

● THE COURT of inquiry into the explosion which killed 28 people and caused £70m damage at the Nypro chemical works in Flixborough, Lincolnshire, has been told that a temporary by-pass system in the cyclohexane unit was not tested at an appropriate pressure. According to counsel for the company (owned jointly by Dutch State Mines and the National Coal Board) it is now clear that the by-pass system was installed without an adequate design study, and that if such a study had been carried out, a different system would have been used. Most of the technical evidence has yet to be presented, and a recess is expected to allow for a consensus of expert specialist opinion. Reaching the consensus, however, will be difficult because of the quantity and complexity of the technical information likely to be available.

But there is no doubt that the findings of the inquiry will have profound implications for the chemical industry in Britain and elsewhere because of the fundamental safety issues which have been raised. The complexity of chemical plants and the huge reserves of stored energy they contain seem to have completely outrun the rather Victorian arrangements of the Factories Inspectorate—the 1974 Health and Safety at Work Act notwithstanding. The safety officer at the Flixborough site told the court that nothing on the scale of the explosion had ever been conceived or considered and that the rule book governing the safety of chemical plants needed rewriting in the light of events there.

The Health and Safety Commission now being set up is bound to look carefully at the results of the findings of the Flixborough Inquiry. As an independent commission it will bring together the existing government inspectorates covering nuclear installations, explosives, alkali works, mines, quarries and factories. The commission was proposed before the events at Flixborough but it comes at a time when a lead to industry is desperately needed. Already some large petrochemical companies have approached the Atomic Energy Authority Safety Commission for consultation on safety problems and there is a growing feeling, not least amongst the companies themselves, that the chemical industry should be governed by regulations at least as stringent as those of the Nuclear Installations Inspectorate.

● IN SPITE of recent inflammatory news reports, vaccination is still the best means of ensuring overall community protection from infectious diseases. This was the outcome of a report on

vaccination published by the Office of Health Economics (OHE) last week.

While diseases such as polio, diphtheria, tetanus and measles still present significant health hazards, OHE maintains that in some areas of the UK, only two-thirds or less of all children are adequately immunised. Thus to maintain public trust in vaccines available from the National Health Service, withdrawal of controversial vaccines such as whooping cough (pertussis) may become necessary in the near



## Round Britain

future. It has been claimed that pertussis vaccine has caused brain damage in a small number of young infants, although there are no published figures to substantiate such an accusation. The OHE, however, recognises that an element of risk is associated with vaccination, but takes the view that provided the benefits far outweigh the risk then it is acceptable.

The study suggests that only a very small proportion (probably a few hundred) of the 50,000 to 60,000 severely mentally handicapped children in Britain owe their condition to immunisation by pertussis vaccine. But this small proportion has become of increased relative significance because of the fall in risks from other factors, such as infectious diseases. In an ideal national health care service, argues OHE, special provisions for the compensation of those damaged by vaccines should not have to be made because services for all the handicapped should be adequate. However, state compensation for vaccine-damaged people and their families may well draw attention to the poor provisions for the majority of brain-damaged people.

Improved living conditions, environmental health measures, new medicines and vaccination programmes, says the report, have reduced health risks in Britain from all known infectious diseases. In fact over the past 30 years, the number of child deaths from infectious diseases has dropped from about 10,000 to virtually none. Thus withdrawal of vaccination programmes which have outlived their usefulness should be considered.

Worldwide progress in smallpox immunisation has been so effective that in this country the risks associated with 'protection' outweigh the dangers of smallpox infection. The withdrawal of

routine smallpox immunisation in 1971 by the NHS is supported by the OHE, although here again there has been much criticism of this action mainly because of the occasional reappearance of the disease.

All the same there appears to be strong evidence to indicate that there is a positive benefit to be derived from all the vaccines currently in use by the NHS, the only possible exceptions being BCG and pertussis vaccines.

The attention which pertussis vaccine has received was criticised by OHE as being over dramatised, particularly since the figures are not backed up with any definite evidence. The report says that there is no firm evidence to show that this vaccine's use causes more distress than benefit to the community as a whole.

OHE suggests that in view of the publicly voiced doubts as to the safety of pertussis vaccination priority should be given to a relatively swift action designed to restore confidence before other forms of immunisation are affected. An obvious option would be the temporary withdrawal of routine pertussis vaccine by the NHS, although this is not a recommendation of OHE. Recently the Department of Health and Social Security decided to continue pertussis vaccination while data necessary to make a critical review could be collected. The Institute of Biology endorsed this view when they submitted their views to the Royal Commission on Civil Liability and Compensation for Personal Injury.

Although it is unlikely that any major changes in vaccine policy will be made in the next few years the proposal to withdraw routine BCG vaccination is under discussion.

● AN idea for using the energy in the waves of the sea as a source of safe non-polluting power, developed by Dr Stephen Salter of Edinburgh University has attracted a Department of Trade grant of £60,000. As described by Dr Salter in an article in *Nature's* Energy Review earlier this year (*Nature*, 249, 720; 1974) his system incorporates large steel vanes which harness the rolling motion of the waves, more efficiently than the up and down movement utilised by previous systems.

Apart from the Department of Trade, the Central Electricity Generating Board and a leading British concrete fabricator, Cementation Ltd., are also interested.

Also, Sir Christopher Cockerell, the inventor of the hovercraft, is a partner in a newly formed company, Wavepower Ltd, which is interested in the commercial application development of wavepower.