, is reported to favour keeping such matters distinct from international politics. The several thousand Western scientists who signed personal moratoria pledges bound themselves to limit their contacts with the Soviet Union only until the end of the Madrid conference. However, at the meeting of the United Nations human rights commission in Geneva last week, a motion from the Canadian delegation was dropped from the agenda. **Vera Rich**

Science education

Tap turned off

Washington

The Reagan Administration is proposing to eliminate all support at US universities for undergraduate and graduate science students at present provided by the National Science Foundation.

The cuts are part of a plan to phase out the foundation's responsibilities for science and engineering education, justified by the claim that these are of lower priority than the need to support basic research. But the proposed cuts may have been partially instigated by conservatives upset by some of the foundation's educational activities.

The cuts would eliminate several programmes introduced over the past few years, primarily at the direction of Congress. These include support for women, minorities and "talented individuals" in science, strengthening science teaching in middle and high schools, and efforts to improve public understanding of science.

The new Administration argues that such efforts are of low priority, and that they are too broadly spread and narrowly focused to have any significant effect. Science teaching has, however, always been treated better by Congress than by either the National Science Foundation itself or the Office of Management and Budget; and there remains a good chance that some of the money will be put back during the congressional review process.

In response to the report last year by the foundation and the Department of Education which drew attention to the growing "scientific illiteracy" among the US public and to concern over the lack of adequate technical graduates in fields related to energy and military technology, President Carter had proposed in January that the 1982 budget for the foundation should include an allocation of \$119.9 million for science and engineering education, a significant increase over the \$80.7 million allocated in the current year.

In contrast, the new Administration suggests that the current budget be reduced to \$64.7 million, and that support for science and engineering education next year be reduced to \$9.9 million. All of this sum would be used to meet existing commitments to students receiving fellowships.

Other cutbacks include the elimination of three major programmes: science education resources improvement (\$21.8 million in 1980), aimed at improving undergraduate instruction in two- and four-year colleges by upgrading instructional equipment and teacher competency; science education development and research (\$13.8 million) for developing new and more effective materials and methods of instruction in science and engineering; and science education communication (\$8.5 million).

Reaction to the proposed cuts has been sharp. Dr Alan Bromley, professor of physics at Yale University and president of the American Association for the Advancement of Science, warned that "to expect scientific and technological progress while abandoning efforts at improving science and engineering teaching in our schools is illogical and a disservice to the nation's interest". The association had previously announced that science education was to become a principal target of its own efforts over the coming year.

Dr Gerald Liebermann, dean of research at Stanford University, last week voiced the universities' anxieties: "In the past we have had to put little of our general funds to the support of graduate students in

Argentinians face charges

Dr Jose Federico Westerkamp, formerly professor of physics at the University of Buenos Aires, was arrested on 27 February 1981 during a police raid on the human rights organization CELS (Centro de Estudios Legales y Sociales, Centre for Social and Legal Studies). He was held in custody for a week, then released. Police investigations into his human rights activities are, however, continuing.

Dr Westerkamp, who had been active on behalf of human rights in Argentina for several years, was a co-founder of CELS, together with two lawyers — Dr Emilio Fermin Mignione and Dr Augusto Conte Mac Donell. The group, which was set up early in 1979 and legally registered in March 1980, investigates human rights abuses, including the defence of political prisoners and the gathering of data on "disappeared" persons. Dr Westerkamp, whose son Gustavo has been a political prisoner since 1975, has been particularly active on behalf of imprisoned and "disappeared" scientists and academics, and has on numerous occasions spoken on their behalf at international scientific meetings.

According to the Argentinian newspaper, *La Razon*, CELS members face charges under article 224 for possessing plans and diagrams of military installations, carrying a possible penalty of two to eight years imprisonment.

science and engineering, but it is likely that we will now have to reevaluate our whole policy in this area". Dr John C. Crowley, of the Association of American Universities, claims that the cuts would wipe out "one of the two functions for which the foundation was established" and "calls into question the basic purpose of the National Science Foundation".

At the foundation itself, where it has been frequently claimed that science education has received less support than basic research, officials admitted that the cuts were "hard to square" with the report presented to President Carter last autumn.

Federally-sponsored science education programmes have some powerful opponents on the right. Some argue that, in principle, the federal government should play a minimal role in curriculum development, leaving it to state and local schools boards; others have criticized the foundation's education activities in the past, for example in developing biology and social science courses which, they claim, reinforce "relativist" values by portraying man and woman as part of nature, rather than unique creations. The cuts in the science education budget seem to have been orchestrated by groups such as the conservative Heritage Foundation and are likely to receive support from conservative members of Congress.

David Dickson