POWER PROFILE:
LORD WALTER MARSHALL OF THE UNITED KINGDOM'S CENTRAL ELECTRICITY GENERATING BOARD

The Lord Marshall of Goring

If the old cliche, "everything comes to him who waits," carries any truth, then the United Kingdom's Central Electricity Generating Board should have a lot to look forward to.

Since March 1985, the CEGB has been anxiously awaiting the outcome of a lengthy Public Inquiry, which it hopes will lead to government consent to construct Sizewell B, the United Kingdom's first pressurized water reactor power station. The CEGB is confident that the PWR can produce lower electricity costs than the nation's present coal-fired and gas-cooled nuclear units.

In the meantime, Lord Walter Marshall, chairman of the CEGB, has taken the old cliche one step further. He seems to be following the advice of a forerunner in the electricity business, Thomas Edison: "Everything comes to him who hustles while he waits."

Lord Marshall knows that once the approval is granted, time will be critical; consequently, he plans to begin construction of Sizewell B as early as possible — with a completed design in hand. Preparedness is the key. The completed design, coupled with government and public acceptance, will be the main mechanism for constructing Sizewell B on time and within budget.

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In the following interview, Lord Marshall shares his views on the United Kingdom's energy scene and the CEGB's decision to adopt PWR technology.

Q Why has the Public Inquiry into Sizewell B taken so long?

A Switching from gas-cooled to water technology is a very big policy decision which requires acceptance from both the government and the public.

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In the late 1970s, the British government endorsed a thermal reactor strategy which introduced into the CEGB system an alternative to the AGR. Soon after, the accident at Three Mile Island occurred. Had it not been for Three Mile Island, I believe the Sizewell Inquiry might have been over more quickly. The public was very conscious of the fact that Three Mile Island was a PWR. That image is something we all have to try to change.

Although the Inquiry has taken a long time, we have accepted the fact that it is necessary to have a wide ranging Inquiry. I would much prefer taking the time to acquire consensus judgment up-front, rather than having to deal with a lot of public controversy after we have launched the project.

Q What are some of the CEGB's goals for the future PWR program?

A One of our goals is to develop a well-defined PWR product, such as the NSSS, or eventually the nuclear island. We want to have a company based in the United Kingdom to which we can give a firm price contract to supply that product. Of course, we want British involvement in that effort and we want British manufacture of the components. But we are not naive enough to think that we can accomplish that task alone. That is why I am pleased about the establishment of PWR Power Projects [the joint company formed by Westinghouse and the U.K.'s National Nuclear Company] to provide much of the work on our first PWR. Westinghouse's participation in this joint company will be a great asset.

We are very happy to have Westinghouse enter a partnership with our British companies on the Sizewell project. I hope the partnership continues because I think there could be big advantages to our country.

Q Do the people of Great Britain look favorably on the presence of U.S. technology?

A I am sure that the British people and certainly some British politicians would prefer to build British technology. But, if we are going to build light water reactors, specifically Westinghouse PWRs, we are quite content to keep Westinghouse as a

partner in our business. I keep trying to explain to the British public that the PWR is now a fully international technology.

Q How will the development of PWR technology affect the U.K.'s position in the world nuclear community?

A Many of our present technologies, particularly in the fuel cycle, are well-regarded and are doing well internationally. For many years we have operated gas-cooled reactors, which demand reprocessing. Therefore, the U.K. has had a lot of experience with reprocessing technology. We have a strong enrichment company through Urenco [in which British Nuclear Fuels Ltd. is a main partner] with centrifuge technology, which is doing very well on the world market at the moment. We also have excellent fuel fabrication capability in BNFL. I believe that if we now begin constructing the PWR, which is the most popular reactor in the world, we will finally have the full array of technologies which we not only need for ourselves, but which we could sell abroad.

. . . from a regulations viewpoint, I think our system is enormously better than the U.S. system.

Q Westinghouse has developed a program for building nuclear plants within a six-year time frame in the United States. It is based on partnership, risk-sharing, firm price contracts, and design completion prior to construction. In the past, U.S. construction projects have been very lengthy due to intervention, incomplete designs, and the adversarial relationships that have traditionally existed within the U.S. nuclear industry. Do any of these situations exist in the U.K.?

A It is remarkable how similar some of the situations are. For instance, in the U.S. you used the "fast track" approach of simultaneous design and construction to build your early fossil plants and later applied this same approach to construct your nuclear plants. We too used a fast track approach to build our early Magnox stations and tried to apply this method to AGR construction. The Magnox reactors were sufficiently simple, so the approach worked. But it was totally inefficient for the more complex AGRs. The fast track method did not allow us to complete our engineering design prior to starting construction. We have learned many lessons from our previous construction projects and we are now determined to get the vast majority of the design work completed in advance.

The Westinghouse concept of partnership and commitment among the utility, the regulators, the financiers, and the supply organization prior to construction is exactly what we are now trying to follow. There is one major difference, however. You urge early commitment from regulators so that they do not require backfits after construction has begun. We are very fortunate that we do not have to urge that commitment upon our regulators.

