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1. Weightman's Review

Greenpeace (1) and the Nuclear Free Local Authorities (NFLA) (2) have both made second submissions to the Office for Nuclear Regulation (ONR) on the Chief Inspector of Nuclear Installations forthcoming report on the Japanese earthquake and tsunami and its Implications for the UK Nuclear Industry.

The NFLA expresses its concern about the speed, length and scope of the ONR inquiry. The Fukushima incident is still ongoing, and it is likely to continue to be ongoing for some months to come. A number of international nuclear organisations, such as the International Convention on Nuclear Safety, are not making specific recommendations until mid 2012 at the earliest (3). A number of other important pieces of research are also only just beginning to be conducted. The NFLA complains that the ONR narrows down its look at Fukushima to concentrate on nuclear safety and nuclear engineering matters. It doesn't look at, for example, damage to the marine environment (4), human and animal health, the ethics of nuclear new build following this incident, the financial implications of the disaster, and implications for nuclear liability insurance and MOX fuel use.

NFLA says there appears to be incongruence between the conclusions and the recommendations in the report, and public comments made by ONR. The recommendations outline a number of very serious issues that need to be resolved by Government, the NDA and the nuclear industry.

Greenpeace highlights several recommendations dealing with Emergency Planning made by the ONR's interim report –including that the Government should consider a review of the Japanese emergency response to identify any lessons for the UK and secondly that the Nuclear Emergency Planning Liaison Group should instigate a review of the UK's national nuclear emergency arrangements in light of the experience of dealing with the prolonged Japanese event. Because there were several recommendations on emergency planning issues, and because the Government is also conducting its own review of such issues as a response to the interim report, the NFLA has initiated a questionnaire on nuclear emergency planning for local authority and fire authority emergency planning units across England, Scotland and Wales. Although the results of this survey will not be ready in time for the ONR's final report, they will be available soon after.

Recommendation 24 on the Interim Report asks the UK nuclear industry to review existing severe accident contingency arrangements and training, giving particular consideration to the physical, organisational, behavioural, emotional and cultural aspects for workers having to take actions on site, especially over long periods. Greenpeace highlights the "*scandalous collusion*" which went on between government officials and nuclear companies to draw up a co-ordinated public relations strategy to play down the Fukushima accident (5) and asks whether the industry be trusted to fully respond to the ONR's recommendations.

Greenpeace accuses the ONR's report of approaching radiation and health in a somewhat arbitrary manner yet this issue is at the heart of concerns many have about nuclear power. It notes that the *objectives* of dose reduction might (under routine operations) result in a dose of only 0.02mSv or even less but could rise to 5mSv or even higher in an accident situation - a 250 fold increase.

On new reactor designs the NFLA highlights an article by Ramana in the Bulletin of Atomic Scientists (6) which concludes that "*there are no reliable tools to predict how the next accident will occur and constructing new reactors using more modern 'safer' designs based on probabilistic risk assessment models that predict lower accident frequencies is not a guarantee of no future accident*".

NFLA also draws to the ONR's attention a report by Dr Helmut Hirsch for Greenpeace International on 'Selected aspects of the EPR design in light of the Fukushima incident'. (7) Hirsch's main conclusion is that the "*...standard of the EPR is generally lower, or at best, equal to that of the German Generation 2 Konvoi plants, which have already been in operation for more than 20 years.*" He says the EPR design fails to allow for a sustained loss of power to cooling systems, and the back-up generators are insufficient to power most of the systems required for a safe cold shutdown. Clearly it is important that Dr Hirsch's report is thoroughly considered by the ONR before production of the final report and before Generic Design Assessment (GDA) process is completed.

(1) Available on request.

(2) Nuclear Safety Report on the Implications of the Fukushima Daiichi Incident – Submission by the Nuclear Free Local Authorities in Advance of the Final Report.

http://www.nuclearpolicy.info/docs/consultations/NFLA_Weightman_final_submission.pdf

(3) Bloomberg, 14th April 2011: <http://www.bloomberg.com/news/2011-04-14/nuclear-regulators-delay-study-of-fukushima-lessons-until-2012.html>

(4) The NFLA submission includes two annex's by marine pollution consultant, Tim Deere-Jones.

http://www.nuclearpolicy.info/docs/consultations/NFLA_Weightman_submission_annex.pdf and

http://www.nuclearpolicy.info/docs/consultations/NFLA_Weightman_final_review_comments_addendum.pdf

(5) Guardian 30th June 2011 <http://www.guardian.co.uk/environment/2011/jun/30/british-government-plan-play-down-fukushima>

(6) M.V. Ramana: 'Beyond our imagination – Fukushima and problems of assessing risk', Bulletin of Atomic Scientists, 19th April 2011. <http://www.thebulletin.org/web-edition/features/beyond-our-imagination-fukushimaand-the-problem-of-assessing-risk>

(7) H.Hirsch, A.Y.Indradiningrat and T. Wienisch: 'Selected aspects of the EPR design in light of the Fukushima incident', June 2011, report for Greenpeace International.

http://www.greenpeace.org/france/PageFiles/266521/EPR_Report_Greenpeace.fr.pdf

2. EPR Safety Concerns

The French nuclear safety watchdog has asked EDF to fix a series of “*gaps and weaknesses*” in its €6bn European Pressurised Water Reactor (EPR) being built at Flamanville in Normandy, putting more pressure on a programme already beset by spiralling costs and delays. In a letter to the company, sent at the end of June, the country’s atomic watchdog highlighted 13 areas of concern. (1) The report was sent after a team of inspectors visited the site and some of the companies and subcontractors building the plant – including EDF and Areva – between March and May. Jean-Luc Lachaume, deputy director-general of the nuclear safety authority, told EDF that “*given the gaps and weaknesses identified during this inspection review, we consider that [the company] will have to make great efforts to demonstrate the final quality of the construction of Flamanville 3*”.

