

**Response to NDA  
Consultation on  
a Framework for Sustainability  
Appraisal and Environmental  
Assessment for  
Geological Disposal**



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November 2008**

## **Introduction**

Our group is concerned and alarmed at the speed and progress that is being made by the Government in seeking to build a Deep Geological Repository.

We note that already Copeland Borough Council together with Cumbria County Council are in the process of making an 'Expression of Interest'. The latter seems to be bounced into this process in order not to be outflanked by Copeland in its moves to get the Deep Repository installed in its neighbourhood thereby picking up a part of the astonishing bribe of £1 billion the Government has put on offer.

We feel that this process is completely back-to-front and discredited:

### **1. Community enticements vs geological suitability**

It is not clear that the Sellafield geology is entirely suited to a Deep Repository where faults are considered to exist. As the nuclear waste to be managed has an exceedingly long half-life and will be dangerous for hundreds of thousands of years, it does not seem at all prudent to invite local communities to express their interest in areas where the geology is unstable. This is especially the case in an area that was ruled out in the NIREX inquiry. Communities, or more accurately their councillors, often elected by a minority of local residents, cannot be asked to forgo the health and safety of future generations hundreds and thousands of years into the future, especially with the short-term enticement of ready cash for the council to use. Poor rural councils are more likely to apply for this funding.

We are concerned at the amount of time and money resources by local authorities, including those near Hinkley Point, being put into chasing cash incentives for nuclear waste programmes at this premature moment in time. A West Somerset Council Cabinet directive (1) last year promoted a plan for it and neighbouring Sedgemoor District Council to apply for cash incentives from the industry for a low level waste site. The same paper suggested incentives could be available for commissioning (i.e. generating) radioactive material as well as decommissioning. We feel that the incentives for low level waste sites as well as Deep Geological Repositories amount to a bribe, effectively paid to the council and not necessarily to the people and only in the immediate generation and not to those a thousand years in the future who will no doubt reap the disbenefits of their ancestors' enterprise.

### **2. Robust Research and Development not established**

The research and development has not yet been completed into the viability of Deep Geological Repositories. CoRWM in its concluding report said that much research must be undertaken into the security and other issues surrounding Deep Disposal before any commitments are undertaken to proceed. On this issue we support the views expressed in her response to this same consultation by former NIREX expert Dr Rachel Western. We gather from Dr Western that there is a serious likelihood that hydrogen gas and radioactive carbon 14 would be generated within the containers of spent fuel and High Level Waste and which would in due course find their way out of the

packaging, cracking the containment, and building up pressure within the repository to the point where it would break through the repository's containment.

This process would allow radioactive gases to permeate the ground, rising upwards and into the local environment, contaminating local people. Moreover the containment at two levels, the individual containers and the repository, would be breached. This is very serious and would undermine the basic principle that the repository should be sealed in perpetuity, which has been put forward by its advocates. Water from local aquifers could consequently enter the repository, accelerating the corrosion of the individual containers. I understand from the Environment Agency that humidity should be controlled at all costs in a Deep Repository for this reason. Water leaving the repository would become increasingly contaminated and could migrate many miles from the actual site before surfacing and polluting local land and waterways. Whole areas or a region could be made uninhabitable. Future generations may not have the technology or resources to repair the leaks and damage nor possibly even to detect that a leak has occurred.

We understand that fresh doubts have arisen on interpreting research on the Swedish repository model as relevant to a UK repository. Apparently the differing geologies have an important impact on the viability of importing the approach to the UK model.

A recent piece of news has indicated that Intermediate Level Waste cannot be accommodated in the same repository as High Level Waste for technical reasons.

Two months ago the Environment Agency noted that existing steel containers will not be suitable for long-term storage or Deep Disposal even though tens of thousands are in use or ready to be used.

Until the research into these pressing and serious issues has been fully addressed, probably requiring many years of work, then the NDA process should bring to a halt the beginnings to the planning process already in train.

## **New build vs legacy waste**

Former Chair of CoRWM has repeatedly and emphatically stated that the committee's recommendation for Deep Disposal was made on the remit of managing existing 'legacy' nuclear waste, arising from plants already built and expected to be decommissioned. He emphasised that his committee did not examine the new idea of how new build waste should be dealt with. He added that his committee's outcome should not be viewed as a green light to proceed with nuclear new build for which a process for dealing with its waste has not been thought through as a separate entity: there are fresh ethical considerations to producing even more waste which were different from deciding on what to do with what has already been produced and must, one way or another, be managed and planned for.

Although our group, along with other NGOs and community groups, does not agree with CoRWM's recommendation for Deep Disposal and would much prefer long-term above- or near-surface storage, we feel CoRWM 1 have an

undeniable point regarding new build waste and we concur with it. It is completely unethical to build new nuclear power stations knowing they will burden future generations with a) the cost, probably, and b) the risks, certainly associated with nuclear waste from meeting our own short-term electricity needs. The NDA, with its aim to clean up nuclear sites as a public benefit, should a) shed its current involvement in nuclear new build e.g. in selling its land to energy companies for this purpose and b) resist involvement in planning for new build nuclear waste.

