Congress supports technology centres

Washington

Plans are now being advanced to implement one of the key proposals made by the Carter Administration last year to help stimulate technological innovation — the setting up of a number of “generic technology” centres. The proposal has so far escaped budget cuts in Congress.

The purpose of each “generic technology” centre would be to carry out research and development in a particular area of technology underlying a range of industrial needs, rather than being related to any specific product. Typical examples given include welding, tribology, the study of new composite materials and the general area of automated manufacturing.

Officials at the Department of Commerce are now putting together detailed proposals from industry to establish three or four such centres. The hope is that, if Congress can be persuaded to allocate the \$5 million requested for the programme, initial work on the centres would be under way by the beginning of the next fiscal year on 1 October.

The idea behind the centres is that the government should provide seed money to stimulate research of a type which no individual company may be prepared to support, but which is likely to benefit groups of companies or whole industries. Each centre would be jointly funded by industry, initially with the government picking up most of the bill, but with government support dropping to 20 per cent or less after five years.

Each centre, according to details published by the department last month, will have responsibilities in three main areas: first, to maintain a substantial in-house research and development effort; second, to provide a range of technical services, including consultants, information, training facilities and technology evaluation; and, finally strategic planning of technology development.

The idea has already found many sympathetic ears in the US Congress. The Senate, for example, recently passed an innovation bill, originally proposed by Senator Adlai Stevenson, Jr, chairman of the Science and Space Subcommittee, aimed specifically at encouraging research links between industry and universities by setting up a number of “centres for industrial technology”. The Senate bill has already been accepted in principle by the Science and Technology Committee of the House of Representatives.

The private sector is also keen. Technology centres were one of the chief recommendations of the Research and Development Advisory Panel to last year's domestic policy review of innovation. The committee recommended that direct federal support of new technology generic to process or product innovation in wide spectra of industries “should be

strengthened and recognized as federal policy”. Its chairman, Dr Jack Goldman of the Xerox Corporation, remains enthusiastic about the Stevenson bill.

Some controversy remains, however. For example, should the universities be research contractors for groups of companies setting up a particular generic technology centre, as the Department of Commerce seems to be recommending? Or should universities be given a more prominent role from the start as the point of contact between government and industry?

The second strategy has been advocated by the National Science Foundation, which has set up a number of university-based co-operative research centres under a programme initiated in 1973. The most suc-

cessful of these has been the Polymer Research Center at the Massachusetts Institute of Technology, now self-financing from industry sources with an annual budget of \$600,000.

NSF's own plans for expanded efforts in this direction had to be trimmed by \$2 million when the Administration revised its budget request to Congress in April. But NSF officials are convinced that their approach, using universities as “surrogates” for federal contact with industry, has several advantages over what one refers to as the Commerce Department's “pie in the sky” efforts to forge ambitious links between government and industry virtually from scratch.

David Dickson

Carnesale for NRC chairman

Washington

Dr Albert Carnesale, professor of public policy at Harvard University and deputy director of the Center for Science and International Affairs there, was nominated last week by President Carter for the newly-upgraded chairmanship of the Nuclear Regulatory Commission (NRC). Dr Carnesale is a nuclear engineer by training, with experience of both arms limitation and non-proliferation negotiations. This, together with his reputation as a “moderate” on nuclear issues, has led both anti-nuclear and pro-nuclear groups to greet his appointment with a cautious welcome.

Carnesale's involvement in nuclear energy debates, for example as a participant in the Ford-Mitre study of 1976 and as head of the technical coordinating committee for the US delegation to the International Nuclear Fuel Cycle Evaluation (INFCE), nevertheless suggests that his views are closely aligned with the Administration's position on sensitive issues such as nuclear reprocessing and non-proliferation policy.

Dr Carnesale received a master's degree in engineering at the Drexel Institute in Philadelphia, and subsequently a PhD at North Carolina State University. After five years working as a nuclear engineer with the defence contractors Marietta Martin, he joined the Arms Control and Disarmament Agency, and was a senior adviser to the US delegation which negotiated the first Strategic Arms Limitation Treaty (Salt I) in 1972.

He returned to North Carolina State University as head of the division of environmental studies in 1972, subsequently moving to Harvard in 1974, where he now teaches a class at the Kennedy School on “Technology, War and Peace”, while remaining a government adviser on various defence and nuclear issues.

Dr Carnesale refuses to be drawn on specific ideas about the current problems

of the NRC, which has been under considerable strain following its handling of the Three Mile Island accident and its aftermath last year. But he said last week that he considers the safety of existing reactors to be “the first item of business for anyone”.

On the reprocessing of spent fuel, whose deferral by President Carter is now under renewed attack in Congress, Dr Carnesale points out his agreement with the conclusion of the Ford-Mitre study (subsequently accepted by INFCE) that at present there is no economic case for recycling fuel from thermal reactors.

He considers the INFCE exercise to have been a “success” in generating an international dialogue on nuclear fuel cycle issues, even though it failed to endorse many aspects of US policy. “It has to be judged in a far wider perspective than the reports themselves”, he says. But he refuses to be drawn on whether the United States, as some of the more ardent congressional supporters of its non-proliferation policy had argued, should have taken a bolder stance in registering areas in which it disagreed with the final consensus.

Waiting for approval . . .

