

UK nuclear power

Bye British

At last the British nuclear power show is on the road. Advanced gas cooling is an also-ran in the UK Central Electricity Generating Board (CEGB)'s "statement of case" for the construction of a pressurized water reactor at Sizewell in Suffolk, published with due ceremony yesterday (Wednesday).

The price of the British 1,110 megawatt-electric power station is now estimated to be £1,147 million, excluding the initial charge of fuel, compared with £1,590 million for an AGR. The ratio is thus 72 per cent, substantially but not embarrassingly more than the 60 per cent Dr Walter Marshall, chairman of the PWR task force, was hoping for.

The task force was set up to control the

cost of safety systems on the British PWR, which a year ago were escalating because of CEGB requirements to keep radiation exposure levels for PWR workers down to those expected of the cleaner gas-cooled reactor. Then there were fears that a British PWR might cost as much as an AGR. In the event, CEGB has maintained its safety requirements, adding elements — such as a larger containment building and a double skin — to the task force design; but the task force effort has shown up in the final price.

An equivalent coal-fired station would cost about the same as the PWR (£1,080 million), says CEGB, but fuel costs would be so much higher with coal that a PWR would give a net saving of some £500–£1,100 million over its 35-year life.

But these few lines give no indication of the scale and density of CEGB's argument which in the statement of case, the accompanying pre-construction safety report, the reference design and the supporting documents amounts to 2½ hundredweight (125 kg) of reading matter.

PWR objectors will now have eight months to study the case, before the public planning inquiry which is to be held at the Maltings, Snape, in Suffolk, in January 1983 — and they will need all of that time. Moreover, CEGB promises a supplement in two months' time which will give a sensitivity analysis (or estimate errors) on the economic elements of the report, and in late June or early July the Nuclear Installations Inspectorate is due to publish its reaction to CEGB's design. The opposition could thus find itself flattened by mere weight of words.

The report, and preparation for the inquiry (including fees to counsel), will cost CEGB some £5–10 million, it is estimated. Some copies will be made available to *bona fide* enquirers, 15 will be placed on public display and others will be sold at £250 a time.

The next crucial task for CEGB is to define the board's procurement policy — where it will buy the components and design work for the reactor. The board estimates that 90 per cent of the PWR cost will pay for work done in Britain — but since the nuclear component (the nuclear steam supply system) amounts to only 10 per cent, CEGB is clearly not ruling out the possibility that the whole of the system might be bought abroad.

The reactor pressure vessel will certainly be bought abroad. Tenders are now out with Combustion Engineering of the United States and Framatome of France. For the rest of the system (such as the steam generators), discussions are beginning with potential British suppliers. Brian George, CEGB's PWR director, said it would be "too strong" to say that the board saw no reason why it should not buy British. In other words, there are good reasons — of price and confidence — why the board should buy foreign, and it will be up to British nuclear industry to convince CEGB otherwise.

Robert Walgate

Alternative energy

Winding up

Waalre, The Netherlands

The Dutch are again turning to wind as a source of energy. At the end of the last century, more than 9,000 windmills were pumping water or grinding flour in the Netherlands, and if the present emphasis on wind energy continues, by the year 2000 there will be more than 2,000 megawatts of electricity produced from wind power. This is equivalent to about 13 per cent of the country's present requirement for electricity, which is not expected to increase much in the next few decades.



"Looks like the wind's dropped again"

Approximately two-thirds of the wind-derived electricity at the end of this century is expected to come from purpose-built wind-energy parks, with the rest from up to 15,000 smaller individual turbines. There are already 50 small turbines in use, manufactured by 7 Dutch and 14 foreign companies. Until now the growth of the use of wind energy has depended on the enthusiasm of local authorities, but the end of the national five-year research programme and the move into a development programme should see a further boost to wind energy.

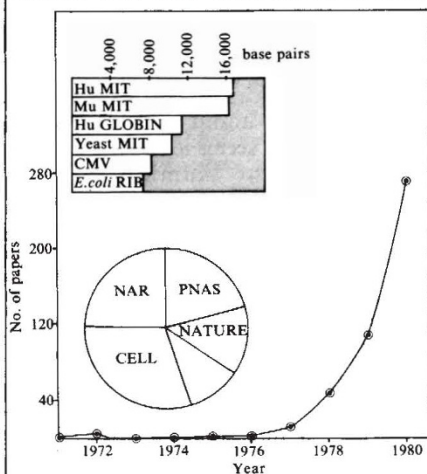
The national research programme saw the construction of a 300-kilowatt test turbine, and the new programme will initially involve the building of a wind-energy "farm" with forty 250-kilowatt turbines as a prototype for much larger central electricity generating areas. The cost of this first "farm" is estimated at 40 million guilders (£8 million), half to be paid by the government and half by the public utilities companies.

The government is encouraging the construction of wind turbines by providing a subsidy of up to 40 per cent, which can be paid back over 10 years. The national development programme will also involve the design of a large 60–70 metre commercial wind turbine. Further research is to be done on tip-vanes and a multiple wind turbine is under development, comprising a tower with three cross-bars, each of which will support two rotors, giving a total capacity of 320 kilowatts.

Casper Schuurin

Sequences add up

The first newsletter of the newly established nucleotide sequence data library of the European Molecular Biology Laboratory (see *Nature* 15 April, p. 596) lists 565 entries and is claimed to be fairly complete up until 1980 and perhaps half complete for 1981. Four journals, *Cell*, *Nucleic Acids Research*, *Proceedings of the National Academy of Sciences* and *Nature*, dominate the entries. The data base contains nearly



600,000 nucleotides, with 18 continuous sequences of greater than 5,000 nucleotides. The longest of these, at 16,569 nucleotides, is that of the human mitochondrion (HuMIT). Mouse and yeast mitochondria and a human globin gene cluster also provide sequences of greater than 10,000 nucleotides and cauliflower mosaic virus (CMV) and *Escherichia coli* ribosomal genes are not far behind. The mouse provides the biggest number of entries, followed by man. In both cases the sequences are largely of immunoglobulin, globin and interferon genes. The newsletter is available from G. Hamm, EMBL, Postfach 10 22 09, D-6900, Heidelberg, FRG.