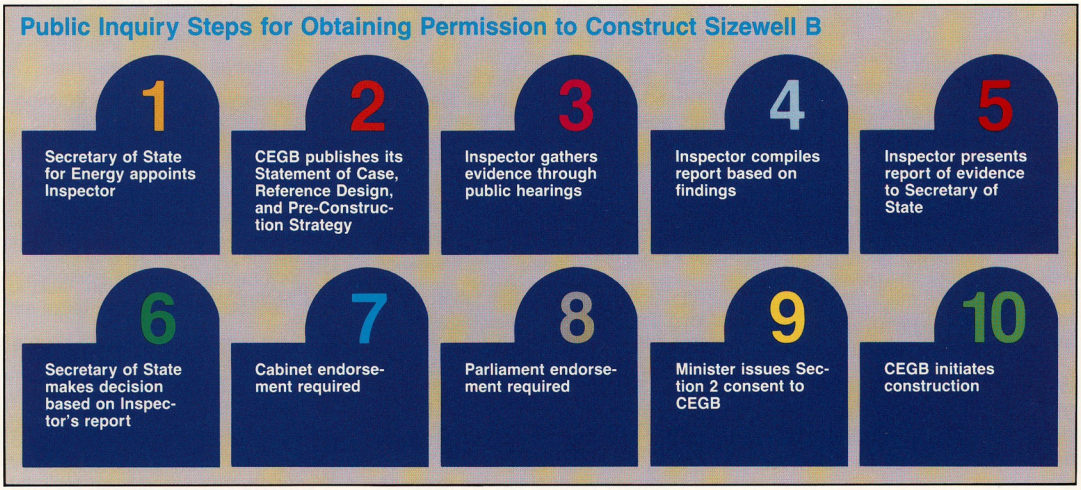
. . . the PWR should always be competitive with coal in the United Kingdom.

Traditionally, the U.K. Nuclear Installation Inspectorate scrutinizes the plant design in very close detail prior to granting the site license or construction license. The Inspector is very hard to convince during the early stages. However, once he has approved the project, he will rarely, if ever, request a retrofit because he realizes the enormous expense of such a request.

Once the project is approved, our primary concern is to be careful of our engineering, our scheduling, and our quality. The Nuclear Inspector is likely to give us trouble during construction only if we fail on quality control. He is not likely to intervene on any design question.

Q What about public intervention? Could that delay the project in midstream?

A The very nature of British government procedures makes intervention unlikely once construction has begun. The Secretary of State for Energy, who gives us formal written authorization to build the power station, is himself a member of Par-



liament. His decisions are subject to debate and challenge in Parliament. This makes the whole approval process part of Parliamentary business, which means that approval is not eligible to be challenged in the courts except in unusual circumstances.

Because the U.S. system is a legalistic one, based on regulations, the precise wording of the regulations is very important. This allows your interveners to challenge decisions. The British system is governed by scientific and engineering guidelines rather than written regulations. Once we reach agreement with the NII on each of its issues, the decisions are final. That's why, from a regulations viewpoint, I think our system is enormously better than the U.S. system.

Q In general, how does the British public feel about nuclear energy?

A I believe that people who have carefully considered the issue are in favor of nuclear power. I think that the 1984/85 massive miners' strike has made a lot of people think more seriously about nuclear energy as an alternate source of electricity. During the height of the miners' dispute, the polls indicated stronger support for nuclear power. Unfortunately, memories tend to be short. The results of today's polls are more ambiguous and indicate that public acceptance is about fifty-fifty. Public opinion has also been affected by media hysteria over a series of incidents at BNFL's reprocessing plant at Sellafield — which were minor in terms of hazard to the public — and by a highly critical House of Commons Select Committee Report.

Q Are economics and capacity needs the key factors in convincing the public that nuclear power, and the PWR in particular, is desirable?

A Our main case for building additional nuclear units, such as Sizewell B, is to provide low cost electricity and to diversify our fuel sources.

In the Public Inquiry, we did not use capacity need as a primary argument simply because there was no need for new capacity at the time Sizewell B would begin operating on the system. However, last year there was an increase in electricity demand which has led us to revise our forecasts; and with the delay over a decision on Sizewell, we will now need that power system for capacity purposes.

As for economics, the CEGB is currently paying £45 [$68 U.S. equivalent] per ton for most of our coal, which is indigenous. That is an incredibly high figure! So, no matter how you look at it, the PWR should always be competitive with coal in the United Kingdom.

Q During the miners' strike, how did the CEGB meet the U.K.'s energy needs?

A We have a number of very large oil-fired power stations which we had built before oil prices rose. These plants are normally operated only to meet peak loads; therefore, they were only partially in operation. When the strike began, we put them into full-scale operation very rapidly. In addition, we had enormous stockpiles of coal at all of our coal-fired stations. Plus, some of the Magnox stations, which had been out of service the previous year for major overhauls, were back on line when they were needed.

If we get the go-ahead, the decision will be a very good shot in the arm for nuclear power.

Many of the United Kingdom's present nuclear technologies, particularly in the fuel cycle, are doing very well on the world market. British Nuclear Fuels Ltd. is the world's leading manufacturer of fuel for gas-cooled reactors.

Of course, not all the miners supported the strike. One group of miners in Nottingham maintained production of coal. Although some railway workers, in sympathetic action with the miners, refused to move the coal by rail, we managed to transport the coal to the power stations by truck. It was quite an astonishing exercise. So, with a mixture of all these different tactics, we managed to survive the strike.

Q What has been your greatest challenge as chairman of the CEGB?

A Undoubtedly, maintaining electricity supplies during the coal strike has been my greatest challenge. If we get consent to build Sizewell B, then my other big challenge will have been the change to the pressurized water reactor. It will be a momentous decision for the United Kingdom, as the first country to make the switch to PWR technology in the post-TMI era. If we get the go-ahead, the decision will be a very good shot in the arm for nuclear power.