Meanwhile the UK’s Office for Nuclear Regulation (ONR) says it is continuing to monitor information from its foreign counterparts after safety concerns were raised about construction processes at the Taishan plant – an EPR being built in China. The concerns mirror some of those raised at sites in France and Finland. A report on the site which was compiled immediately before building started, warned the Chinese plant’s managers that “*quality control of concrete pouring should be strengthened*” and they should make proper preparations for wet weather, which can affect the construction process. The report, apparently put together by safety inspectors, also highlighted concerns that the rock underlying part of the site has “*relatively pronounced fractures*”, a lack of experienced personnel onsite due to the “*fast pace*” of the project’s progression, and fears over the availability of important documents related to construction, among other concerns. (3)

- (1) FT 24th August 2011 <http://www.ft.com/cms/s/0/82db34a6-ce66-11e0-b755-00144feabdc0.html>
Also see Le Monde 24th August 2011 http://www.lemonde.fr/planete/article/2011/08/24/l-autorite-nucleaire-painte-des-faiblesses-du-reacteur-epr_1562823_3244.html
Stop Hinkley Press Release 26th August 2011 <http://www.stophinkley.org/PressReleases/pr110826.pdf>
- (2) Letter from ASN to EDF 24th June 2011
<http://www.asn.fr/index.php/content/download/30447/195294/version/1/file/INSSN-DCN-2011-0649.pdf>
- (3) Independent 10th September 2011 <http://www.independent.co.uk/news/uk/home-news/report-raises-concerns-over-safety-of-nuclear-plants-2352222.html>

3. Another New Reactor Design?

In what sounds like a triumph of optimism over common sense GE Hitachi says it is planning to submit an application for a UK Generic Design Assessment for its ESBWR reactor design in the first or second quarter of next year. The U.S.-Japanese joint venture had initially planned to apply for regulatory approval for its ESBWR reactor in June 2011, but Britain’s nuclear regulator said its resources were too stretched assessing Westinghouse’s AP1000 design and Areva’s EPR to accept another application. (1)

Westinghouse says it is not expecting Mike Weightman’s report on nuclear safety post-Fukushima to hold any unpleasant surprises and said there would be no “showstoppers” affecting the eventual licensing of its AP1000 design in Britain as the final phase of the Generic Design Assessment approaches. However the company will hold back on carrying out some of the final work needed for reactors to be licensed until it has secured an order from Horizon Nuclear Power to build the AP1000 at Wylfa. Horizon’s decision on which reactor-type to plump for – the EPR or AP1000 – is not expected until the end of the year. The work that is being put on hold is “low risk”, said Westinghouse, but substantial and therefore expensive. (2)

- (1) Reuters 15th September 2011 <http://uk.reuters.com/article/2011/09/15/uk-ge-hitachi-nuclear-idUKTRE78E4IJ20110915>

- (2) Professional Engineering 15th September 2011 <http://profeng.com/news/new-nuclear-should-go-ahead-as-planned>

4. Judicial Review

Greenpeace UK has served legal papers on the government for unlawfully failing to take into account the implications of the Fukushima nuclear disaster in their future planning for the building of new nuclear power stations. In a 1611 page legal submission to the High Court, Greenpeace is seeking a Judicial Review of the government's decision not to take into account specialist advice on the implications of the Fukushima disaster on future reactors, which it has an obligation to do.

The group contends that climate change secretary Chris Huhne unlawfully pressed ahead with the National Policy Statement, adopted last month after a Commons vote, "*without waiting to take into account relevant considerations arising from the Fukushima disaster*". The submission says the government appears to have regarded Dr Mike Weightman's Interim Report into the lessons from Fukushima as a 'green light' to proceed with the Nuclear National Policy Statement even though that the report highlighted areas of serious concern requiring further investigation and that Dr Weightman's review remains ongoing. Communications between government officials and nuclear companies seems to show that there was no real intention to properly consider the implications of Fukushima with an open mind and the Secretary of State has failed to fully consider all the risks of flooding to a nuclear site despite the evidence of how flooding affected operations at Fukushima. (1)

A spokesman for the energy and climate change department (DECC) said: "*We are confident that the designation of the Nuclear National Policy Statement was lawful.*" (2) Angus Walker says on his Planning Act Blog the two volumes of the Nuclear NPS are a mere 344 pages compared with the Greenpeace submission which runs to 1611 pages. "*If you are going to throw a spanner in the works, you may as well make it a big one*". He says it is interesting that the Greenpeace case all seems to relate to Fukushima - does that mean that Greenpeace would have left the NPS alone if Fukushima hadn't happened? (3)

