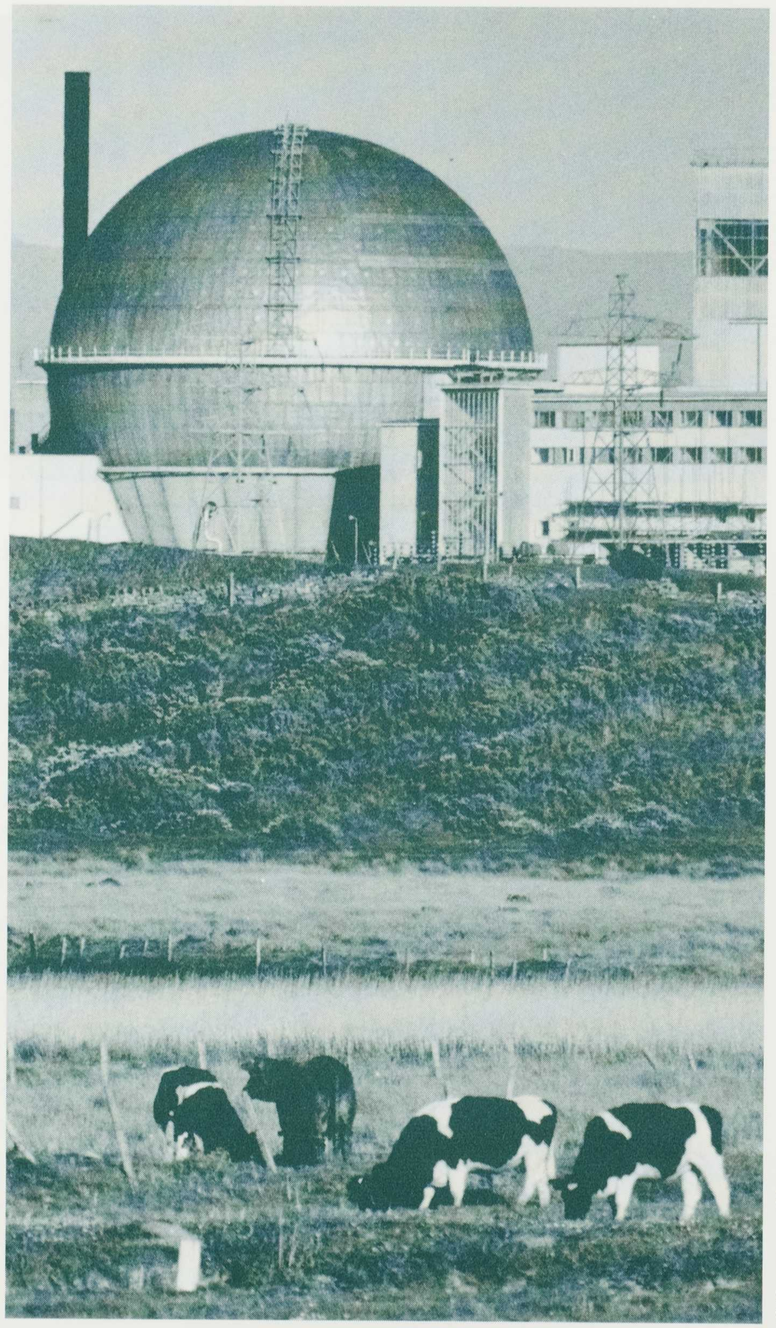
reported the incidence of lung cancer in asbestos workers was ten times that in the general population. But the debate continued. Only in 1967 were experimenters finally able to induce cancer in animals by dosing them with asbestos.

In 1983 attention was drawn to an increased number of childhood leukemia cases in the vicinity of a nuclear re-processing plant at Sellafield in Britain. Although the



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▶ ***Sellafield, England. British Nuclear Fuel's re-processing facility:*** *Animal data diminished the risks from low-level radiation, yet later, human-based studies showed children fathered by Sellafield workers at higher risk of leukemia.*



incidence of leukemia was ten times the national average, the official Committee of Inquiry decided that the nuclear facility was not the cause. Their conclusions were based on information from animal experiments. By preferring animal data to direct human observations, the effect was to minimize the risks of radiation.[32] Nevertheless, subsequent human studies revealed that radiation was indeed to blame. It was found that those at highest risk of leukemia were born to fathers who worked at the nuclear plant. This suggests an effect of radiation on fathers which leads to cancer in their offspring.[33]

For over 80 years doctors have known that too much alcohol can cause cancer but once again this well-established fact has been questioned because it proved impossible to induce the disease in laboratory animals. Indeed, some researchers insist that alcohol should not be classified as a human carcinogen because there is no evidence from animal experiments![34] The same is true for benzene, an industrial chemical widely used in manufacturing processes. According to the August 1982 issue of the scientific journal *American Statistician,*

***"Although there are reliable human data linking benzene to leukemia, scientists have been reluctant to categorize benzene as a carcinogen because there are no published reports that it induces leukemia in rodents."***

Arsenic is yet another well known human carcinogen for which animal tests have proved persistently negative. Human population studies have identified cancers in people following exposure to arsenic in drinking water and medications, as well as in chemical and agricultural workers, and also in those mining the ore.[35] By 1947 an historical review of the subject described how dozens of animal tests had given "only doubtful results," but that some human cases seemed definitely linked to the chemical.[36] In 1969 researchers at the National Cancer Institute stated[37] that "arsenic has been suspected by many investigators as a carcinogen in man, though there is no supporting evidence from animal experiments." And in 1977 a further scientific review still concluded[35] that