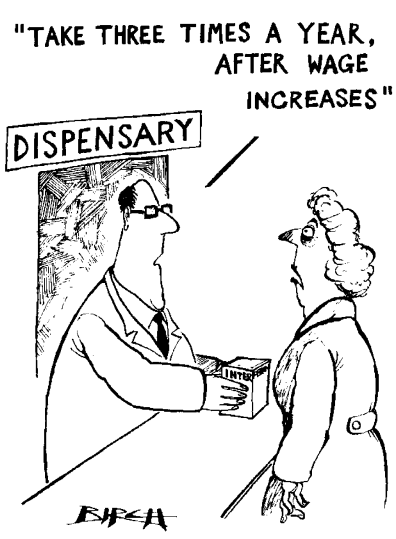
Nuclear Corporation (which would build the reactor) and the Central Electricity Generating Board (which would buy it) are now putting their heads together to see how the French do it — and whether the British price might be brought down. The generating board intends to announce its final estimate of the cost of the station, and the price of the electricity that it will produce, at the end of February.

Robert Walgate

Interferon used at last

The Medical Research Council's Common Cold Unit in Salisbury, England, has resumed its trials of interferon as a preventative of rhinovirus infection — one of the causes of the common cold.

Ten years ago, the centre proved the effectiveness of leukocyte interferon, prepared from human blood by Dr Kari Cantell in Finland, against rhinovirus — but abandoned further work because of the high cost of the material. Trials have been resumed in the belief that genetically engineered interferon will



eventually be so cheap that interferon might one day be used to prevent coughs and sniffles.

The resumed trials utilize interferon which is much purer than before. It is obtained either from white blood cells or from genetically engineered bacteria. Both forms are effective at high dosage and the next step at Salisbury will be to test how far the dosage of interferon can be reduced and how late in the course of infection it can be administered. Then it will be up to the manufacturers to reduce prices to the level of common palliatives such as aspirin — a tall order, no doubt, but one which may eventually be met. The aim is to do better than the Soviets who currently sell, for about $1 a time, interferon of such low dosage as to be useless.

Robert Walgate

US research spending

Problems in public

Washington

Efforts by the Reagan Administration to shift significant responsibility for research from the public to the private sector have produced a new crisis of identity in some national laboratories funded by the US Department of Energy.

Established in the early 1950s largely as a means of supporting the research needed for both the military and the civilian uses of nuclear energy, the laboratories expanded the scope of their activities considerably in the 1970s as they were given additional responsibilities.

Many of the areas of expansion, however, such as solar energy and conservation, are precisely those whose research budget is being most heavily cut by the Reagan Administration. Furthermore, some powerful Republicans are questioning whether it is appropriate for the government to be involved at all in areas which, they claim, should properly be left to the private sector.

Budget figures alone tell a significant part of the story. For the twelve "multi-programme" laboratories run by independent contractors for the Department of Energy, the total budget for the current fiscal year is $2,803 million, $60 million less than for 1981.

Given an expected inflation rate of about 10 per cent, the result will be a significant reduction in overall effort. The reductions, however, will not be shared equally, with the two major weapons laboratories, Los Alamos National Laboratory and the Lawrence Livermore National Laboratory, receiving budget increases of 11 per cent and 16 per cent respectively.

Laboratories hit harder by cuts include Argonne National Laboratory near Chicago, with a budget reduction of more than 25 per cent, while a reduction of similar magnitude has been absorbed at Oak Ridge National Laboratory, Tennessee. In both instances, the major decreases are in programmes of research into fossil energy, conservation technologies and "other energy supplies".

A decision last year by the Department of Energy, in light of its expected budget cuts, to decrease the energy-related programmes by 10 per cent from 1980 levels, has already markedly affected staffing. Some laboratories have been able to absorb most of the technical and scientific staff who have been displaced in weapons-related projects; at Oak Ridge, for example, many have moved to nuclear-warhead production. Others have not been so lucky. Brookhaven National Laboratory in Long Island has already had to lay off 270 out of its total of 3,600 staff. At Argonne, the reduction so far has been 600 out of about 4,400.