### **Inappropriate ICRP model to calculate outcome of contamination**

Stop Hinkley has been promoting the investigation of adverse health effects from radioactive discharges in the populations near Hinkley Point and Oldbury for a number of years. Although our commissioned studies consistently show raised cancer, leukaemia and infant mortality levels along the shoreline near the power station sites, local and national authorities have denied any link to the low level radiation.

Dr Chris Busby and the Low Level Radiation Campaign have vigorously contested the International Commission for Radiological Protection model upon which predictions relating radiation dose to health effects have been based. The model does not take account of the many published works, including those in Russian, of the health impact of Chernobyl (2) but instead relies upon sixty year old calculations based on the survivors of the Hiroshima bomb. We contend that living downwind from water- or air-borne radioactive discharges for many years must be different from the survivors of the effects of a single blast where the radiation was relatively quickly dispersed.

The effect of Dr Busby's and others' work on Deep Disposal is that more people are likely to suffer health effects than currently predicted, given the same dose likely to be experienced by those on the receiving end. Even the moderate CERRIE committee report in 2004 said that effects could be ten times that already thought and that vulnerable groups such as children should be afforded better protection.

### **Advice given to our group & local public by CoRWM member**

In October last year a former CoRWM member told a public meeting in Watchet, Somerset of the risks and misunderstandings surrounding the Government's plan to find a site to bury the UK's most toxic nuclear waste. The meeting was organised by Stop Hinkley and West Somerset Local Forum 21.

Over sixty people heard Pete Wilkinson express his concern over the committee's recommendations to bury High Level Waste in a Deep Geological Repository. He emphasised that CoRWM's recommendations for one 'legacy' Deep Geological Repository could turn into two to accommodate new build nuclear waste. Our committee was appalled to hear that, even if geological conditions were not ideal at a specific site, the Government would still be keen to take up an offer from a willing community to host the repository.

Pete Wilkinson, who was a member of the Government's advisory committee for its three years' duration, aired his concern that the committee's parallel recommendations to launch intensive research into safety, health and security issues have been ignored in the Government's rush to deal with the toxic nuclear waste and 'solve' the problem, paving the way for nuclear new build.

He felt that, although it was CoRWM's recommendation, burial is not the best way to manage the waste as there are serious unresolved questions over radioactive leakage and consequent health risks. He said Deep Geological Disposal also lands future generations with a waste system practically impossible to reverse.

Mr Wilkinson, founder member of Greenpeace UK and Friends of the Earth, highlighted important shortcomings which had not been addressed by the Government in its haste to set up a solution to nuclear waste as a precursor to launching a new generation of nuclear power stations. These included:

Despite the one million year activity of the n-waste, its packaging is forecast to corrode and leak within 150 years.

Secondary concrete backfill may fail in the same timescale, leaving the geology as a final barrier.

The Nuclear Decommissioning Authority is so cash-strapped it may omit crucial lining in the Deep Repository.

The cost of a national Deep Repository is estimated at £12 to £20 billion.

Spent fuel from a new generation of reactors would add to the existing 500,000 cubic metre stockpile.

10,000 spent fuel elements, each four metres long, from a future Boiling Water Reactor would need to be cased in three inch thick copper then bound in stainless steel to afford protection at a mammoth cost to the nuclear industry's carbon footprint.

The health risks to communities are calculated on a cost/benefit analysis.

### **Misunderstanding of survey question**

Mr Wilkinson felt that CoRWM had misunderstood the findings of a survey put to stakeholders. A high number of responses had prioritised 'Phased Deep Disposal' as a preferred method compared with 'Permanent Disposal'. He felt the public had listed this preference in order to favour the ability to retrieve the waste packages compared with an irreversible disposal process but this had not been clarified by the committee who mistakenly took the poll as an endorsement of the Deep Disposal plan currently being pushed by the Government. He felt a key issue to the waste management is the ability to remove any waste if you do bury it.

### **Our concerns, summary**

1. The planning process for Deep Disposal is premature and unethical. Time is wasted by councils in chasing funds when neither geological suitability has not been established nor the principle of Deep Disposal been fully researched.

2. Research and Development has not arrived at a point where it is anywhere near sufficiently robust to proceed with plans for Deep Disposal. The safety of future generations is jeopardised by rushing headlong into plans for a repository.

3. The NDA should not be involved in nuclear new build activities such as facilitating energy companies' purchase of NDA land for this purpose nor should it plan for accommodation of new build waste.

4. The ICRP model is outdated. As it would underestimate the health effects from local contamination during the initial phase moving the waste and later with aquifer contamination, the whole health effect impact should be reviewed. We feel this was not tackled by the CoRWM 1 committee.

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30th Nov 2008

#### **Notes**

- (1) Hinkley Point "Common Good Fund" Report No sc 83/07 by Tim Howes, Chief Executive West Somerset Council, 5th September 2007
- (2) ECCR Chernobyl: 20 Years On, Health Effects of the Chernobyl Accident, European Committee on Radiation Risk, Documents of the ECRR 2006 No, Eds: CC Busby (now Professor) and AV Yablokov