



**Response to the Consultation on the
DBERR Strategic Siting Assessment
Process**

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Response to SSA consultation

Preamble

Our group is reluctantly taking part in this consultation as we do not accept the Government 2006/07 Energy Review was legitimate. Nor do we accept the new planning regime which takes away the possibility of cross-examining industry experts or bringing our own expert witnesses to give evidence. The SSA and Infrastructure Planning Commission are parts of a process which has removed essential elements of UK democracy which permitted people affected by planning processes such as nuclear new build to have their say on the matter.

The 2003 Energy Review produced a report coming down against nuclear power and promoting renewable energy. Secretary of State, Patricia Hewitt was dismissive of nuclear power in her summary of the report's findings.

In February this year a High Court ruling found the 2006/7 Energy Review which reversed the earlier report was seriously flawed and misleading and required the Government to consult the public again. A group of twenty academics, co-ordinated by Dr Paul Dorfman, said the same thing.

Just weeks ago that consultation was found to be flawed by the ruling body who oversee public consultations.

It is very apparent that the Government has been manipulating its public consultations to produce the result it wanted, not gearing the consultations to listen to the public view.

We would like to add the following criteria to your list of factors excluding a site from nuclear new build. These are not an exhaustive list of criteria but are some that our group considers important.

1. Adverse health impacts.

This issue is of immediate concern to our group as the certainty of its existence has become established by the number of studies, including some that we have commissioned.

Health effects have been observed near several estuary sited reactors: Hinkley, Oldbury (1) and Bradwell (2). Estuaries have the potential to concentrate sea-borne radioactive discharges and contaminate local populations so should be excluded as nuclear sites. This phenomenon may also apply to other coastal sites and the health impact issue should be examined at a strategic level. All likely nuclear sites (as in the Jackson report 2005) are coastal.

At the BERR conference on 4th September, the author of the SSA Environmental Impact Assessment admitted there was not enough information on health impacts from routine radioactive discharges. The German Government recently found a doubling of childhood leukaemias within 5 kilometres of all their modern PWR nuclear power stations (3). Cardiff University this month found that many local people are concerned about the risk of cancer from living near a new reactor.

Our own group has commissioned health studies which show increases in breast cancer and infant mortality near the Hinkley Point site. It appears that the routine authorised radioactive discharges are poured into the local estuary travel with the tide and the heavy particles then rest on the sea-bed. At low tide, when the sea-bed is exposed, the particles are blown downwind where, in the case of Burnham-on-Sea five miles from Hinkley, they may be inhaled by local people possibly over many years. These particles can sit in soft human tissue where they assault local cells, triggering cancer.

We are concerned that the model adopted by the Government to quantify the risk from low-level radiation is based on the risk to Hiroshima victims. The International Commission on Radiological Protection (ICRP) model has extrapolated the results of a single blast of radiation and applied it to those chronically exposed to isotopes by living in proximity to nuclear plants. So when epidemiological studies show higher cancer rates near those sites, the officials profess bafflement. But the ICRP model has been challenged frequently in recent years and a new approach to the hazard should be adopted. (4, 5)

In 2000 Dr (now Professor) Chris Busby found a near doubling of breast cancer mortality in women living in Burnham North (6). Publication of these results appeared to have an impact on BNFL who decided one month later to shut down their ageing Magnox reactor, Hinkley A.

In 2002 a doorstep survey by Parents Concerned About Hinkley and sponsored by Stop Hinkley took place. One third of the population of Burnham North was interviewed about their health. When analysed by Chris Busby the survey showed breast cancer incidence was twice that expected and leukaemia was four times. Kidney and cervical cancers were also shown to be well above expected values (7).

In 2003 the South West Cancer Intelligence Service (SWCIS) responded to these studies and found breast cancer incidence was 24 percent higher than expected over four electoral wards downwind of Hinkley and 33 percent higher in Burnham South (8). But they said they could not link the cancer rates with Hinkley's radioactive discharges. The author of the study was duly co-opted to join the Committee on Medical Aspects of Radiation in the Environment (COMARE) despite no previous radiation health experience.

In 2004 the Committee Examining Radiation Risk of Internal Emitters (CERRIE) pronounced that isotopes could be ten times more harmful than hitherto expected and consideration should be given to the protection of children in particular (4).

In 2005 COMARE published a paper on childhood cancers near nuclear power stations (9). Although they were puzzled to find extra cancer cases near nuclear weapons factories and dockyards, they said there was no effect near civil nuclear

power stations. In fact their study covered a wide 25 kilometre radius around nuclear sites which embraced large towns at the periphery of this radius. Our own studies have only shown an effect at a radius of 8 kilometres so it was surprising that COMARE should throw their net so wide. In the case of Hinkley Point this 'net' included inland towns such as Wells and Taunton as well as more distant but relatively large populations such as Minehead and Weston-super-Mare. These large unaffected populations would have diluted the smaller but significant numbers in the estuary region around Burnham-on-Sea.

In 2008 Dr Busby was commissioned by us to examine infant deaths near Hinkley (10). He found that infant deaths were three times higher than expected in the coastal and estuary wards downwind from Hinkley. SWCIS countered the study with their own which showed no effect. Detailed examination of the SWCIS study showed they had not replicated the Busby study as they had used different wards including one which covered a large area upwind and inland from Hinkley (11).

2. Terrorist attacks

Due to the clear risk of a terrorist attack on a nuclear power station, we suggest that new sites should not exist with a total population greater than 100,000 within 30 miles. This would give a more realistic chance of evacuation of the affected population in the event of a major accident or terrorist attack. As EdF are planning to use 'high burn-up' fuel at its new reactors a breach of containment would have more severe consequences than hitherto.

