

# Nuclear waste bill now in sight

## But critics fear stop-gap stores will last

Washington

Congress is now closer than ever to passing a nuclear waste management bill, but its terms seem likely to be much more appealing to the atomic industry than to environmental groups, both of which, in a strange alliance, have for years been calling for a legislative solution to the growing mass of spent commercial fuel.

The Senate has already passed a bill that the industry is satisfied will end the uncertainty plaguing the government's waste disposal programme. In the absence of legislative directions, each administration has been free to set its own policy, usually inconsistent with that of the previous administration.

The environmental lobby, on the other hand, is worried that the Senate bill and its counterparts now under consideration in the House gloss over the serious technical problems of waste management in favour of political expediency.

At present, 8,000 tonnes of spent commercial fuel is in temporary storage at reactor sites. By the end of the century, the figure is expected to reach 72,000 tonnes. The ultimate solution, everyone seems to agree, is to dispose of it in deep geological repositories. This solution is provided for in all versions of the bill.

The bone of contention, however, has become whether the federal government should in addition provide some form of interim storage. According to the Atomic Industrial Forum, which represents the nuclear power industry, roughly half a dozen reactors will run out of on-site storage space by 1985; the problem will be widespread by the 1990s. The industry is thus very pleased that the Senate bill provides for stop-gap storage to cover any delays in a permanent repository.

The environmental groups see something more sinister going on. The interim storage envisaged in the Senate bill will be of two kinds. The first is "away-from-reactor" (AFR) storage, which is essentially the arrangement used at reactor sites: spent fuel elements are simply stacked in a water-filled "swimming pool" which absorbs the radiation and heat. The environmental groups charge that AFR is a way for the industry to avoid the licensing procedure required to expand on-site storage. The second kind of facility is "monitored retrievable storage" (MRS), which is only vaguely defined. The chief worry among the environmental groups is that MRS will become the *de facto*

permanent solution.

Brooks Yeager of the Sierra Club says that the Senate bill virtually guarantees that. It sets "not just ambitious, but unmeetable deadlines" for the construction of a geological repository. "They want to arrive at the issuance of a construction permit by the end of the decade. That's seven years faster than the Department of Energy's plans for construction in order to resolve all the technical problems." The timetable may also guarantee that the choice of sites will be limited to the three at which the Department of Energy has already begun tests — the Hanford

Reservation in Washington state, the Nevada test site and a group of sites along the Gulf of Mexico.

Professor Henry Kendall of the Massachusetts Institute of Technology, who is active in the Union of Concerned Scientists, a group critical of US nuclear policy, agrees that building an MRS facility "basically means you don't have confidence in permanent disposal". He says that what is needed is time to make a careful hydrological study of the actual site.

These worries seem to be backed up by a recent study by the Congress's Office of Technology Assessment (OTA). The

## British research — no cure yet

British university research is in trouble, but only the universities themselves can work their way out of it. This is the chief conclusion of the much delayed report of the committee under Sir Alec Merrison, vice-chancellor of the University of Bristol, set up two and a half years ago to brood about financial support for university research and published this week (Cmd 8567, HMSO, £4.35).

The report comes down squarely in favour of the British dual-support system, whereby the University Grants Committee (UGC) provides universities with the basic wherewithal for research and the research councils provide extra funds (but no overhead) for particular projects. But the committee also says that "the system has been under strains for several years".

One of the committee's chief proposals is that universities should more deliberately channel part of the funds they receive from the UGC into areas of research in which they consider themselves to be strong, for which purpose it says that British universities should set up research committees to supervise the internal allocation of funds. But the committee also says that as a stop-gap, the research councils should be prepared to "meet costs they would not normally meet" (a euphemism for paying overhead) or think of moving people doing good work in unfavourable circumstances to other places.