This is one area where Dr Carnesale's views are likely to be closely examined by Congress when it considers his nomination. The NRC's refusal to grant an export licence for nuclear fuel to India has already prompted moves to circumscribe its responsibilities for reviewing exports as detailed by the Non-Proliferation Act signed in 1978. Legislators are soon to consider whether to veto President Carter's decision to overrule the NRC and grant the licences. But they will want to know how sympathetic Dr Carnesale is to the proposals of Mr Gerard Smith, head of the INFCE delegation, that some of the more stringent provisions of the NNPA be amended.

Dr Carnesale's appointment is said to have been actively canvassed within the White House by the Office of Science and Technology Policy, keen to defuse what has recently been called "the most politicized agency in town" — as well as to see strong leadership given to a body which, prior to the Three Mile Island accident, relied more heavily on collegial decision-making by its five commissioners.

David Dickson

Policy analysis

UK adventure?

Can pure reason throw light on the relationship between technical innovation and social change, assisting the first and softening the consequences of the second? This is the inspiration of the brave gamble launched last week in London by the Leverhulme Trust, the Science Research Council (SSRC). Between them, the three organizations plan to spend £2.55 million setting up an organization known as the Technical Change Centre. Sir Michael Swann, the retiring chairman of the BBC, will run the governing body of the new centre, but a director has yet to be found.

The centre is intended as an instrument of policy analysis; it will seek, in other words, to influence events. Its sphere of operations was last week defined more confidently by example than by precept — it may look into public perceptions of the

hazards of nuclear power, opportunities in but also the social consequences of microelectronics and the question whether academic training at the postgraduate level is good or bad for British industry. The sponsors' interest in the gamble is best explained by Sir Michael Swann's plaintive question why Britain, the leader in technological innovation for two centuries, should have failed so dismally since the Second World War.

The centre has venerable antecedents. Four years ago, the SSRC flirted with the notion of setting up in Britain an equivalent of the Washington-based Brookings Institution, but failed to find charitable partners for that venture. The new venture is in part a survivor of that plan, but with the difference that the SRC is an equal partner with the SSRC, that the Leverhulme Trust will contribute 60 per cent of the cost of the first five years and that the terms of reference, still broad, have been made more narrow.

Last week, the sponsors of the centre were frank in their estimate of their success. Much will depend on the director they can recruit; they also confess that they may be beaten by the intractability of the problems they tackle. They plan to make a cool appraisal of their venture (which may get under way by the beginning of 1981) in about four years. If things are going well, they would hope to give it at least a second lease of life.

Precisely how the centre's work will evolve plainly awaits the appointment of a director. For Sir Michael Swann emphasized last week that its policy will evolve independently of the interests of the sponsors. He explained, however, that the SSRC has a special interest in policy analysis of this kind more or less as an end in itself, while the SRC has a more specific interest in receiving advice on how its own budget should be disposed.

The core of the governing body has already been recruited, and includes the chairmen of the two sponsoring research councils (Sir Geoffrey Allen and Mr Michael Posner), Dr Duncan Davies (Chief Scientist at the Department of Industry), Sir Alastair Pilkington (soon to retire as chairman of Pilkington Brothers, the glassmakers) and Mr Philip Hughes (chairman of Logica Limited, a software house). It is intended that the board, when complete, should include representatives of trades unions.

Sir Michael Swann says that the absence of the Agricultural and Medical Research Councils from the list of sponsors has no significance, but plainly the new centre will be looking to them as well as to other organizations for funds with which to carry out sponsored research; the funds so far available amount to just over £500,000 a year, but the centre would hope to recruit a further £200,000 a year of soft money. While most of its work will be carried out in-house, it will also support work at other centres in the United Kingdom, thus no

doubt helping to ensure that it is not regarded too much as a threat by existing academic centres.

Teaching companies

Victims of success

The British Science Research Council and the Department of Industry are in difficulties about the financing of their joint teaching company scheme. Paradoxically, their problems have arisen because the scheme is proving more successful than originally foreseen.

When the teaching company scheme was set up five years ago, the aim was to secure the participation of about 20 companies by 1980. Interest has been such, however, that 33 companies are now involved and many more are hoping to join. The SRC and DoI agreed to fund the scheme on a fifty-fifty basis but the rapid expansion has meant that this year the DoI may not be able to pay its share. The total cost of the scheme has risen from £0.5 million in 1979 to an estimated £1.5 million this year, of which the DoI can contribute only £600,000.

The SRC is confident that it will be able to take up the slack in 1980; the real problems will arise in future years, especially if expansionary pressures persist. The SRC's contribution could probably increase to about £1 million a year, but other sources of finance would then have to be found. A panel of industrialists, civil servants and academics is to be set up at the end of this month, with a remit to make recommendations by the end of the year.

The objective of the teaching company scheme is to introduce industry to the skills universities have to offer and at the same time to provide recent graduates with industrial experience. Typically, a company agrees to take on three recent graduates, called associates, in each of the first two years of membership.

The SRC and DoI between them pay the associates' basic salaries, incidental expenses, cost of any special equipment they need and the cost of any replacement staff needed in universities. The company's major expense is usually that of implementing recommendations for improvements.

The pressures to expand the scheme come not only from companies wishing to join but also from those already in the scheme who say they have found it so useful that they are reluctant to leave. So far, only two companies have actually left the scheme. Because of the pressure on funds, the SRC is now beginning to talk to several companies about ways of terminating formal membership.

Both industry and universities seem to be enthusiastic about the scheme. Industry effectively gets a free consultancy service and is able to tap otherwise inaccessible resources. Universities have the opportunity to put some of their academic work into practice.

Judy Redfearn

Swann is the boss