West Germany

Terror against technology

Hamburg

KARL HEINZ Beckurts, a renowned physicist and one of the most important research managers in West Germany, was killed by terrorists of the Rote Armee Fraktion (RAF), in Munich on his way to work on 7 July. He and his driver, Eckhard Groppler, were victims of a 10-kg bomb, which was ignited electronically as they passed it in their car on their way from Beckurts' home in the Munich commuter village Strasslack to his Siemens office, where he worked as head of the department of research and technics, employing 36,000 workers.

Beckurts, who was born on 16 May 1930 in Rheydt, studied physics in Göttingen, first at the university and then at the Max-Planck-Institut for physics, where he finished his doctorate in 1956. Two years later he became head of the department for neutron physics and reactor technics at the Kernforschungszentrum in Karlsruhe. He moved to the Kernforschungszentrum in Jülich in 1970, and during his ten-year stay was responsible for its reorganization, introducing institutes for biotechnology and contact surface research. He then went to Siemens and became head of the research department.

Apart from his work there and his participation in the Grossforschungseinrichtungen, he taught in Karlsruhe and as an honorary professor in Bonn and Heidelberg. He is said to have been responsible for Siemens' leap into high-technology research.

Beckurts was also a keen supporter of the nuclear programme and it may be this that made him a target for the terrorists. He had fought for his conviction that, even after the Chernobyl disaster, a stable energy supply for West Germany must include nuclear power in the foreseeable future. Beckurts was also head of the Arbeitsgruppe Kernenergie of the Bund Deutscher Industrieller.

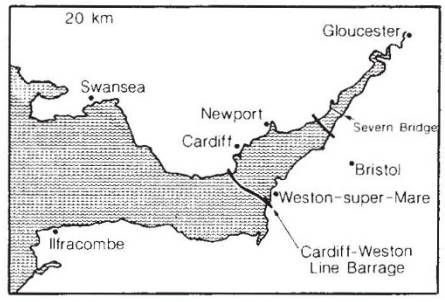
It is evident that in planning the killing the terrorists took into account his support for nuclear power as well as the new political situation in West Germany. There is now not only argument over quitting the nuclear programme, but also clashes between demonstrators and police in Brokdorf and Wackersdorf which prove the potential for violence on both sides and the readiness of a few to carry out criminal actions. RAF apparently seeks support from those who have already decided to abandon legal forms of action. A letter found near the site of the bombing "accused" Beckurts of having supported, apart from the nuclear programme, the US Strategic Defense Initiative (SDI) and the European research programme Eureka, described as programmes to further the "strategic reorganization of research and production". It is no surprise that a man like Beckurts was involved in consultation on Eureka and SDI, He had, however, committed himself to SDI, and, in spite of Siemens' participation, was not at all enthusiastic about Eureka.

The assassination was apparently planned long in advance. Beckurts' name had been found on a list discovered in an apartment used by terrorists after the killing of Ernst Zimmermann, head of the Motor- und Turbinen-Union, last year. Friedrich Zimmermann, Minister of the Interior, told the press that the Siemens manager had been warned. Safety measures will not, however, be tightened up. According to Zimmermann, there is no absolute protection against a remote-controlled bomb: not a very promising outlook for other endangered scientists. But laws regulating the right to demonstrate and the police law may well be tightened up. Political commentators say that this might have been a tactical aim of RAF, because more severe clashes could give them wider support or even new members from whom to recruit. **Jürgen Neffe**

Energy

Power from the Severn waters

THE world's largest tidal power-generation project came a step closer to realization last week with the decision of the UK Secretary of State for Energy to back a £5.5 million advanced feasibility programme. The decision was triggered by a new report showing that a 16-km barrage



across the Severn Estuary could be used to generate 14.4 TWh of electricity a year, six per cent of the nation's demand.

The idea of tapping the awesome energy of the Severn's tides — their 30 ft range puts them among the world's highest — has been around for a long time. In 1981, a committee under the chairmanship of Sir Hermann Bondi reported that a barrage was technically feasible. That provided enough encouragement for a more detailed study to be carried out by the Severn Tidal Power Group, a group of six major construction companies, with backing from the government. The report published last week says that the barrage, containing 192 turbine generators, could be built by the year 2000: six years of preconstruction development and seven years of construction, providing 44,000 jobs, would be needed. A further programme will now look in more detail at costs, performance and regional and environmental issues, as well as investigating a smaller tidal barrage scheme for the estuary of the River Mersey.

Two major issues have dominated discussion of the barrage scheme: the cost of the electricity it will generate in comparison with conventional power stations and the effect it will have on the environment, particularly on the huge area of water behind the barrage.

Serious environmental problems are not foreseen by the report. Water will still flow into the Severn Estuary and it is believed that there would be little change in the salinity of the water or in the rate at which pollutants would move out to sea. But the tidal range behind the barrier would fall by half: although it would still be well within the range found elsewhere in Britain, there is no doubt there would be changes, which are not yet predictable, in the estuary's ecology. Ships using the Severn would be largely unaffected as locks will be provided in the barrage.

Calculating the costs of generated electricity has been more difficult as it depends on making projections into the next century. Electricity would be generated as the tide ebbed and rushed through the line of turbines. Pumping will add more energy: around high tide, when the level of the water either side of the barrier is the same, water can be pumped over the barrier. Later, when the tide has fallen, the extra water can be allowed to run out to give a net energy gain. The gain can be further increased if cheap rate electricity can be used for pumping and the generated electricity returned to the grid at peak rate times. One problem, of course, is that the time when electricity is generated is determined not by demand but by the tides. That, says the Severn Tidal Power Group, is not necessarily a problem: coal-fired stations can be kept on spinning reserve and brought up to full power as the tidal generators slow down.

Taking into account the need for this back-up, the tidally generated electricity seems likely to be marginally more expensive that nuclear-generated electricity but cheaper than coal-generated electricity. As it is unlikely that a large number of new nuclear power stations will be built this century, there should be room for tide power. **Alun Anderson**

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