The essence of the committee's support for the continuation of the dual-support system is its repeated reaffirmation of the belief that if universities were not provided with funds that can be spent on their own discretion on research projects that would not normally win research council support, genuinely innovative ideas would never see the light of day. It considers but rejects on the same grounds that UGC support for research should be linked directly with the volume of financial support provided by the research councils, while it considers that if UGC were to earmark any but a small proportion of its university support for specific projects, the resulting rigidity

would be self-defeating.

The chief targets for the committee's advice are the universities, which are told that in the long run — "the prospects for achieving any significant shift in the near future are next to impossible" — they must be prepared to spend more of their resources on research rather than teaching, that they should "concentrate research funds into selected areas", look at the problems occasioned by academic tenure, find ways (with the help of the research councils) of bringing in "new blood" and be prepared to form associations with other universities for more effective prosecution of research. Both partners in the dual-support system are asked to be more sensitive to researchers' need to travel.

The research councils are given two principal tasks — to adjust the support provided for graduate students more regularly in tune with the increasing cost of living and to "study" the balance between their support of research in universities and in their own establishments. In a memorable sentence, the report says that "we are not satisfied that the balance of research council expenditure between such support and the work of their own institutes is in all cases right".

The committee's belief that university research is in trouble is based on statistical evidence that the committee says should be improved. The data do, however, show that the decline in research support from universities' own budgets goes back to the early 1970s, and that between the beginning and the end of that decade the average sum of money available to university departments per head of academic staff employed declined by 28 per cent in real terms.

These and supporting figures appear to have prompted the only note of near-acerbity in the committee's report — that while the British Prime Minister has repeatedly stated that the science budget has been protected, "the health of university scientific research does not depend only on the science vote". ●

report\* urges that waste be kept at reactor sites until a permanent repository is built to "avoid diverting the attention and efforts of the waste management agency away from the repository program toward provision of an independent interim storage facility".

Another sore point for environmental groups in the Senate bill is an amendment that Senator James McClure succeeded in attaching, which declares that the legislation itself represents reasonable assurance that a safe disposal method exists. Yeager says "It's a clear attempt to end-run several court cases and state laws". California, Oregon and several other states have passed laws restricting new power plants until such reasonable assurance exists.

To the industry, however, the amendment is nothing more than recognition of what they see as the obvious: the waste disposal problem is political, not technical. And here, the Office of Technology Assessment report backs the industry view. It found "no insurmountable technical obstacles" to development of geological repositories; rather, the chief obstacle is eroded public confidence, aggravated by a vacillating federal policy. President Carter, for example, reversed the previous policy of handling defence and commercial wastes separately; President Reagan reversed the Carter policy. Presidents Reagan, Carter and Ford each changed the number of sites under study for geological repositories and their construction schedules.

If a bill does emerge from Congress this year, it will almost certainly contain provisions to end this instability. Both Senate and House versions provide for long-term funding through a surcharge on nuclear electricity, which could raise \$300 million in the first year.

Both Senate and House versions also set up mechanisms for state participation in the site-selection process. The federal government's insensitivity to the concern of the states in previous siting decisions is viewed as a major factor in the loss of public confidence in the programme.

The chances that Congress will act this year are, according to all parties involved, better than they have been in past years. In 1980, both the Senate and the House passed bills, but failed to work out a compromise. This time, they start closer.

According to a staff member of Morris Udall on the House Interior Committee (Udall introduced the House bill), "there's no reason we can't get a bill except time". The prediction is that if the bill reaches the full House by mid-July, it should pass.

But passage may ultimately hinge on the complex politics of the House committees. No fewer than three have asserted jurisdiction over the measure, which is now tied up in the Energy and Commerce Committee.

**Stephen Budiansky**

\*Managing Commercial High-Level Radioactive Waste (Office of Technology Assessment, May 1982).

