GREENPEACE

August 2002

NUCLEAR POWER: The new threat

Behind Closed Doors

In May 2002 the government began a consultation process to decide how the UK's future energy needs could be met.

The nuclear industry are keen to build at least ten more nuclear power stations, and despite the apparent openness of the consultation process most of the real consultation already seems to be taking place between the government and the nuclear industry lobbyists.

- Setting weak targets for renewable energy: An earlier government think tank report recommended a timid 20% target for renewable energy, which was greeted with disappointment by wind and solar companies.[1] The consultation document issued by the Department of Trade and Industry does not ask whether this is the right target and implies that even 20% may not be adopted. [2]

- Forcing nuclear power back on the agenda: The question of whether or not we should have more nuclear power is ignored. The DTI instead asks questions about nuclear power in terms of how to make it more acceptable to the public and more attractive to investors.

- Burying Nuclear Waste: The important issue of nuclear waste is side-stepped, as being 'dealt with' by a separate consultation. In truth there is no long-term solution to what to do with nuclear waste and the government's Radioactive Waste Management consultation is not due to report until 2007.[3]

- Undermining Democracy: Attempts have been made behind the scenes to undermine the planning process to remove the right to public enquires on issues such as nuclear power stations. In addition, the nuclear industry is lobbying for more relaxed regulatory regimes for licensing new nuclear reactors and regulating the operations of the industry. These matters have been discussed internally at the DTI.[4]

---

[1] Cabinet Office, Performance and Innovation Unit Report – February 2002.
[2] Energy Policy – Key Issues for Consultation – Department of Trade and Industry – May 2002.
[3] Managing the Nuclear Legacy –Department of Trade and Industry White Paper– July 2002
[4] DTI internal document (restricted) 14th June 2001

- Restructuring British Nuclear Fuels Ltd: The government's Liabilities Management Agency has removed the £40.5 billion nuclear waste and decommissioning liabilities from British Nuclear Fuels Ltd and dumped it on the taxpayer to pave the way for it to be at the forefront of building new nuclear power stations.[5]

There are, however, lots of issues that they don't talk about in public.

The Unsolved Problem of Nuclear Waste

50 years into the era of nuclear power and one vital question still remains unsolved – what do we do with the 500,000 tonnes of radioactive waste?[6]

Highly radioactive spent nuclear fuel ends up at British Nuclear Fuel's (BNFL) Sellafield plant where they are "reprocessed." This was summed up by British Energy, an unwilling "customer" of BNFL: "…reprocessing is an economic nonsense and should stop straight away."[7] It also an environmental nonsense as it creates 180 times the waste by volume of the original spent nuclear fuel.

The nuclear industry also creates High and Intermediate Level Wastes (HLW and ILW) in solid, semi-solid and liquid form – radioactive enough to require careful shielding for the workers who have to deal with these wastes. There is a huge backlog in dealing with these wastes properly. In 1998 (the most recent official figures) only 12% of ILW had been conditioned by mixing with cement or molten glass[8]. Unconditioned waste sludges are held in storage at nuclear power stations around the country.

Nuclear power stations receive government licenses to discharge wastes into the atmosphere and into the seas. Questions have long been raised at the continual pollution of our atmosphere and concern for the state of our rivers and seas. Reprocessing spent nuclear fuel has made the Irish Sea the most radioactive in the world. Greenpeace believes that the continual pollution of our seas and atmosphere is dangerous and unacceptable.

---

[5] Managing the Nuclear Legacy –Department of Trade and Industry White Paper– July 2002
[6] Environment Minister, Michael Meacher PQ answer 31/1/02.

[7] Michael Kirwan, Finance Director, British Energy – *Independent* – May 2000.
[8] Radioactive Waste Management Advisory Committee Report – "Current arrangements and requirements for the conditioning, packaging and storage of ILW" – June 2002.

There is no long-term solution to the problem of where to put our nuclear waste and there are no disposal routes for HLW or ILW. Allowing the industry to build ten more nuclear power stations would nearly double the amount of the most dangerous radioactive wastes we have to deal with. [9]

Public Health

Concern over the long term effects of radioactive discharges into the environment are well documented. The cumulative effect of these discharges is not as certain as the nuclear industry would like you to believe. For example, this year the NRPB issued a report stating that people eating fish contaminated by Tritium face twice the dose of radiation that was previously assumed.[10]

Even minute doses of radiation, inhaled or eaten in contaminated food, can cause cancer and other serious health problems. For instance, the children of men exposed to radiation while working at Sellafield nuclear plant have twice the risk of developing leukaemia.[11]

Accidents

The history of the nuclear industry is one of accidents, emergencies and disaster. The public rarely gets the full story. Nuclear power is simply another accident waiting to happen. The disaster of Chernobyl reminds us of what can happen when things really go wrong. The UK has not been immune from nuclear accidents, the worst being at Windscale in 1957. There is no room for complacency. Most accidents are the result of human error.

