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A report on Sizewell

Britain's love-hate affair with the pressurized-water reactor is now entering its third decade, still unconsummated. Five years ago it seemed at last that the ill-starred courtship was about to reach fruition. In 1984, however, the joyous day so long awaited by British brokers for this reactor remains as far away as ever.

On December 18, 1979, David Howell, secretary of state for energy, delivered a carefully worded statement to the House of Commons. It was widely reported as a call for a program of one new nuclear power station a year for 10 years, with the first order to be placed in 1982. It was also widely reported that the program was to consist of pressurized-water reactors - the first such power stations to be built in Britain.

Closer textual scrutiny revealed that Howell had said nothing of the kind. What he had said was that the Conservative government would encourage the Central Electricity Generating Board to consider such a possibility. The official statement had been couched in language designed to bolster the drooping morale of the British nuclear industry. But the government had taken care to leave itself an escape route. Within a year both the government and the Board were vehemently disavowing any commitment to a "program" of new nuclear stations, or any fixation on the pressurized-water reactor.

These disavowals, in evidence to the Parliamentary Select Committee on Energy and to the independent Monopolies and Mergers Commission, underlined just how far the context of British nuclear planning had changed in the preceding decade. In December 1973, the chairman of the Central Electricity Generating Board had told the forerunner of the Select Committee that the Board planned a program of some 32 - count them, 32 - 1,300-megawatt Westinghouse pressurized-water reactors, to be ordered by 1982. That proposal was rejected by the government in July 1974 - in the nick of time, as it turned out. The proposal had been advanced on the basis of the Board's expectations about future electricity demand growth. After the OPEC oil shock, however, electricity demand in Britain actually fell. By 1980, in cross-examination before the Select Committee, the Board was insisting that its plans extended no farther than a single reactor. Any future orders would depend on experience with the first one.

Furthermore, the rationale for ordering even this one bore little resemblance to that advanced a decade earlier. No longer was it urgent, or even necessary, to order new power stations to meet future demand. On the contrary, the existing generating capacity of the system was far in excess of the peak demand - more than 30 percent - with another 30 percent already under construction. Having shut down virtually all of the smaller, older stations, the Central Electricity Generating Board was engaged in shutting down stations still fully technically operative.

Since no case could be made for increasing system capacity, the Board introduced different arguments. It declared that further facilities would be required in due course, simply to replace existing ones when they reached the end of their usefulness. The most economic choice would be nuclear. The Board then presented an economic analysis purporting to show that a pressurized-water reactor ordered immediately would generate cheaper electricity than that available from plants

already in operation - and already paid for. The proposed new reactor, to be sited next to an existing gas-graphite "Magnox" station at Sizewell, Suffolk, was said to be a bargain on this basis alone.

Not everyone, however, accepted the Board's premises or its conclusions. Both the Select Committee on Energy, in February 1981, and the Monopolies Commission, in May 1981, published reports registering profound skepticism about the proposed nuclear policy. The Monopolies Commission went so far as to assert that the policy "was against the public interest", a remarkably severe indictment from an official body.

Fortunately for the critics, if not for the Board, the Conservative government had inherited from its precursors a firm undertaking to submit any proposed pressurized-water reactor to examination at a "public inquiry." Many nuclear objectors and critics, with painful memories of the Windscale inquiry of 1977-1978 (*Bulletin*, June 1978), viewed the promised Sizewell B inquiry dubiously. Would it, like its forerunner, elicit a final report that discarded essentially every argument advanced by objectors, summarily and without explanation? Some objectors decided to boycott the Sizewell B inquiry on principle. Others chose to participate, but with little enthusiasm.

The overriding problem for objectors was finances. It was estimated that the cost of preparing and presenting an adequate case might be upwards of £100,000 per organization. Spurning urgent representations, the government stoutly declined to make funds available to assist objectors. The Board, wanting to improve the credibility of the inquiry, was willing to put up the money, but the government refused permission.