## International disarmament

# Palme's palm

A nuclear-weapons-free zone in Europe and greater United Nations (UN) power to prevent hostilities in developing countries are the chief recommendations of the Independent Commission on Disarmament and Security Issues whose report, *Common Security: a programme for survival*, was published last week. Although neither recommendation is new, Dr David Owen MP, former British Foreign Secretary, and Sir Shridath Ramphal, Secretary-General of the Commonwealth Secretariat, who presented the report in London, argued that their revival now is timely.

So, partly by design and partly by accident, was the publication of the report. The original intention was to produce recommendations for the UN Special Session on Disarmament which began this week. But the commission now also hopes that its document will inform the Strategic Arms Reduction Talks (START) due to begin in Geneva on 27 June. Dr Owen is optimistic that the South Atlantic conflict will focus attention on the recommendation for a UN fact-finding mission which could be called in by a country fearing imminent aggression by a neighbour.

The report comes after more than a year's deliberation by 17 distinguished politicians from as many countries under the chairmanship of Olof Palme, former prime minister of Sweden. The task of the commissioners, each of whom was chosen for their understanding of international affairs and not as a national representative, was to prepare a report on the consequences of the arms race along the lines of the Brandt report on economics.

The result is an analysis of global conflict and tension which embraces the effects of nuclear arms build up on North-South as well as East-West relations and the effects of the increasing sophistication and strength of conventional forces on relations between developing countries. The commission believes that the risk of a devastating war is increasing in spite of attempts at arms limitation. It says that national security can no longer be assured by military means.

The idea of a limited nuclear war and the conventional strategies of the NATO and Warsaw alliances on the early use of strategic nuclear weapons are challenged. The commission's answer is to create a nuclear-weapons-free zone in Europe by negotiating parity in conventional forces at reduced levels.

Over the past eight years, the report says, developing nations have been drawn into the arms race, while vertical proliferation in the five recognized nuclear powers has increased the probability of horizontal proliferation. Industrial nations have also made matters worse by selling sophisticated conventional arms to developing countries, making the escalation of local

disputes more likely. The commission is particularly critical of the high level of military spending by nations that can least afford it. Security for developing nations, particularly those with small populations whose borders are in dispute, must be assured by other means — hence the recommendation to revitalize the original intention of the UN charter by increasing the powers of the Security Council to preempt conflicts.

The commission's "programme of action" is divided into short and medium-term measures, for implementation within two and five years respectively. The programme includes measures to reduce nuclear and conventional forces in the NATO and Warsaw alliances, a nuclear-weapons-free zone, a comprehensive chemical weapons disarmament treaty, agreement on guidelines for conventional arms transfer, a substantial reduction in military spending and the transfer of military scientists to civilian research.

Little advice is offered on how to achieve these measures. But the commission is clearly hoping that the chief impact of its report will be to focus increasing public concern.

**Judy Redfearn**

## Italian science policy

# New consensus

### Venice

Italian science policy appears at last to be getting into gear, despite the almost annual changes of government that confound most long-term planning in this country. The reason? Politicians here have reached a consensus close to the French position that research is necessary to pull Italy out of its economic crisis.

This consensus is beginning to survive the rise and fall of governments, so the present science minister, lawyer Giancarlo Tesini, who has been in post for a year now in President Giovanni Spadolini's shaky five-party coalition, has been able to take some action.

One of his key moves has been to achieve five-party agreement on a reform of the Italian national research council (CNR) which until recently has dominated Italian government research and development both inside and outside universities. "CNR is a major problem of the Italian science ministry", Tesini said here last week, where he is attending a scientific meeting.

Broadly, Tesini wants to shift CNR, with most of its laboratories in universities, into a closer relationship with industry. The reform would put industrial scientists into key CNR positions and streamline an organization which is widely regarded as being massively bureaucratic — so bureaucratic, in fact, that in 1980 it failed to spend an important part of its budget concerning the Italian space programme. For its pains, the result in 1981 was a budget cut of 10 per cent in current lira (much more in real terms) to the present figure of