Security

MI5 has recently drawn up a list of terrorist targets that includes the UK's nuclear power plants. It is not obvious what real measures have been taken to counter these new threats. It is each nuclear sites own responsibility to deal with security matters, and it is doubtful if they have the personnel, resources and training to deal with a terrorist attack from land or air.

---

[9] British Energy letter to Greenpeace (1 July 2002-07-23 0 confirms that eight new nuclear power stations would produce 13,000 tonnes of spent fuel uranium; this makes us as dirty as Sizewell B.

[10] Harrison, J D, Khursheed, A and Lambert, B E. Uncertainties in dose coefficients for intakes of tritiated water and organically bound forms of tritium by members of the public. Radiation Protection Dosimetry, 98, 299–311 (2002)

[11] Leukaemia and non Hodgkin's lymphoma in children of male Sellafield radiation workers – Int. Journal Cancer 99, 427-444 (2002)

The most likely methods of attack can range from insider sabotage or theft of materials to outside invasion or assault from truck bombs. The spectre of the September 11th attacks has raised the possibility of strikes by aircraft. Authorities in the USA have indicated that the fourth hijacked plane was heading for the nuclear plant at Three Mile Island in Pennsylvania.

The most likely targets of a terrorist attack might be considered to be the reactor itself, however attacks on nuclear storage facilities, such as those for "spent" nuclear fuel may be more catastrophic.

Many of the UK's nuclear plants were designed in the 1950s and 60s. Despite nuclear industry claims about the integrity of its buildings none of the building designs ever considered or accounted for anything more than an accidental strike by a light aircraft.

One of the most serious attacks could occur on the buildings housing nuclear reactors. Containment buildings are designed to withstand strong impacts, however a simple breach in the integrity of the structure by an aircraft laden with aviation fuel could cause a major release of radioactivity.

Economics Problems for the Nuclear Industry

The cost of producing electricity has recently been in the region of 2.2-2.7 p/kWh. Unfortunately, the government's Cabinet Office report highlighted that the UK's "cheapest" nuclear power station at Sizewell B currently produces electricity at a not very competitive 6p p/kWh. [12] The Cabinet Office report looked forward to 2020 and they projected the costs as follows:

Onshore wind - likely to fall to:	1.5-2.5 p
Offshore wind - likely to fall to:	2-3 p
Nuclear- more uncertain and likely to be around:	2.5-4p

The nuclear industry will have problems raising finance for its plans for new nuclear power stations from the City. When electricity supply markets were deregulated the City rejected nuclear privatisation. The nuclear industry will probably have to lobby for more taxpayer subsidies and pay premium prices for any private finance.

Projects to build new nuclear power stations have many obstacles to overcome, and the nuclear industry has a history of time and cost overruns on their projects. The proposed reactors by BNFL are still

[12] Cabinet Office, Performance and Innovation Unit, Energy Review 2002 – Annex 6

at the drawing board stage, and never tested in actual live operation.

In the unlikely event of the nuclear industry raising the finance and everything going to plan nuclear power will still be more expensive than wind power.

Our Untapped Resource

We have the opportunity to meet the challenge of climate change without the risks of nuclear power or the unsolved and costly problems of radioactive wastes. It is already shown that wind farms are more cost effective, less controversial, and quicker and easier to install and maintain.

The UK has a huge untapped potential for offshore wind generated electricity. We have the opportunity to be a world leader in renewable technology. From existing technology, offshore wind on its own could easily meet all the UK's electricity needs many times over.[13] However the UK currently generates less energy from renewables than every other country in Europe (apart from Belgium and Luxembourg). Germany only has one quarter of the UK offshore wind resource but currently has plans for a programme that is 17 times bigger. Sweden and Denmark are also ahead of us and Denmark gets nearly 20% of its electricity from renewable sources. They have proved the technology works in practice.

Summary: The Real Debate

A recent MORI poll showed that 72% of people prefer the expansion of renewable energy.[14]

Greenpeace believes that it is madness to consider building new nuclear power stations because they are unsafe, uneconomic and unnecessary.

Greenpeace supports renewable energy as it is safe, economic, provides jobs and opportunities and is based on proven technology. Other countries in Europe have already shown us that offshore wind technology works.

[13] Figures form Study of Offshore Wind in the EC, Matties, H.G., et al (1995). JOUR 0072, Verlag Naturliche Energie.
[14] MORI poll undertaken for Greenpeace (17-21 May 2002)

The nuclear industry has created a powerful, influential and self-serving lobby in government out of the public gaze. Greenpeace will campaign against the powerful nuclear lobby in the public domain and on the real issues of environment and the ability to deliver the future energy needs of the UK safely and economically.

For further information please contact Iain McSeveny at Greenpeace on 0207-865-8219.