

## The Black Report

In a quest for energy man has compressed millennia of normal evolutionary changes into days. Rapid modifications of the natural environment are almost without exception made with the intention of producing improvements and advantages for people. Environmental health problems arise from the fact that by-products and side effects occur that may result in increased sickness and even death in the general population. In some cases the undesirable side effects may be unknown or unpredictable; in other cases they are tolerated as a supposed 'necessary price' to pay for the benefits of the energy form. The nuclear power industry is a case in point. It has generated a great deal of interest recently and subsequent to the showing of the programme Windscale - The Nuclear Laundry by Yorkshire Television (YTV) in November 1983 the UK Minister of Health established an advisory group chaired by Sir Douglas Black to inquire into the possible increased incidence of cancer in the area adjacent to the Sellafield site. The advisory groups' report Investigation of the Possible Increased Incidence of Cancer in West Cumbria was recently published and makes interesting reading. The evidence on which calculations into radiation exposure of young people in Sellafield are made is contained in three separate reports produced by the National Radio logical Protection Board (NRPB).

The report does not attach great importance to 'critical groups' such as laverbread eaters and persons with a strong dietary bias towards fish culled from the relevant areas of the Irish Sea. In making its calculations the report was interested in the majority of the population under consideration and indicated that 'It is these average- doses to the population that are most relevant to any risk estimate, and these average doses were used in the N RPB report in calculating doses to red bone marrow'.

While the report refers to the six babies with Downs' Syndrome born to young mothers who had attended school together in Dundalk during the Wind scale fire of 1957 and to the suggestion by the researchers Dr Sheehan and Professor Hillary that these several cases might be related to discharge from Sellafield, it indicated that the subject fell outside the terms of reference and included a recommendation that a detailed study to explore the Down's Syndrome aspect be undertaken 'in the vicinity of Sellafield.'

The terms of reference are so narrow and their interpretation so limited that the report fails to address adequately the issues raised in the YTV programme. What is more distressing are the fallacies in logic and the absence of a comprehensive environmental health perspective revealed in the document. The report, noting the lack of health input, indicates surprise at 'the lack of co-ordination in the assessment of the overall impact of the discharges on the population. Each organisation we spoke to had considerable expertise in their particular area of environmental monitoring, but we were unable to identify any organisation that had the responsibility for assessing all of the information available and deciding on the overall implication of the discharges with regard to the health of the community'.

A knowledge of the principles and basic methods of statistics is but one of the several skills involved in the critical evaluation of the health risks arising from ionising radiation. Statistical understanding needs to be synthesised with environmental health expertise and logical skills to ensure a comprehensive and cogent exposition and analysis of the available information. A person's mathematical calculations may be flawless, but if the model used to predict additional cancer cases resulting" from the activities at a nuclear re processing plant is based on flimsy and uncertain information then lengthy calculations will not improve one's predictions. The report extrapolates from prediction models of high uncertainty and creates the impression of a scientific accuracy which is un warranted.