The prospects for next year do not look much better. Although precise budget proposals will not be known until they are presented to Congress by President Reagan on 8 February, it is widely expected that the Administration will suggest similar reductions for 1983; after that, the laboratories can expect level funding at best for the next three to five years.

A significant change in policy direction was already indicated in a memorandum last May to laboratory directors from Acting Under-Secretary of Energy, Dr Raymond Romatowski. Under this regime, Dr Romatowski said that in principle the multi-programme laboratories should be restricted to two main functions. The first was to conduct basic and applied research comprising important "technology-base" activities that the private sector is ill-equipped or not motivated to pursue; the second was to undertake development work in promising areas "beyond the private sector's capability and interest".

Several review committees are now looking at how to put these two principles into practice. The main review, being carried out by the Office of Science and Technology Policy, will take some time to complete. In the shorter term, a panel of the Department of Energy's Energy Research Advisory Board has been asked by the Deputy Energy Secretary, Mr W. Kenneth Davis, to carry out its own review of the multi-programme laboratories, and a final report is due by September.

Meeting in Washington last week, the members of the advisory board panel agreed to offer various strategies as possible options for action in their interim report, due at the beginning of March.

In the course of preparing its full report, the panel will be looking at the experience of other countries in running government laboratories to see if they may provide a model for new institutional arrangements in the United States.

Whatever proposals are finally accepted by the Administration, attempts significantly to change the current status of the laboratories is guaranteed to meet an uphill struggle in Congress, where many have powerful political supporters.

David Dickson

EEC research and development

Time for success

Brussels

Vicomte Etienne Davignon, European Commissioner for Research and Development in Brussels, set alight a rather quiet meeting on the evaluation of Community research and development on Monday with a sharp attack on previous Community policies. There is a "great deal of scepticism" about Brussels-sponsored research and development, he said, and it was time for some successes.

Davignon singled out the seven-year gestation of the bioengineering programme, recently agreed at the Council of Ministers, as an example. "We came out

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with a mouse," he said. If anyone believed the Commission should go through that kind of agony again, he was mistaken, said the Commissioner. The Commission should scuttle programmes far sooner when member states do not agree.

Not that Davignon is against Community support for biotechnology — far from it. Rather, he appears to detest the national bickering which delayed the programme so long. His policy now is to set up a "framework for research", a broad structure of ministerial agreement on Brussels research and development policy. The framework would stretch over, say, five years, leaving the Commission room to develop detailed programmes within the guidelines and giving nation states the chance to see a fair return on Community investment in a much wider context.

This framework is to be thrashed out in the next two meetings of the Council of Ministers for research, one in March and the next in June. If nothing happens in 1982, the momentum will be lost, says Davignon. But the transition from the present structure to the new one will be gradual. Some heads have already rolled at the Directorate-General for Research, but Davignon's cabinet insists that the night of the long knives will not last long. The objective is to use existing staff in new ways, Davignon claims — although some Commission staff remain nervous.

And to what end? To revitalize European industry. Davignon, whose commission also covers energy and industry affairs, says Brussels research and development has a way of redirecting European economic development, to fill gaps — such as in telematics and computers — in relation to the Japanese and United States competition. To achieve this, Davignon is prepared to be surprisingly flexible, and sees a role for the Commission even in helping to set up bilateral research and development projects among member states, and in giving international promotion to national centres of excellence. Davignon hopes member states will agree to his ambitious programme because of the economic risks involved in not doing so.

Robert Walgate

Fusion decision awaited

Brussels

The next EEC research council on 8 March is now likely to approve the next five-year programme on controlled thermonuclear fusion. The fear that there might be a gap in the sliding programmes, between the last budgetary allocation and this, was further reduced with the release last week of a favourable opinion from the Consultative Committee for the Fusion Programme, which considers the planned financial envelope — 1,500 million European Currency Units (£750 million) has been allowed.