On January 11, 1983, the Sizewell inquiry duly convened. Its venue was the Snape Maltings, a concert hall within sight of the North Sea coast just a few miles from Sizewell. The original mentor of the Maltings had been the composer Benjamin Britten. It is, however, doubtful whether he could have found much dramatic libretto material in the abstruse economic and technical transactions. The inspector appointed by the government to chair the inquiry was Sir Frank Layfield, QC (Queen's Counsel), a senior barrister from London. Ironically enough his previous involvement with nuclear controversy dated back to the Windscale inquiry, in which he had acted as leading counsel for one of the objectors, the Town and Country Planning Association. The Association was on hand again for the Sizewell inquiry, as were Friends of the Earth. A prominent newcomer among the objectors was the Council for the Protection of Rural England. A long-established, small-c conservative organization whose concerns were spelled out in its name, the Council had been edging into the nuclear controversy for several years. At the Sizewell inquiry it played a key role.

In view of the shortage of funds, the objectors were compelled to limit their physical participation. It was not possible to pay lawyers simply to sit and listen to their colleagues declaim. Accordingly, Friends of the Earth and the Council for the Protection of Rural England agreed to split the two main areas of controversy between them, the latter addressing the economic case against the proposal, the former dealing with issues relating to nuclear safety.

Both aspects of the proposal had aroused intense debate long before the inquiry opened. The design that had originally been commissioned by the Central Electricity Generating Board from the National Nuclear Corporation, the country's one remaining nuclear power station builder, had used the US Trojan plant as "reference design." But the design had been considerably modified, presumably to bring it into line with the requirements laid down by Britain's Nuclear Installations Inspectorate. When this design was delivered to the Board in April 1981, it proved to be some 30 percent more expensive than the equivalent US plant.

Given the nature of the Board's economic case for Sizewell B, the extra expense was insupportable, and the design was sent back for revision. Prime Minister Margaret Thatcher put Sir Walter

Marshall, then chairman of the United Kingdom Atomic Energy Authority, in charge of a "task force" to pull the reactor proposal into shape, knocking heads if necessary. He did so, and many believe it was this effort above all that led to his appointment, in July 1982, to head the Board itself

The cost reductions were achieved, however, by removing design features that had apparently been added to meet British safety standards. The Board denied that the changes made the plant any less safe, but the objectors disagreed. Long before the inquiry convened, two different Energy Secretaries and the head of the Health and Safety Executive declared that all the relevant safety information would be made available well ahead of the inquiry, to give objectors the opportunity to examine it as thoroughly as they wished. Came the inquiry, however, the Board had still not satisfied the Nuclear Installations Inspectorate about a number of key safety issues.

At last, in February 1984, the Inspector reprimanded both bodies for the interminable delay. Objectors pointed out that the inquiry would be over and the Inspector's report written at least a year before the outstanding questions were resolved.

The official position on nuclear power was meanwhile left in no doubt. In 1983, while the inquiry was sitting, the then energy secretary let it be known that the government intended to press on with its nuclear plans regardless of the outcome of the inquiry. The Board placed orders for hardware for Sizewell B, saying that otherwise the project would face further costly delays, and that these orders in no way prejudged the outcome of the inquiry. Objectors thought otherwise and said so, but in March 1984 the Board announced that it was embarking on a design study for a station using advanced gas-cooled reactors, to be ready in the event that permission for a pressurized-water reactor at Sizewell was refused.

Meanwhile the original estimated length of the inquiry - six months at most - had quadrupled. Participants were steeling themselves for a third year at Snape. After the inquiry itself ended, the Inspector would undoubtedly take some months to draft his report, and Parliament would have to debate it before the government made its decision.

Skeptics had to admit that the Sizewell inquiry was thus having one unambiguous impact on the pressurized-water reactor proposal. If it did eventually get the green light, construction would begin at least four years later than originally intended. In the interim the global fortunes of nuclear power have become ever more delicately poised. The future of the first British station of this design is less certain now than anyone imagined possible five years ago.

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