

reaching many of its conclusions makes it difficult to check on whether the agency is doing a good job. NRC member Mr Victor Gilinsky expressed concern that protection given in IAEA statutes to industrial, secret or other confidential information has been interpreted in the broadest manner to withhold information about the safeguards system.

Suggesting that undue secrecy made it difficult for NRC to fulfil its responsibilities for checking the adequacy of IAEA safeguards — responsibilities whose legal status still remains ambiguous — Mr Gilinsky said that the commission believed more information should be reported to IAEA's board of governors by its secretariat, and that the United States should try to obtain better information on overall international safeguards effectiveness and on any significant safeguards problems in countries receiving US exports.

Mr Kennedy replied that the general limitations on the agency's role — such as the substantial amount of classified information which it could not release — are "simply facts of international relations. . . The IAEA safeguards system entails a unique compromise of sovereign rights by many nations, and it is certainly no surprise that this compromise is subject to specific limitations". **David Dickson**

## Germany's breeder Gap unbridged

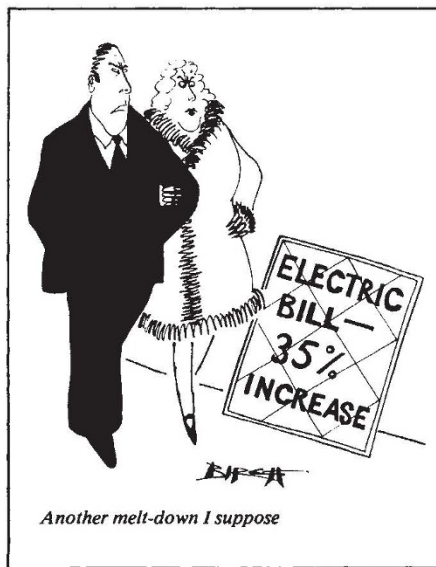
Ulm, West Germany

Rapidly rising costs are threatening the future of West Germany's SNR-300 fast-breeder reactor, with government and public service utility companies still arguing over who should foot the increased bill if the project is to continue.

The Minister of Research and Technology, Andreas von Bülow, has succeeded in extracting from the utilities an increased financial contribution to the SNR-300 plant at Kalkar. At the end of October he announced that Rheinisch-Westfälisches Elektrizitätswerk (RWE), the leader of the owner/operator utility group, is willing to put up an additional DM 375 million. Two other utilities not so far involved in the project, Preussenelektra and Nordwestdeutsche Kraftwerke (NWK) are prepared to contribute DM 172 million.

Even so these pledges fill only half of a total shortfall of DM 1,100 million created by recent cost overruns. The federal government is unwilling to provide the extra funds from its own budget, and insists that the full amount should be paid by West German industry and in particular by the utilities, each financing a fraction corresponding to its share of electricity generation. "It is perfectly clear," von Bülow recently said, "that without an increase in the participation of the utilities, the future of the fast breeder is in danger and a halt to construction before the end of the year cannot be ruled out".

The weeks ahead will show whether von Bülow's warning is merely a tactical ploy or whether there is a real chance that work on the fast breeder will stop. Although budgetary problems have triggered off this latest confrontation, if the minister regarded the fast breeder as an absolute economic necessity it seems likely that he could accommodate the necessary additional DM 550 million over five years (DM 110 million a year) within this present budget — the ministry has a proposed total budget of DM 6,600 million for 1982 and an energy research budget of DM 2,550 million. "The present situation," he said, "necessitates a reconsideration of the original objectives of government support." At the same time the minister announced that government funds for microelectronics and biotechnology will be increased over the next few years.



Another melt-down I suppose

Political uncertainty is one of the reasons why the utilities are reluctant to shoulder an increased share of SNR-300 costs. The Bundestag has reserved to itself the decision on whether the SNR-300 should be put into operation when completed. The utilities hesitate to commit themselves as long as this uncertainty persists, and the pledges made so far are contingent, among other conditions, on a positive decision from the Bundestag.

Licensing uncertainties have been another major obstacle — but here at least the greatest difficulties appear to have been overcome with the passing of the fourth part of the licence on 15 October.

Some utility companies originally argued that SNR-300 is a national project that should be financed from taxpayers' money. It remains to be seen whether they will soften their stand in the face of a threat to abandon the project. The West German utility association, VDEW, is now discussing alternative finance strategies including a research and development levy on electricity sales modelled on the present subsidy for West German coal used in the generation of electricity. **Otto Keck**

## Israeli education More gloom

Tel Aviv

The complaint that cuts in higher education could seriously endanger Israel's scientific potential in the 1990s ran through the symposium organized at the end of November by the Israeli popular science magazine *Mada* to celebrate its twenty-fifth anniversary. Ironically, the symposium coincided with the *Isratech* exhibition, a celebration of recent Israeli achievements in applied science.

While *Isratech* celebrated the success of Israel's funding policy, which for the past decade has emphasized applications, symposium participants maintained that, unless investment in higher education is stepped up, Israel's advantage in many sectors of technology could prove short-lived. The symposium was chaired by the physical chemist Dr Ephraim Katzir, formerly Katchalski, who produced the 1968 report which effectively switched government emphasis from pure to applied research.

Unlike other new states, Israel has a research infrastructure which antedates independence and which is based on institutions such as the Technion, the Weizmann Institute, the Hebrew University and the Volcani Agricultural Institute. Until the late 1960s, Israeli science policy was aimed at more of the same. The Kachalski report redirected government attention to the needs of industry. Only some of Katchalski's recommendations were implemented. Chief scientists were established in ministries involved in research and development, but the proposed upgrading of the National Council for Research and Development failed to materialize — indeed, in 1977, it was actually downgraded, being transferred from direct responsibility to the Prime Minister's Office to the new Ministry of Energy and Infrastructure. At the same time, all spending on research has been eroded by inflation, now 133 per cent a year.

Even so, the post-Katchalski era has produced a number of achievements. Industry has done well, and now employs more science graduates. Agriculture has seen a steady stream of advances in crop breeding, soil chemistry, irrigation techniques and such novel methods as the sterilization of soils by solar energy. Both production and productivity have increased.

The symposium was chiefly alarmed by the other side of this coin — the continuing absence of a national science policy and the continuing brain-drain to the United States and Europe. The participants blamed people's willingness to leave on the cutbacks in university finance and the mismatch between what universities teach and what industry (and students) demands.

In the past ten years, there has also been a stagnation of student numbers in the exact sciences while total student numbers have soared. The underlying reason is not