

radiation. Its interest is being concentrated on lasers and microwaves in the first instance, say the board, not because these pose any widespread health hazard but because their use has increased enormously in the past few years and some national authoritative reference is now desirable.

Already, there is a generally agreed safety limit for continuous microwave exposure of not more than 10 mW cm⁻² average power density. This is rigorously observed by present users of radar, one of the main commercial applications of microwaves in Britain.

But there is another growing commercial use of microwaves, in quick microwave ovens which are not yet big business in Britain but whose use will probably increase. The board is setting up an advisory and research service at its Leeds centre, where ovens can be tested for radiation leakage. The second part of the NRPB's extended brief is the use of lasers. □

Taxing your sabbatical

UNTIL the end of the tax year on April 5, 1974, visitors to Britain on sabbatical leave were taxed by the British authorities on a so-called 'remittance basis'. The sum of money actually brought into the country was the base for taxation and in the six years before a sabbatical became due, many academics had learnt how to prevent most, if not all of their income of the seventh year (assuming it came from their permanent institution) from entering Britain. Legislation that has just been passed radically alters the tax position.

It is assumed in what follows that the work done in Britain is not entirely unconnected with normal duties of employment in the home country—an assumption which the tax officer is almost certain to make if the permanent institution is paying.

In the case of visitors from the United States, half of their pay will be liable to tax in Britain for any tax year in which they are in the country for 183 days or more; these days need not necessarily be consecutive. Any tax year in which visits do not add up to 183 days is not considered. A double taxation convention applies with the United States and so credit for British tax paid can be claimed against the United States tax on the same income. If a visitor becomes liable for tax through being in Britain for six months or more, he is entitled to claim full personal allowances.

Similar arrangements are in force with many other countries but tax authorities point out that it should not be assumed that arrangements are

identical and detailed information should be sought from embassies.

This change in the tax situation has been widely asserted to drive potential visitors away from Britain. In fact the most likely to suffer from it are those who have been able to find a way to avoid remitting income to this country, say by borrowing for their visit. Anyone who has had, of economic necessity, to bring his income with him, has previously had to pay tax on the full amount remitted in tax years in which he has been here for six months or more. Now he pays tax on only half that amount. □

Business: CEBG awash with capacity

by Roger Woodham

WHATEVER the Central Electricity Generating Board's financial position may be—it made a loss of £87.4 million in 1972–73—the board evidently stands no risk of running short of generating capacity as it did in the winter of 1969–70. At that time the CEBG's maximum output capacity was some 46,000 MW and the maximum demand to be met was about 38,000 MW, but for a string of reasons that were investigated by the Select Committee on Science and Technology insufficient capacity was actually available when it came to the crunch and the result was a series of voltage reductions—'brown outs'.

The situation as of March 1974 was much different in that the maximum output capacity had soared to 58,000 MW whereas the maximum demand that winter had been about 40,000 MW. The latter figure had not changed appreciably for three years (*CEBG Statistical Yearbook 1973–74*).

The inescapable conclusion is that the CEBG has an unrealistic amount of surplus capacity which it busily added to in 1973–74 at a cost of £189 million, representing 1,600 MW. And the plant now under construction which should be available by the end of 1978 will provide a further 12,000 MW, bringing the total to perhaps 67,000 MW if allowance is made for the demise of old plant. If the growth of electricity demand were about 3% a year in the next few years, the maximum call on the CEBG's services would only rise to some 45,000 MW by 1978. At that stage the board would be capable of meeting a peak demand of half as much again. Naturally some of that 'overkill' must be regarded as a provision for plant temporarily out of service, but the margin is different altogether from the 21% which proved to be insufficient—just—in exceptional circumstances in 1969–70. In 1966–67 the CEBG was getting by without bother on a margin of about 12%. □

Qualified approval for Aspartame

by Colin Norman, Washington

THE United States Food and Drug Administration (FDA) last week gave its approval for a new artificial sweetener to be used in a variety of products. Called Aspartame, it is 180 times sweeter than sugar and its official debut is significant since it comes right in the middle of an investigation of the safety of saccharin—the only other artificial sweetener on the market in the United States—which is suspected of causing bladder tumours in mice.

Aspartame loses its sweetness on prolonged cooking, however, and thus it has only been approved for such uses as sweetening tea and coffee, adding to breakfast cereals and for sweetening puddings, gelatins and artificial cream. So far, it has not been approved for use in so-called diet drinks, and it will therefore not challenge saccharin in its largest market. But FDA officials suggest privately that soft drink manufacturers will soon petition the government to allow them to use Aspartame.

So far, few people have expressed doubts about the safety of Aspartame, chiefly because it is broken down in the body into two essential amino acids, L-aspartic acid and L-phenylalanine. Furthermore, FDA's approval was based on the results of feeding studies which involved dogs and rats for two years and a number of rats which were exposed to Aspartame *in utero* and throughout their lifetimes. The studies gave no indication of tumorigenicity, and suggested that at least 2 grams per kilogram of body weight are required before any toxic effects are evident. That level is more than 100 times greater than the likely average daily intake of the sweetener in foods for which it has so far been approved.

The FDA's decision will be closely studied in several other countries—including Britain—where applications have been made by G. D. Searle and Co., the manufacturer of Aspartame, for permission to market the sweetener. Its importance in the United States is that it gives the FDA more flexibility in dealing with two particularly sticky problems. First, the FDA has been forced to re-evaluate its decision to ban cyclamates from the market on the basis of suspected carcinogenicity (a decision is expected early next year) and, second, saccharin is now under investigation and the FDA will probably have to decide its fate within the next couple of months. Before Aspartame came along, the FDA was facing the problem of perhaps removing from the market all artificial sweeteners, but now at least it has a third product to insert into the cost-benefit equation. □