

real health risks".

Both supporters and critics of the Administration agree that the concept of "real health risks" will now become the central focus of debate over new regulations — and that the decision may reflect recent rulings by the US Supreme Court which, while denying that cost-benefit calculations need be used in setting standards, have also emphasized the legal importance of scientific or epidemiological evidence of existing levels of risks.

Several of the principals announced by Mrs Gorsuch have pleased industry. For example, emission restrictions for nitrous oxides on new cars will be eased. Under present legislation, all cars produced from this year onwards are allowed to produce only one gramme of nitrous oxide for every mile travelled. The Environmental Protection Agency intends to raise this limit to two grammes, the level at which it stood between 1977 and 1980 and a move which it is claimed could save \$100 on the price of a family car.

There will also be a relaxation in a particularly controversial section of the present legislation aimed at preventing the "significant deterioration" of air quality, even in areas where present levels of pollution are relatively low. This provision stems from a legal interpretation of the 1970 Act following court cases brought up by several large environmental groups; it has been bitterly contested by industry on the grounds that it restricts the growth of new industries outside existing urban areas.

Mrs Gorsuch said last week that the present programme for the prevention of significant air quality deterioration "should be maintained for the protection of park and wilderness areas". She said that protection in other areas should be based on uniform technology requirements for pollution control.

The Environmental Protection Agency has also committed itself to asking for more funds from Congress for acid rain research. This has recently become a major source of conflict between the United States and Canada, which has accused Washington of failing to comply with an agreement signed last August to reduce air pollution from automobiles and large coal-burning facilities. The Administration, with the utilities industry, is now arguing that considerably more research is required before the need for clear action is demonstrated, a position which is unlikely to be warmly greeted in Ottawa.

Critics of the Administration's earlier proposals, contained in draft legislation leaked to the press by congressional Democrats in May, have been given other concessions. Senator Robert T. Stafford of Vermont, for example, insisted that no change should be made to the principle that the young, the elderly and other high-risk groups should be given an extra margin of protection from the effects of polluted air. Furthermore, pollution standards will continue to be set at the federal level and

not, as industrial groups hoping for a more sympathetic hearing had asked, by individual states.

The Reagan Administration's decision to limit its proposed changes seems largely based on a realization that, unlike the cuts in public spending and taxation, there is no national consensus on the need for a major retreat on environmental protection. White House officials are said to have been concerned about the impact of recent aggressive anti-environmentalist statements by Interior Secretary James Watt, and have asked him to adopt a more conciliatory attitude.

But if the battle over the Clean Air Act extension is not going to be as fierce as once promised, it will still be heated. The National Clean Air Coalition claim that even the Administration's more limited proposals are a "blueprint for destruction" of the present laws. Mrs Gorsuch says that, even with the suggested changes, the quality of the nation's air will improve, but "at a more reasoned pace". Congressional hearings will begin next month.

David Dickson

Science jobs famine

Bangalore

Nearly three million scientists in India are unemployed and an equal number are working in posts requiring much lower qualifications, for lower pay than a government clerk receives. These were among the worrying facts which came to light at a recent meeting of the Science Advisory Committee of the Union Cabinet, headed by Planning Commission member and agricultural scientist Dr M. S. Swaminathan, and held to discuss ways of making the best use of the country's science and technology personnel, particularly those unemployed.

For instance, more than 50 per cent of scientists and engineers employed at the prestigious Bhabha Atomic Research Centre draw a monthly salary of less than \$75. And nearly 25 per cent of the personnel working in government-sponsored research and development institutions have a monthly pay packet of less than \$120. However, people working in science and technology in the private sector are better off, seven per cent of them earning \$200 a month.

According to a note circulated to members of the committee, unless the annual rate of industrial growth rises to four per cent there is little prospect of speeding up the absorption of unemployed science and technology personnel into jobs.

The note further recommends regulation of intake of such personnel for training, more informal education, facilities for improving qualifications while on the job and greater interaction between industrial and academic scientists.

B. Radhakrishna Rao

Industrial noise

Let them hear

Britain's Health and Safety Commission is tackling the difficult business of regulating noise at work. Last week it published draft regulations in a consultative document intended to pave the way for legislation which will place a statutory obligation on employers to protect workers from noise. A voluntary code of practice, drawn up in 1972, is being widely ignored, according to the commission.

