

seemed to be no more effective than diet alone, and there was a statistically significant excess of cardiovascular mortality in the patients treated with tolbutamide compared with those in the other groups. The FDA does not regard these conclusions as final, however, because the trials tested the effect of a fixed amount of tolbutamide on only limited types of diabetic patient.

The details of the report have not yet been made public. Unfortunately, however, the report was disclosed to the press and the finding that mortality is fifty per cent higher after eight years of treatment with tolbutamide received the full glare of publicity. The FDA then promptly issued a press release which said that oral anti-diabetic drugs should be prescribed only for those patients who cannot be controlled by diet alone; the dose should be adjusted to the needs of the individual patient; and patients taking the drug should continue to do so unless advised otherwise by their doctor. This information was simultaneously telegraphed to doctors. The FDA is now writing in further detail to doctors, and the labelling of the drug will be changed.

What action does the FDA propose to take to prevent future such reports from seeing the light of day before doctors have been informed? Although there is concern that patients should have first heard of the hazards of tolbutamide through the press, and the problem of how to first inform doctors is being studied, no answers have been found yet. Dr C. C. Edwards, Commissioner of the FDA, said recently that "unfortunately, there is as yet no practical way of informing the physician in each case before the information reaches the patient via the lay press".

POWER

Rads or Brownouts

THERE is a critical shortage of electric power in the US, warned Dr L. A. DuBridge, the President's science adviser, in a recent address to the American Nuclear Society in Los Angeles. He said that there is "the possibility of a major failure which could produce enforced blackouts of disastrous proportions". Recent years have seen both extensive brownouts—when consumers are asked to use less electricity (people were asked to turn off their air conditioners on the hottest day of the summer last year in Washington DC) and the voltage may be reduced—and blackouts, the most spectacular of which plunged most of the north-east of the USA into darkness in 1965.

The nation's insatiable appetite for electric power, both at the consumer and at the industrial level, demands continual increases in the provision of electric

power. Table 1 shows that increases in electric power capacity are expected to run well ahead of increases in population during this century.

With increasing concern about the rapid depletion of fossil fuel resources, nuclear power has been proposed as the best answer (albeit impermanent in that nuclear resources are themselves finite). As Table 1 shows, nuclear power is expected to provide an increasing proportion of electric power.

But hassles about the effect of nuclear reactors on the environment are holding up the nuclear power plant building programme. Although nuclear reactors have certain obvious advantages over fossil fuel plants—they are free from discharges of noxious sulphur dioxide and nitrous oxide fumes and smoke—they suffer from compensating disadvantages. Because nuclear power plants are less thermally efficient than the best of the coal or oil fired plants, they discharge up to about one third more waste heat into the environment. This disadvantage may be overcome by developing new types of reactor which will operate with greater thermal efficiencies, but in the meantime there is some concern that the thermal impact of nuclear power plants may cause climatic changes.

A much more vaunted hazard of nuclear power is the risk of increasing the level of radioactivity in the environment. Although critics of the nuclear power programme have recently received publicity for their charges that the extra exposures to irradiation which could be permitted by the regulations imposed by the Atomic Energy Commission could result in a 10 per cent increase in the number of cases of cancer or leukaemia in the US, the AEC maintains that such estimates are grossly exaggerated. Dr T. J. Thompson, Commissioner of the AEC, recently stated that "the hazard from reactors to the population as a whole is at an extremely low level and is being badly distorted in the present overcharged climate of emotions". More specifically, he remarked that the increased exposure to radiation near the edge of a nuclear reactor site is equivalent to that gained by living on top of a 400 foot hill instead of at the bottom. This must be a very small amount compared with the natural background of radiation. Indeed, Dr Thompson said, there is probably statistically less than one extra case of cancer or leukaemia as a result of nuclear reactors. By comparison, the environmental pollution from coal fumes and smog causes very much more damage.

Notwithstanding such reassurance, "conservationist" opposition to the construction of nuclear power plants is slowing the building programme. This is not, however, the cause of the present brownouts and blackouts, which result from underestimates of power requirements which were made some five years or more ago, when many of the present power plants were designed and built. The present concern over environmental pollution is likely to result in insufficient provision of power facilities in 1975 and after. The AEC's concern over the slowing of the nuclear power plant building programme is reflected in continual tightening of the conditions for design and operation of nuclear reactors. One notable attempt to reassure public opinion about the safety of nuclear reactors is newspaper advertisements which point out that President Nixon's Western White House at San Clemente, California, is within striking distance of a nuclear reactor. If it is safe for the President, imply the advertisements, it is safe for everyone else.

Table 1. ELECTRIC POWER CAPACITY OF THE US

Year	1950	1969	1980 est.	2000 est.
Population	152	204	235	320 million
Total power capacity	85	313	668	1,352 million kW
Nuclear power capacity	0	4.3	150	941 million kW
Nuclear proportion	0	1	22	69 per cent