

## Public relations blunders still dog UK nuclear industry

London

THE British nuclear industry's persistent failure to understand the degree of public suspicion surrounding nuclear power generation continues to cost it dear. Last month, the Central Electricity Generating Board (CEGB) planned to demonstrate that the natural circulation of coolant gas in reactors of the Magnox variety is sufficient to cool the reactor after shutdown. The experiment, which would have required authorization from the Nuclear Installations Inspectorate, was to have been carried out at a power station at Trawsfynydd in Wales. The CEGB has performed similar tests in the past without incident and saw no reason to announce its intentions publicly. However, some Trawsfynydd engineers, apparently concerned that the 22-year-old reactor was unsuitable for such an experiment, tipped off the national press. Faced with cries of "Welsh Chernobyl", official protests from the government of the nearby Republic of Ireland and the threatened evacuation of local residents, the CEGB was forced last week to postpone the test. In due course, it says, it will make a "full presentation of what is proposed well in

advance of the test", which might be carried out elsewhere.

Coinciding with last week's announcement to postpone the test was the publication of a document by the Health and Safety Executive (HSE) setting down for the first time the risk targets used by the nuclear industry. John Rimington, HSE's director general, believes, optimistically, that had the document appeared before details of CEGB's experiment were disclosed some of the heat might have been taken out of the debate.

The HSE, which licenses and inspects the nuclear industry, produced the document, *The tolerability of risk from nuclear power stations* (HMSO, £4.95), in response to a recommendation contained in Sir Frank Layfield's report of the public inquiry into proposals to build a pressurized water reactor at Sizewell in Suffolk. Layfield said that the HSE should formulate and publish guidelines on the tolerable levels of individual and social risk to workers and the public from nuclear power stations. The HSE document is intended for public discussion, in line with Layfield's view that "the opinion of the public should underlie the evaluation

of risk . . . there is at present insufficient information to allow understanding of the basis for the regulation of nuclear safety".

The HSE has calculated 'tolerable' and 'acceptable' levels of risk on the basis of those that society and individuals currently accept — such as the existence of petrochemical complexes.

It concludes that for an 'important' release of radioactivity from a nuclear reactor, "a figure that might be accepted as tolerable for a considerable uncontrolled release anywhere in the UK might be about 1 in 10,000 per annum". Such a release could come from a major civil nuclear accident, defined as one giving rise to an uncontrolled release of radioactivity capable of giving doses of 100 millisieverts at 3 km — an accident that might cause the eventual death from cancer of about 100 people. The report says that safety measures in modern reactors reduce the chance of an uncontrolled release to between 1 in 10<sup>5</sup> and 1 in 10<sup>6</sup> per annum. On this basis, a theoretical upper limit of modern nuclear power reactors in Britain would be 100. At present there are 42 operating reactors. **Simon Hadlington**

## Further cracks found in superphénix

Paris

DISCOVERY of more cracks in the fuel-rod storage chamber of Superphénix, the French prototype fast-breeder reactor shut down since May 1987, has made a decision about its future unlikely before this autumn. Meanwhile, ultrasound tests to be carried out in May should end speculation that similar cracks have affected the steel casing of the reactor core itself.

In its report to Industry Minister Alain Madelin, Electricité de France (EDF), which runs Superphénix in a consortium with West German and Italian members, said that seven hairline cracks had been located along welded joints in the steel tank that usually contains 600 tonnes of liquid sodium coolant. So far, only one of the cracks — 46 cm long — is known to have penetrated the entire thickness of the steel and is thought to be responsible for the leak of liquid sodium discovered last spring (see *Nature* 328, 100; 1987). EDF and the nuclear industry's security service, SCSIN, have denied claims in French newspapers that all 98 of the tank's welded joints have developed similar faults. Further tests will be carried out this month.

As hopes of repairing the cracked tank recede, the question facing Madelin is whether Superphénix can safely be started up while the storage tank is being replaced. Although not necessary for generating electricity, the tank is at present the only place on site that where fuel rods from the reactor core could safely be placed in an emergency.

Peter Coles

## A first for the Japan prize



FOR the first time, a Japanese researcher is among the winners of the Japan prize. Established in 1985, the prize awards ¥50 million (\$390,000) each year to winners in two pre-selected categories. Isao Arita, director of Kumamoto National Hospital, shares the award for preventive medicine with Donald A. Henderson, dean of Johns Hopkins University School of Medicine, and Frank Fenner, formerly of the University of Adelaide (pictured top, left to right), for contributions to the World Health Organisation (WHO)'s eradication of smallpox. Both Arita and Henderson have served as chief medical officer of the WHO World Smallpox Eradication Office in Geneva. Also sharing the prize for preventive medicine, this year split between two quite different areas, are Robert C. Gallo of the National Institutes of Health and Luc Montagnier of the Institut Pasteur (bottom, left and centre), for research on the virus causing AIDS. In the second category, for energy technology, Georges Vendryes (bottom right), scientific adviser to the president of the French Atomic Energy Commission, receives the award for proposing sodium as a coolant in fast-breeder reactors and for his role in encouraging international cooperation in fast-breeder research.