

## news in brief

**Silicon production costs 'reduced 90%':** A new process, developed by a group of researchers at the Stanford Research Institute, California, may reduce the cost of silicon by as much as 90%, an SR1 publication has claimed (*The Leading Edge*, summer 1979, p22). Thus, by 1986, 1 kg of silicon could cost as little as \$5, says the article. At the moment, 1kg of silicon costs \$60. Costs could be further offset by the sale of sodium flouride, a by-product of the new process, for other industrial uses. The new manufacturing method is a one-step process producing relatively pure silicon, with sodium flouride as a by-product. The necessary chemical reactions take place in one vessel and the cheapness and ease of the new process are further enhanced by the fact that the reaction is exothermic and therefore requires no outside fuel source. The main beneficiary of a new breakthrough in the manufacture of silicon would be solar energy using cheap silicon cells. However, the new process is yet to be tested on an industrial scale.

**Development need not endanger the environment:**

Environmentally 'safe' development can be carried out by all nations according to Dr Mostafa Tolba, (right) Executive Director of the United Nations Environment Programme (UNEP). In an interview with *Siren*, UNEP's Regional Seas Programme newspaper, Dr Tolba said "appropriate environmental management should be a common practice to both poor and rich nations, and should be the meeting ground of common objectives." Developing countries should seek a solution to their environmental problems in the process of development itself. "It is not so much a question of financial resources necessary to meet environmental problems, as it is the undertaking of rational decisions based on a long-term integrated concept of development."



Dr Tolba felt that the regional approach to environmental problems was one of the most successful. UNEP's Regional Seas Programme is "one of the best of our programmes if not just the best". This programme aims to protect the enclosed seas and coastal environment where some of the highest levels of pollution are found. Compatible research will be carried out throughout these regional seas enabling a communal solution to the problem to be made. This, together with a common resolve among coastal states towards problems affecting them all, are the two most important practical achievements of UNEP's Oceans Programme according to Dr Tolba.

**Aldermaston deaths:** Two former workers at the UK Atomic Weapons Research Establishment, Aldermaston died from cancer last month with more than the permitted level of plutonium in their lungs. Internal organs from both men's bodies have been sent to Windscale for tests, but it is not yet certain whether radiation caused their deaths. Kenneth Cummins, 49, had been at AWRE for 14 years and Albert Newman, 51, had worked there for 26 years. Both worked in the "active areas" of the establishment and were among the 70 men claiming damages against the Ministry of Defence for plutonium contamination (19 July, p184). Parts of Aldermaston were closed last year after 12 workers were found to have more than the permitted level of radiation in their bodies. Before these areas can be re-opened, new ventilation methods must be installed and more safety and maintenance workers must be employed in accordance with the findings of the Pochin report which examined radiological health and safety at the establishment and was published at the end of last year.

**Finnish reactor delayed over safety requirements:** Delays in commissioning the second set of the Loviisa nuclear power station are, it appears, due to the higher safety requirements demanded by Finland. The equipment for Loviisa, produced in the Soviet Union, includes a number of modifications not considered necessary for Soviet home consumption. These include a containment vessel and a shield to prevent internal corrosion of the reactor's pressure chamber.

In mid-June, the Finnish power authority Imatran Voima announced that the loading of the second set had been postponed, "since talks between Finnish and Soviet specialists on the removal of the shield had not yet been concluded." It was not clear at that stage why an anti-corrosion shield should need to be removed at all, although the Finnish media stressed that Imatram Voima "wished to observe strict safety standards" and "in case the chamber needs to be repaired" were ready to postpone the loading till August "or ever later".

The most recent news from Imatran Voima reveals that the authority had applied to charge the set in June, but the Radiation Protection Institute had delayed permission, after cracks had been found in the "inner anti-corrosion coating of the vessel" (presumably the "shield" referred to in earlier statements). These cracks, it was alleged, were due to slag "inclusions". The Soviet suppliers have offered an explanation of these faults.

**Air pollution complaints increase:** The number of complaints about air pollution made against industrial works in the UK increased in 1977 despite an overall reduction in air pollution, according to a Health and Safety Executive report published recently. Mineral works were the worst offenders accounting for 97 of the complaints. The Chief Inspector of HM Alkali and Clean Air Inspectorate, Frank Ireland, said "We receive far more complaints today about far less pollution compared with conditions even 10 years ago when the situation was much worse." More inspections, stricter standards and greater public awareness probably accounted for this increase.

There was also a slower rate of implementation than expected of new emission standards set by the Alkali and Clean Air Inspectorate in 1977 due to the economic depression. Some old plants were kept active to keep staff in employment, particularly in the iron and steel industries, and other industries were allowed longer to implement the new standards so that they could spend scarce resources on creating or maintaining existing jobs. Existing standards, however, were never relaxed and in many cases emissions were considerably better than requirements. *Health and Safety: Industrial Air Pollution 1977*, HMSO (London) £3.

**Pioneer 11 discovers new ring of Saturn:** The Pioneer 11 spacecraft, which successfully flew past Saturn last Saturday, has discovered a fifth ring, the "F" ring, lying outside those already known and circling the planet. Attempts to find evidence of a broader, more diffuse "E" ring have given only ambiguous results so far. The gap between the "A" and "F" rings has now been labelled the Pioneer Gap. Photographs returned from the spacecraft also indicate the presence of a dark blue jet stream with greenish tinges near Saturn's north polar region and of a possible new satellite. The satellite which appears faintly in photographs has yet to be positively identified: it may be a newly discovered moon or possibly some known satellite appearing unexpectedly.

**Short wave radio fools Fire Brigade:** A short wave radio in the Israeli Embassy in London is now thought to be the cause of the radiation detected recently at Kensington Fire Station (30 August, page 715). The National Radiological Protection Board called in by the London Fire Brigade found no unusual levels of radiation and thought interference from radio waves may have caused the fire brigade equipment to register radioactivity.