

urgent task is to restore the confidence of the non-nuclear states in the willingness of potential suppliers to sell nuclear equipment and raw materials. President Carter's unilateral out-of-the-blue non-proliferation policy of 1967, and the tactless US Nuclear Non-Proliferation Act of 1968, has been the chief but not the only offender. The US Administration's difficulty in living with the Act it has sponsored in Congress (see *Nature*, 31 July) should be a sign to people elsewhere that there is no future in an agreement among suppliers to trade only with states that have accepted full IAEA safeguards. The government of France would not even consider such a proposal. The best hope for the CAS meeting is to devise incentives that will persuade states outside the NPT system that it would be in their best interests to join the club. An international convention to regulate the nuclear business on a multilateral basis, however desirable, is probably for similar reasons unattainable. Uranium banks under international auspices, or internationally managed reprocessing plants, offer more scope for imaginative negotiation. And is it too much to ask that the nuclear powers and the nuclear suppliers can use the two months ahead to repeat the message they were trumpeting a quarter of a century ago — that nuclear power is indeed a way of helping forward economic development in all kinds of states? One of the other circumstances that have changed in the past five years

is that non-nuclear states are now in a mood again to believe the message.

The question remains of what the nuclear powers will have to report at the review conference about progress towards strategic disarmament. Last month's report to the Committee on Disarmament shows that the Comprehensive Test-Ban negotiations have made substantial headway toward verification. If the treaty is signed, there will be arrangements for the exchange of seismic data, a committee of "experts" to assess them and procedures for dealing with challenges raised by one party or another. So much has been agreed. So why not sign the treaty right away? That is what some non-nuclear powers will be asking in Geneva in the next few weeks. In doing so, they will enormously underestimate the problems with which the three nuclear powers are grappling. States such as the Soviet Union and the United States are considering, apparently in good faith, binding themselves to forswear the further development of nuclear weapons, thus ensuring that, in the course of time, weapons now considered central to their security will be built less confidently than at present — and are doing this while there remains no assurance that China and France would follow suit. It is a huge political enterprise — and one that may not succeed. To have travelled so far along such an unpromising road is creditable.

Putting Finniston's cart before the horse

The British government's response to the Finniston report on engineering education is best described as frivolous. That may have been inevitable. The report was commissioned by a Labour government with an earnest conviction that governments have a duty to ensure that social institutions of all kinds are well suited to their purpose. Sir Monty Finniston and his colleagues on the committee of inquiry, set up in 1978, responded with gusto to the implicit invitation to reconstruct the whole pattern of engineering education. They were nothing if not radical. They set out to diminish the influence of the engineering institutions by proposing that there should be a new body, called the British Engineering Authority, to be responsible both for the certification of professional engineers and the validation of engineering courses, in universities and elsewhere in higher education. The committee also asked for changes in the educational system itself; engineering students would follow courses much like those now available, but with more work experience, but a minority would stay on for an extra year and come away with a higher qualification. The underlying objective of the Finniston Committee was to enhance the reputation of engineers in British society as a whole, whence (in part) the proposals that the state should pay larger stipends to engineering students than to others, that public authorities should not let contracts without insisting that only registered engineers are employed on them, and that properly registered engineers should be entitled by statute to regular periods of sabbatical leave (admittedly in the good cause of continuing education). Looking back over the past two years, and at the host of these fondly conceived but now stillborn proposals, the committee will no doubt rue its bad luck. It has fallen to a non-interventionist government, and to the most zealously non-interventionist minister of that government (Sir Keith Joseph) to respond.

An engineering authority of some kind will indeed come about, but not yet and not in the form the Finniston Committee asked for. Certainly it will not be the body "with teeth" that Sir Monty Finniston and his colleagues have been asking for since their report was published. Instead, the Privy Council (which can grant Royal Charters and thus legitimize the activities of non-governmental public bodies, universities for example) will be asked to set it up. The government will appoint the first slate of members, and help with petty cash for the first year or two. After that the authority will be expected to make its own way in the world, persuading universities that it is in their interests to have

their courses validated by the new organization, qualified engineers that they had better be registered under the new rules (still to be written) than with the existing engineering institutions and employers that the new certificate of registration is a worthwhile professional qualification. The prospect is daunting. There is a high chance that the new authority will be no more successful than the Council of Engineering Institutions, set up for similar purposes by the engineering institutions themselves (and which, apparently, will continue to exist, no doubt sniping from the wings from time to time). Many will say that it would have been better not to have had an engineering authority at all than to have so willingly courted the chance of failure. And that is the sense in which the government's decision is frivolous. For whatever the faults of the Finniston proposals, and there are several, the new arrangements are certain to be regarded — as was the Finniston Committee itself — as the best hope for the improvement of the engineering profession. Once the new authority exists, it will for a time at least tend to stifle other instruments of change.

This is a sad solution to have been wrought from the widespread recognition, in the past few years, that something should be done to change the pattern of engineering education and professional recognition. The explanation seems to be that first Finniston and now the government have put the cart before the horse. The most urgent need is for a more imaginative experiment in engineering education in the universities, and for level-headed evaluation of the consequences. Everybody accepts that intending engineers, like intending doctors, profit from first-hand knowledge of the problems with which they will have to deal in later life. There is, however, no assurance that the pattern of four-year courses now being tried out in English universities (and which Finniston endorsed) will be a substantial improvement on the present. To the extent that these courses will continue to skimp on basic science, the result may well be engineers whose education is more expensive but who are no better fitted for the needs of modern industry. For the truth is that a profession such as engineering should be a cadre of people with very different backgrounds and skills. The objective would have been better served if the government had encouraged the universities, through the existing machinery of the University Grants Committee, to develop courses that differ among each other but which collectively might yield the diversity the profession needs. The trouble is, of course, that such a development would require extra funds for the universities. This is hardly the time to be asking for more.