At a lecture given by John Large of Large & Associates in Bridgwater on 11th October, the audience was told that although the tonnage of spent reactor fuel from a PWR such as Sizewell and a European Pressurised Reactor were similar at 110 tonnes and 130 tonnes respectively, the radiotoxicity of the EPR fuel would be much greater at 60,000 units compared to 30,000 units at Sizewell. The contamination impact from a successful act of terrorism would be that much greater. Dr Large suggested that the engineering challenge of making the reactor unbreechable was quite a challenge and that reactor design was unlikely to have evolved so quickly since the terrorist attacks of 9/11 (12).

Following the 9/11 terrorist attack in New York the International Atomic Energy Authority stated that all 144 nuclear reactors world-wide were vulnerable to a similar attack.

Existing 'Emergency Planning Zones', with pre-distributed iodine tablets, should be extended to this radius from the current typical two or three kilometres. Proximity within 30 miles of an airliner flight path or airport should also exclude a new nuclear site. The Three Mile accident showed that emergency plans are limited by the likelihood of official staff deserting their posts. Only ten percent of medical staff were available to aid radiation victims. It is unthinkable that, if a new reactor was seriously damaged in a terrorist or engineering event, local council staff would knock on the doors of tens of thousands of people to discuss how to take potassium iodate tablets.

The Emergency Plans also require police and front-line services to reroute traffic and effect an evacuation of potentially tens of thousands of people. In a talk

given by Somerset and Avon Police Force at Oldbury power station in 2002, the speaker acknowledged that protective suits required to be worn by police officers might be too frightening to the public and in practice staff might be ordered not to wear them in order not to create panic! The speaker also admitted the suits' protective duration was as little as twenty minutes.

We understand that radiation doses permitted to police officers is lower than doses permitted to other front-line staff such as ambulance-drivers, paramedics, fire-fighters and also council staff, which would all be required to continue attending a nuclear accident while the police would remove themselves from the contaminated area. This disparity is likely to at least lead to disputes and aggravation but also lead to a degeneration of discipline and chaos.

For these reasons our group feels it is inappropriate to build a nuclear reactor, with its small but highly significant risk of spewing a massive discharge of radiation into the atmosphere, close to populations likely to be contaminated by a serious accident. The Chernobyl exclusionary zone is 30 kilometres. As noted above for a different reason a 30 kilometre zone around Hinkley Point for example would include Taunton, Wells, Weston-Super-Mare, Minehead and larger populations of Cardiff and Berry on the South Wales coast.

3. Flooding

Any site considered likely to flood should be excluded. The Met Office 2006 predictions e.g. of sea-level rises at Hinkley of 0.9 metre are probably already out of date given increased probabilities of 100% melt of Arctic ice. Given the planned use of 'high-burn' nuclear fuel, its long-term storage at the plant and uncertainties over its capability of encapsulation, this is a particular concern. Greenpeace in 2007 commissioned a report (13), examining the risks to three existing nuclear sites using the current predictions, showing inundation could occur in certain conditions.

The following quote describes the problem to the west of Hinkley Point where EdF is planning to build two giant reactors:

“The more highly elevated land to the west of the current site boundary would in general provide a relatively more resistant site. However, given that the cliff line in this area is currently subject to erosion, and that the rate of erosion may increase over the life and decommissioning of a new power station, the reality is that the site is not a feasible option.”

This particular problem could be made worse if, as the US safety regulators suggest, the spent 'high burn-up' fuel cannot be encapsulated as soon as expected to be dispatched for long term storage or disposal and may require thirty years of pond storage instead of five as at present. This effect could delay the eventual decommissioning of the nuclear plant, pushing the decommissioning process into a time-span where coastal erosion is signalled to occur at the Hinkley EdF site.

Oldbury nuclear power station was cut off by rainwater flooding for six hours in 2003. A recurrence would render the site inaccessible to emergency services. In 1604 the area around Oldbury was impacted by the UK's biggest tsunami. The surge swept up the Bristol Channel and swamped a large area of South

Gloucestershire, Avon and Somerset. The existing cooling water ponds at Oldbury nuclear power station were originally carved out by the devastating impact of the tsunami.

4. Areas of Amenity

Impact on neighbouring areas of amenity and landscape: The views from many parts of the popular Quantock Hills would be permanently impaired by building giant nuclear reactors within eyeshot.

Sites adjacent to Areas of Outstanding Natural Beauty or similar should be excluded for nuclear build.

5. Impact on local ecology

Sledge-fishers near Hinkley have estimated a 75% reduction in their catch since Hinkley began operating due, they speculate, to artificially raised water temperatures.

Sites where such ecological impacts have been recorded should be excluded.

References

Mostly one or two page summaries of the case made in the text, with fuller references included:

- (1) Cluster of Childhood Leukaemia and Cancer in Chepstow similar to Seascale, www.llrc.org
- (2) www.llrc.org/bradwellbreastcancermortality
- (3) <http://www.stophinkley.org/Health/HlthNews080110C4.htm>
- (4) Dose is meaningless, www.llrc.org/index
- (5) www.stophinkley.org/Health/ICRPMModel
- (6) <http://www.stophinkley.org/Health/HPCanClustGrnAud.htm>
- (7) <http://www.llrc.org/health/subtopic/burnham.htm#ref1#ref1>
- (8) www.llrc.org, New Cancer Registry figures confirm excess risks in Burnham on Sea
- (9) <http://www.comare.org.uk/documents/COMARE10thReport.pdf>
- (10) <http://www.stophinkley.org/PressReleases/pr080229.htm>
- (11) <http://www.stophinkley.org/PressReleases/pr080306.htm>
- (12) <http://www.largeassociates.com/Hinkley/Hinkley%20-%20October-final-summary.pdf>
- (13) <http://www.greenpeace.org.uk/files/pdfs/nuclear/8179.pdf>