Nuclear reprocessing

Sellafield threatened with closure within a year

THE management of Britain's only nuclear reprocessing plant, at Sellafield in Cumbria, has been given a year to improve the safety of the site or face closure.

The stern warning has been issued by the Health and Safety Executive (HSE), the licensing authority for the site, after an audit which it describes as "one of the most thoroughgoing physical examinations ever carried out in the UK at one time on any complex plant". The management of the complex, now operated by British Nuclear Fuels Limited (BNFL), is under no illusions about the seriousness of the findings, says HSE.

According to Mr John Rimington, HSE's director general, last week: "Our findings are not recommendations; they will have to be implemented. They match the comprehensive nature of the review. We intend that they should be carried out without delay".

HSE says that the BNFL management has attempted to improve the safety of the processing plant, which is on the site of Britain's oldest nuclear power station. But since 1979, there have been 672 'incidents' at Sellafield. The improvements have not been enough, concludes HSE. According to Rimington: "The main policies and priorities pursued by BNFL in improving the plant seem to us to have been the right ones. But the application of these priori-

ties has reduced the attention paid to potentially hazardous parts of the older plant. Some of these do not yet come up to the scrupulously high standard we demand of the nuclear industry."

One of the most 'hazardous' parts of the plant worrying HSE is the central area/building which performs the initial reprocessing, B205. The executive intends to put political pressure on BNFL to conform and Sellafield's operating licence will be amended to ensure that the improvements are implemented.

HSE gave particular attention to the

five incidents this year which caused disquiet and, in part, provoked the audit:

- 23/24 January — discharge of uranium into the sea;
- 5 February — leak from the central reprocessing complex B205;
- 13 February — fire on site;
- 18 February — pipe leak;
- 1 March — spillage of plutonium fuel pellets and subsequent contamination of contact surfaces.

The reprocessing complex at Sellafield is the home for more than 90 per cent of the radioactive waste produced by non-military power generation in the past 30 years. There are 16 reactors in 11 Magnox nuclear power stations in the United Kingdom. The uranium fuel rods of these reactors, enclosed in magnesium alloy containers or cans (Magnox), are stored in cooling ponds at the power stations before transportation to Sellafield; both rods and containers are subject to corrosion.

The chemical separation of the re-usable elements of uranium and plutonium leaves high-level radioactive waste that is stored on site. HSE concluded that as long as this waste remains in liquid form, it can leak and "presents a hazard to those who work there, and potentially to the public or the environment". Less active low-level waste is discharged into the sea or atmosphere or is buried at the Drigg site nearby.

Bill Johnstone

Chernobyl

Polish fallout underestimated

POLAND's official report on the Chernobyl disaster, published in a limited edition a few weeks ago, makes no mention of the consistent under-reporting of radioactive iodine contamination during the first few weeks after the accident. Nor has the International Atomic Energy Agency (IAEA) or the World Health Organization (WHO) been notified of the error, which is therefore perpetuated by the fallout maps produced by those organizations. The story has, however, been reported by several underground bulletins, notably Wokopach, the newsletter of pro-Solidarity nuclear scientists. The initial error was a genuine one. The emergency on 29 April, was originally set up in the 1960s to deal with the aftermath of a possible nuclear war, and its outdated procedures for iodine estimation systematically lost up to 75 per cent of the iodine before a reading was obtained. Normally, only a few of the 150 monitoring points operated by the public health service are working at any one time, and as the radio-iodine level was normally close to zero, the procedural error was not observed.

Early in May, scientists carrying out independent tests of fallout noted that their readings were consistently 3–4 times higher than the official figures notified to IAEA. The only exception was the official reading from Katowice, where the public health scientists had access to a new,

sophisticated estimation apparatus from the United States. At the end of May, the public health network notified the error to the special commission dealing with the effects of Chernobyl in Poland.

On learning of the error, the commission decided not to make it public. It justified this decision to its scientific consultants by pointing out that, a month after the accident, the worst danger from radioactive iodine was over (at that time, the commission did not know that emissions from Chernobyl had continued until 6 May), and that to reveal the error would spread unnecessary public alarm. The danger-level for milk had been set at 1,000 Bq, corresponding, at worst, to a true value of 4,000 Bq — and the level set for Vienna was 5,000 Bq.

Whether the commission was justified in keeping the information from the Polish public is a moot point. Withholding the information from IAEA and WHO, however, is much less excusable as both these bodies would surely have appreciated the commission's evident embarrassment over the error and the fear that its revelation might cause panic. Even less understandable is that the story of the error was suppressed in the official report, a publication for official distribution only. *Nature's* attention was first drawn to the matter by a government press spokesman, Mr Jerzy Urban.

Vera Rich