Devising effective legislation is, however, proving controversial — noise regulations are notoriously difficult to enforce and statutory levels of noise are fiercely disputed. The consultative document proposes limits of no more than 90 decibels(A) — a weighted decibel unit discounting inaudible frequencies — averaged over an eight-hour day and no more than 600 pascals of peak sound pressure. But the trades unions, in particular, argue that as hearing damage can occur at lower levels, the daily average limit should be set initially at 85 dB(A) and later lowered to 80 dB(A).

The number of British workers exposed to high noise levels is considerable. The commission estimates that 50 per cent of production workers (about 2.5 million people) are exposed to more than 80 dB(A) and 10 per cent (500,000 people) to more than 90 dB(A). Nobody seems to have disputed the effect of noise on hearing since the late 1960s. Using the work of Burns and Robinson, the commission estimates that roughly 32 per cent of people exposed to 100 dB(A) over a working lifetime will suffer a 50 dB hearing loss by the age of 65.

The commission has settled for the 90 dB(A) limit on the basis that the hearing of 21 per cent of workers previously exposed to more than 100 dB(A) will be protected. Reducing the limit to 80 dB(A) would save the hearing of only a further 8 per cent. Clearly acknowledging the problems of reducing noise, it argues that a 90 dB(A) limit will give greater benefit for cost.

Under the commission's proposals, however, employers would not be freed from obligations even at lower noise levels. The draft regulations require that they reduce any noise likely to damage hearing to the "lowest level reasonably practicable", which they would have to work out for themselves. Employers fear that this general but unspecific obligation may expose them to civil suits from all those who suffer from hearing loss.

The draft regulations require that at noise levels above 90 dB(A) employers must survey noise, train staff, keep exposure records and appoint a qualified noise adviser. Workers exposed to 105 dB(A) would have to receive regular hearing checks. The proposed regulations also oblige employees to make full use of noise control measures and manufacturers to reduce noise levels of industrial

machinery to below 84 dB(A) if possible. The commission has no estimate of the cost of its proposal.

On this occasion, Britain's Health and Safety Commission seems to be a step ahead of the European Commission, whose directive is still some way off. But the signs are that Europe will go for a limit of 85 dB(A). **Judy Redfearn**

Bulgarian astrophysics

Cosmic celebrations

The "Interkosmos-Bulgaria-1300" satellite, Bulgaria's cosmic celebration of 1,300 years of statehood, was launched last Friday (7 August) to the surprise of the Bulgarian public, who had expected it would form the climax of the celebrations in October.

The designation of the satellite was equally unexpected — although the original plan was for a single celebratory satellite, analogous to the Polish Interkosmos-Kopernik-500 in 1972, it was announced earlier this year that there would be two satellites, one containing Bulgarian experiments only and the other a mixed Soviet and Bulgarian payload. However, only in the Moscow radio coverage of last Friday's launch was it made clear that the mixed payload was already in orbit — aboard the Priroda-Meteor satellite launched on 10 July.

In the Bulgarian celebrations, the timing has proved unfortunate, since the head of the jubilee committee, Lyudmila Zhivkova (the daughter of First Secretary Todor Zhivkov) died suddenly on 20 July.

Scientifically, however, the satellite is operating well, and has done much to offset Bulgarian disappointment that the Interkosmos manned programme did not allow them a second chance of a cosmonaut aboard a Salyut craft. By way of consolation, Georgi Ivanov, whose Soyuz transporter failed to achieve a link-up with Salyut, was invited to attend the launch and spoke warmly of Soviet-Bulgarian cooperation.

