Crisis deepens over British nuclear reprocessing plant

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The Sellafield nuclear reprocessing plant in Britain continues to be the focus of international alarm over the production and storage of nuclear waste and reprocessed fuel.

The crisis at British Nuclear Fuels Ltd (BNFL) began to emerge last September after the *Independent* newspaper published reports that staff at its Sellafield plant had falsified data relating to MOX fuel pellets. The Japanese, German, Swedish and Swiss governments all subsequently banned imports from Sellafield. A subsequent report by the usually tame Nuclear Installations Inspectorate was heavily critical of the Sellafield management's safety record.

The resulting outcry has forced the Blair government to delay the plant's privatisation until after the next General Election.

On March 22, US Energy Secretary Bill Richardson announced that the American government was sending a team to investigate safety at Sellafield. Richardson said, "business as usual is over with BNFL". The company had previously been accused of safety breaches in the US, where it is the principal contractor in cleaning up old nuclear weapons sites. A serious breach in US relations would be disastrous for the company, which currently has contracts with the US government worth £6.2 billion.

Verification of some of these contracts is due in August 2000. BNFL still hopes to win a substantial share of the US programme—worth an estimated £55 billion over 75 years. According to the *Guardian* newspaper , four US Department of Energy officials involved in awarding contracts to BNFL have subsequently been appointed as BNFL executives.

Richardson's announcement coincided with US Congress approval for the use of Yucca Mountain in the Nevada desert, to be used for storing up to 77,000 tons of nuclear waste from 103 US civilian and military reactors. The site, 90 miles north of Las Vegas, will not be available until at least 2010. Moreover, it would have to remain geologically stable for 10,000 years to allow the radioactive materials to decay without escaping into the environment. A temporary storage site is to be used in the meantime. Before the approval of the Yucca site, BNFL had expressed interest in transporting waste materials from the US for storage in Sellafield.

On March 24 leaders of the isolated Fukai province, which hosts 15 of Japan's 51 nuclear reactors, stated that they would block any future BNFL work unless the company arranged the return of the MOX fuel consignments implicated in the falsifications row. This could take years to organise and the plutonium-based fuel would have to be heavily guarded at all stages on a route that passes through the coastal waters of countries hostile to nuclear power.

Despite considerable popular opposition to the nuclear industry, the Kansai Electric Power Co., which imported the MOX for its Takahama reactor, is investigating other potential sources of the fuel. Japan has become heavily dependent on nuclear power, which provides 36 percent of its overall energy requirements. Sixteen to twenty new plants were planned, although in the light of the Tokaimura accident this has been reduced to thirteen. Kansai and BNFL are hoping that the present crisis will blow over and MOX shipments can resume.

The Blair government is due to publish a much-delayed paper on its long-term perspective for nuclear waste storage this spring. Should the government be unable to convince prospective customers of BNFL's future good behaviour, it is likely that reprocessing at Sellafield will be wound down. Its complete closure is excluded because there are several other reactors and hundreds of storage buildings and tanks that will require supervision for hundreds, if not thousands of years.

Underlying BNFL's problems is the changed situation following the end of the Cold War. The nuclear industry, which had previously provided the raw material for nuclear bombs, was highly integrated into the state structures of the countries in which it operated. In Britain, the civilian nuclear power programme developed alongside the military need for plutonium was heavily subsidised by the state and protected from public scrutiny. Sellafield, initially called Windscale, emerged at this time as the main centre for nuclear fuel

reprocessing.

Even now, many years after the last nuclear power station was commissioned, nuclear power provides 25 percent of Britain's energy needs. In France the figure is as high as 75 percent.

Beginning with the Thatcher Conservative government, the industry was required to become profitable. BE, which operates eight advanced gas cooled and pressurised water reactors, was finally sold off in 1996. BNFL, which retained the UK's older Magnox reactors, remained state owned.

The end of the Cold War radically altered the demand for military plutonium. BNFL conceived of MOX fuel production at Sellafield as a means of unloading its stockpile of plutonium onto potentially lucrative markets worldwide. BNFL also attempted to court new markets in waste storage and management.

On winning office in 1997, Labour took forward plans to sell off BNFL. Now both wings of its nuclear privatisation strategy are collapsing at once. Outside of Japan, nobody wants MOX fuel and Japan is presently unable to accept it. Moreover, waste storage at Sellafield is becoming too expensive. The facility is increasingly seen as a liability. Even without new environmental disasters, the facility's estimated decommissioning costs run to tens of billions of pounds.

In addition, numerous reports document the spread of radiation originating in Sellafield. One of the most alarming was commissioned by the environmental group Greenpeace from the University of Bremen. According to a Greenpeace press release in 1998 this study found that some "figures for radioactivity at Sellafield are even higher than those for the Chernobyl area. Pollution with the americium-241 radioactive isotope in a soil sample 800 meters from the reactor in the Chernobyl disaster, for example, is around 1,300 becquerels per kilogram. In soil sampled 11 kilometres away from the Sellafield plant, pollution from this isotope is as much as 30,000 becquerels per kilogram. The analyses also found cobalt-60 values of up to 40 becquerels per kilogram, and pollution from cesium-137 in concentrations of up to 9,400 becquerels per kilogram. At the same distance from the Chernobyl reactor, on the other hand, fewer than 10 becquerels of cobalt-60, and approximately 7,400 becquerels of cesium-137, were measured per kilogram."

For 30 years Sellafield dumped waste into the Irish Sea. More than 60kg of plutonium it discharged has never been accounted for, giving rise to speculation that is has either been washed around the world, or deposited on local beaches.

Another Greenpeace survey found that plutonium levels at the end of the Sellafield waste pipe were 10 times higher that those at Russian underwater nuclear test sites. Iodine 129—a radioactive isotope from the plant—has been found in Siberia and Northern Canada. Ten times more caesium 137 presently pollutes the Arctic from Sellafield than from Chernobyl. Seafood caught off Oslo has been found to contain Sellafield radiation.

Though the company rejects accusations that it is responsible for local clusters of leukaemia and other radiation-related diseases in the plant's vicinity, it routinely pays 20 percent of all compensation costs to any Sellafield worker who contracts cancer.

Yet in the midst of BNFL's latest crisis, Labour announced that the company would take control of the nuclear weapons factory at Aldermaston in Berkshire, because of the lax safety record of the site's current contractors, Hunting Brae. Aldermaston has also been a prominent focus of environmental and anti-nuclear campaigners over many years. Last year, Hunting Brae were fined after two workers were contaminated with plutonium. In December 1999 they were again charged a nominal £17,500 for discharging radioactive products into a tributary of the Thames.

Just two months earlier, the *Observer* published internal documents indicating that there had been eight breaches of safety rules intended to prevent critical masses of fissile material being brought together. This follows a near calamitous incident in 1993 when plutonium shavings from warhead construction collected, unnoticed by operators, in an oil tank underneath a lathe used to mill the plutonium. Had enough plutonium collected, it would have triggered a nuclear reaction and possible explosion. The filings were only discovered by accident.

Other 1999 incidents involved mislabelled explosive containers, lack of fire fighting equipment, workers sent into radioactive areas with faulty respiratory equipment, power failures and additional cases of environmental contamination.

BNFL's take-over will result in a loss of 1,400 jobs, with 10 percent of the workforce going almost immediately. The contract is worth £2.2 billion to BNFL and its partner Lockheed Martin, and is intended to run for 10 years.