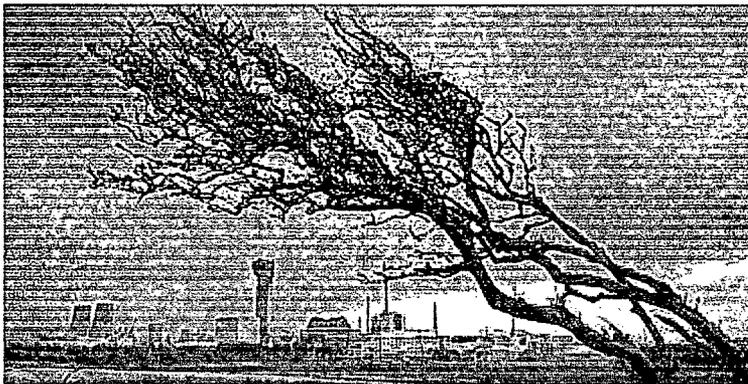

guardian.co.uk

Huge radioactive leak closes Thorp nuclear plant

Paul Brown, environment correspondent
The Guardian, Monday May 9 2005



Sellafield nuclear processing plant. Photograph: Christopher Furlong/Getty

A leak of highly radioactive nuclear fuel dissolved in concentrated nitric acid, enough to half fill an Olympic-size swimming pool, has forced the closure of Sellafield's Thorp reprocessing plant.

The highly dangerous mixture, containing about 20 tonnes of uranium and plutonium fuel, has leaked through a fractured pipe into a huge stainless steel chamber which is so radioactive that it is impossible to enter.

Recovering the liquids and fixing the pipes will take months and may require special robots to be built and sophisticated engineering techniques devised to repair the £2.1bn plant.

The leak is not a danger to the public but is likely to be a financial disaster for the taxpayer since income from the Thorp plant, calculated to be more than £1m a day, is supposed to pay for the cleanup of redundant nuclear facilities.

The closure could hardly have come at a worse time for the nuclear industry. Britain is struggling to meet its target of cutting greenhouse gas emissions by 20% of 1990 levels by 2010, despite a substantial programme of wind farm construction, while generating capacity will also be hit by the rundown of some of Britain's coal-fired power stations.

A leak of a briefing paper to ministers on the nuclear option yesterday revealed that the contribution new nuclear capacity could make to cutting greenhouse gases had not yet been considered because of opposition from Margaret Beckett, secretary of state for environment, food and rural affairs.

The Nuclear Decommissioning Authority, a quango which took over ownership of the plant from British Nuclear Fuels on April 1, has a £2.2bn cleanup budget for this year, its first year of operation, of which £560m was to come from the Thorp plant.

Richard Flynn, spokesman for the NDA, said: "If the income from the plant is not forthcoming then obviously it will put back plans for cleaning up."

On Friday the British Nuclear Group, a management company formed to run the Sellafield site on behalf of the NDA, held a meeting with the government safety regulator, the Nuclear Installations Inspectorate (NII), to discuss how to mop up the leak and repair the pipe. The company has to get the inspectors' approval before proceeding.

A problem at the plant was first noticed on April 19 when operators could not account for all the spent fuel that had been dissolved in nitric acid. It was supposed to be travelling through the plant to be measured and separated into uranium, plutonium and waste products in a series of centrifuges. Remote cameras scanning the interior of the plant found the leak.

Although most of the material is uranium, the fuel contains about 200kg (440lb) of plutonium, enough to make 20 nuclear weapons, and must be recovered and accounted for to conform to international safeguards aimed at preventing nuclear materials falling into the wrong hands. The liquid will have to be siphoned off and stored until the works can be repaired, but a method of doing this has yet to be devised.

The company has set up a board of inquiry to find out how the leak occurred. The NII will set up a separate investigation and has the power to prosecute if correct procedures have not been followed.

The Thorp plant produces uranium and plutonium from spent fuel in such large quantities that only a tiny proportion of it can ever be reused for reactor fuel. Its critics also claim it is uneconomic because it has never operated to design capacity since it opened 12 years ago, and is years behind schedule in fulfilling orders.

This has angered some customers and the British Nuclear Group is embroiled in a court case with one of its customers, the German owners of the Brokdorf power station, which is withholding fees of £2,772 a day for storage of spent fuel, claiming it should have been reprocessed years ago.

In 12 years Thorp has reprocessed 5,644 tonnes of fuel from its first 10-year target of 7,000 tonnes. Last year it failed to reach its target of 725 tonnes,

Martin Forwood, of Cumbrians Opposed to Radioactive Environment, said the NDA had been "naive" in placing trust on income from Thorp, given its track record. "Reprocessing is blatantly incompatible with the official cleanup remit of the NDA, which will now find itself out of pocket as a result of the latest Thorp accident. The new owners would do the taxpayer the greatest service by putting Thorp out of its misery and closing it once and for all."

The managing director of British Nuclear Group, Sellafield, Barry Snelson, who ordered the plant to be closed down, said: "Let me reassure people that the plant is in a safe and stable state."

guardian.co.uk © Guardian News and Media Limited 2008