Continued membership by Sweden, one of the two non-EEC countries participating, is, however, in jeopardy. The committee observes that Sweden finds the cost excessive. One difficulty is that neither Sweden nor Switzerland participates in the EEC's annual budgetary procedure, when the amount of money devoted to a programme can be adjusted. National contributions are assessed on the basis of a percentage of gross national product, and for Sweden more money for the EEC programme means less for national research.

The Commission's thermonuclear research strategy, which is to concentrate effort on the tokamak line while retaining an interest in magnetic confinement, reverse field pinch and stellerators, wins the approval of the committee, which nevertheless recommends a periodic assessment of the relevance of these side-lines to reactor development.

The committee is, however, more cautious in its views on the step to be taken after JET, the Joint European Torus now nearing completion at Culham in Britain. It recommends that plans for the next large thermonuclear machine, called NET (for Next European Torus), should be reviewed again before a decision is made in 1984. Likewise the committee is noncommittal on the need for the proposed tritium laboratory.

Jasper Becker

US university funding

Tax act fails

Washington

Universities in the United States are complaining that so far they have benefited little from the Reagan Administration's attempts to augment spending on research by tax cuts rather than direct support.

On the one hand, the tax cuts were structured in such a way that it has been equally, if not more, tempting to a company to increase its internal research efforts rather than contract work to outside groups. On the other, there is a feeling that the new incentives will have little effect on some of the largest companies which already have relatively low tax liabilities.

Two parts of the Economic Tax Recovery Act signed by President Reagan last summer were supposed to help universities, one a tax credit designed to increase industry support for basic research at universities, the other a new deduction for industries contributing research equipment to universities.

"Neither appears to hold significant promise," Dr John C. Crowley of the Association of American Universities (AAU), which follows legislative affairs for the major US research universities, told a recent meeting of the American Association for the Advancement of Science.

Dr Crowley quoted a letter from Mr B.J. McKelvain, an analyst with General Electric Company, which has been among the most aggressive companies seeking tax incentives to boost spending on research and development. Mr McKelvain presents the company's estimate that the research tax credit will result in an increase of less than two per cent in industry-funded research.

The difference in the incentive for increased support of university research compared with in-house work is probably "negligible", Mr McKelvain had written. And although he says that the incentive for equipment donations should result in some increased giving, "we would not expect the response to have a significant impact on the critical shortage of state-of-the-art equipment available for university research".

The principal reason for this pessimistic assessment is based on the narrow scope of the tax provisions. For example, any equipment donated by a company must have been manufactured by that company and cannot contain purchased parts accounting for more than 50 per cent of the tax costs.

"Despite these limitations, the equipment donation provision is a start in the right direction. If broadened somewhat, it could have a considerable impact on the problem", said Dr Crowley, one of the co-authors of a report prepared by AAU for the National Science Foundation two years ago. This formed the basis for the Carter Administration's proposal to provide an additional $7 million in the foundation's budget for university research equipment, but was one of the first items to be cut by the Reagan Administration when it came to power last January.

As for the broader impact of the new tax laws, Dr Crowley concludes that the 1981 Tax Act offers "only token incentives for research support and donations of research equipment by industry".

This view is confirmed by officials from several major universities. Mr Stuart H. Cowen, for example, vice-president for financial arrangements at the Massachusetts Institute of Technology, said that, so far, the institute had "not seen much effect of the new tax law", although speculating that companies may be holding back until the Treasury Department publishes detailed guidelines on how the law will be interpreted.

Although disappointed, few university officials are surprised at the apparent failure of the bill. Whereas they had pushed hard for inclusion in the tax legislation of a clause allowing companies to write off all contributions to university basic research against tax, the Treasury Department was not convinced that the value of this move would outweigh the costs in terms of lost revenue; the bill as finally passed by Congress merely allows for tax relief on the amount that support for such research is increased by a company.

Several congressmen are hoping to

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