Although the experiments on the satellite (a modified "Meteor" meteorological probe) are said to have been produced "with the assistance of Soviet scientists", the twelve experiments comprising the 350-kg payload are of Bulgarian design, and concentrate on those branches of space physics of particular interest to the Bulgarian space team, including plasma, high energy charged particle studies, atmospheric luminescence and magnetosphere studies. According to Dr Kiril Serafimov, chairman of the Bulgarian Space Research Council, a special study will be made of ionosphere troughs and equatorial anomalies in the magnetosphere, which it is hoped will provide valuable data for such applied fields as radio-wave propagation, the mechanism of rare meteorological anomalies and the radiation balance of the Earth. **Vera Rich**

Carcinogenicity testing

Well, yes and no

Washington

Semantic juggling has allowed US health officials to escape the embarrassment of discovering two reports on the widely-used chemical dimethyl terephthalate (DMT) which are virtually identical but contain directly conflicting conclusions about its carcinogenicity.

Re-examination of the test data has raised a dilemma for scientists with the Department of Health and Human Services' National Toxicology Program (NTP) that is frequently faced by regulatory agencies: how to present policy-makers with the results of ambiguous animal tests.

The solution proposed by NTP's peer review committee is to describe data on increased cancer rates in male mice as being "statistically significant" but "biologically equivocal".

DMT is widely used to provide flexibility in plastic products from food wrapping to bottles. The source of the confusion is a technical report on its potential carcinogenicity prepared in the 1970s for the now-defunct Clearinghouse on Environmental Carcinogens of the National Cancer Institute (NCI).

The tests were carried out by a private contractor, Hazleton Laboratories. They revealed no evidence of increased cancer rates among male and female rats, or among female mice exposed to low or high doses of DMT. However, a 27 per cent incidence of lung tumours was found among male mice receiving the high doses, considerably higher than the 4 per cent incidence in a group of matched controls. On the basis of these data, which were approved by an NCI peer review group, a report was published describing DMT as a carcinogen in male mice.

Soon afterwards, however, the report was challenged by scientists working with Hercules Incorporated, a major manufacturer of DMT. They claimed that the relatively low incidence of lung tumours among the matched controls was out of line with results from other control groups. NCI scientists reassessed the Hazleton data, this time using for comparison not the matched control group, but pooled results from three other control groups associated with different experiments which had spent overlapping periods of time in the same room. The latter groups revealed a lung tumour incidence of between 10 and 18 per cent over a two-year period, much closer to the 27 per cent of the exposed group.

A revised version of the technical report was subsequently issued through the National Technical Information Service (this time without peer review) which stated in the summary that the new data indicated that DMT was not a carcinogen.

Several research libraries, however, still

have copies of the first version on their shelves. And the apparent discrepancy between the two reports was brought to the attention of NTP, which has taken on the responsibilities of the NCI clearinghouse, three months ago.

Re-examination of the data revealed that the tests appeared to have been properly conducted, even though the incidence of tumours in the matched controls seemed inordinately low. "We view the incidences of total lung tumours in the matched male controls with some suspicion" reported Dr John Moore, deputy director of NTP.

A report on the NTP staff review was brought before the peer review panel of the programme's board of scientific counsellors last month. Discussion soon focused on whether, in revising the original report, the NCI staff had been correct in ignoring the matched control data and

One more journal

A new scientific journal is to be launched at the beginning of 1982 by the European Molecular Biology Organisation (EMBO). One of the objectives of *The EMBO Journal* is to redress the balance between Europe and the United States where, it is argued, the predominant and preeminent position won by American journals in the publication of molecular biology has put European molecular biologists at a disadvantage.

The new journal, which has been in the air for the past three years, was finally agreed after a ballot of the 500 members of the organization held in January. The journal will resemble *Proceedings of the National Academy of Sciences of the United States of America* in that it will publish papers communicated by any of its members, each of whom will be rationed to a maximum of five papers a year by non-members of the organization.

A statement by the publishers of the new journal, IRL Press Limited of Oxford, England, says that EMBO members will be expected to take responsibility for the "scientific standard" of the papers they communicate. One of the obvious difficulties will stem from the heterogeneity of the membership, which is elected, and the differing interpretation of what molecular biology consists of in various European countries.

The editor of *The EMBO Journal* will be Dr John Tooze, executive secretary of EMBO and also, at present, the editor of *Trends in Biochemical Sciences*. One feature of the new journal is said to be speed of publication — the publishers have undertaken to print manuscripts accepted by the editor within twelve weeks of their receipt. A pilot issue of the journal is to be made available in September.