The High Court has already awarded a judicial review against the Hinkley project to Innovia Cellophane, which owns a disused factory next to the proposed site in Somerset. EDF Energy wants to build temporary accommodation for 1,000 workers on land adjoining its proposed new reactor at Hinkley Point in Somerset. But Innovia owns the 50 hectare site and has already been given the go-ahead to build a school, hundreds of homes and playing fields on the land. (4)

- (1) Greenpeace UK 26th Aug 2011 <http://www.greenpeace.org.uk/media/press-releases/greenpeace-takes-government-court-over-nuclear-power-expansion-20110826>
 (2) Nuclear Engineering International 30th August 2011
<http://www.neimagazine.com/story.asp?sectionCode=132&storyCode=2060522>
 (3) Bircham, Dyson Bell 31st August 2011 <http://www.bdb-law.co.uk/blog/anguswalker/271-greenpeace-launches-judicial-review-nuclear-power-national-policy-statement>
 (4) Times 19th September 2011
<http://www.thetimes.co.uk/tto/business/industries/utilities/article3168111.ece>

5. Preventing the next Fukushima

Damian Carrington in *The Guardian* looks at a paper in *Science* written by Matthew Bunn and Olli Heinonennd at Harvard University – the latter spent 27 years at the International Atomic Energy Agency including five years as Deputy Director General. The paper analyses what is needed to make the global nuclear power industry safe and secure. It reveals a mountain to climb. They propose six areas of improvement: (a) operators must plan for events beyond design bases (b) more stringent standards for protecting nuclear facilities against terrorist sabotage (c) a stronger international emergency response (d) international reviews of security and safety (e) binding international

standards on safety and security and (f) international co-operation to ensure regulatory effectiveness. (1)

Carrington says:

“It's a clear-eyed assessment, in my view. If these measures were implemented, I'd be pretty comfortable with the safety and security of nuclear power, although the price tag would be great. But my judgement is they will not be.”

Carrington backs renewables and efficiency. Making this work at sufficient scale is of course a huge challenge. But making the nuclear industry around the world safe and cost-effective is a greater one.

- (1) Guardian 16th September 2011 http://www.guardian.co.uk/environment/damian-carrington-blog/2011/sep/16/nuclear-power-waste-safety-iaea?CMP=tw_t_gu

6. Hinkley Point

The Environment Agency is seeking the views of local communities around Bridgwater and Burnham-on-Sea, in Somerset, and parts of South Wales, on applications for environmental permits to operate a new nuclear power station at Hinkley Point. The Agency received two environmental permit applications from NNBSGenCo, a subsidiary of EDF Energy, relating to operation of a nuclear power station on the North Somerset coast at Hinkley Point, across the Bristol Channel from Wales. The applications relate to discharges and disposals of radioactive waste and operation of standby power supply systems. (1)

The work the Environment Agency is doing on the existing Hinkley Point nuclear power stations and the proposed development at Hinkley Point C is detailed on a new page on the Environment Agency's website. (2)

The Environment Agency will review the applications to ensure they contain all the relevant information and consult the public for a period of 30 days, between 25 August and 6 October. A further consultation will be carried out for 12 weeks once the Agency has finished looking at the applications and is ready to make a decision. People will then be able to comment further on what they think the decision should be. This is expected to start in Spring next year, with final decisions made at the end of 2012. (3)

Meanwhile on 23rd August the Bridgwater Mercury reported that EDF could be just weeks away from submitting a planning application for Hinkley Point C. Once the Infrastructure Planning Commission receives the development consent application for a new nuclear power station, it will have 28 days to review the application and decide whether or not to examine it. This will include looking at the accuracy of consultation and documentation in the application. (4) If the application is accepted, the IPC will advise the timescales when interested parties can register to make a representation - this should be a minimum of 28 days. The IPC will have six months to examine the application. Statutory consultees, groups of people and individuals who have registered will be allowed to attend hearings and participate in open floor hearings. Petitions will not be accepted. After the six months, the IPC will then have a further three months to make a recommendation to the Secretary of State. It will not be able to add conditions to the plans. The Secretary of State will then have three months to decide whether it should give EDF permission to build Hinkley C.

Only the day before the Western Daily Press reported that EDF is waiting for the outcome of the official inquiry, compiled by chief nuclear inspector, Dr Mike Weightman, into whether Japan's nuclear crisis holds lessons for the safety of Britain's nuclear industry before progressing. (5)

- (1) Environment Agency 22nd August 2011 <http://www.environment-agency.gov.uk/news/132542.aspx>

- (2) See <http://www.environment-agency.gov.uk/homeandleisure/127159.aspx>
- (3) EA 22nd August 2011 <http://www.environment-agency.gov.uk/news/132542.aspx>
- (4) Bridgwater Mercury 23rd August 2011
http://www.thisisthewestcountry.co.uk/news/somerset_news/9210822.Hinkley_Point_C__The_timeline/
- (5) Western Daily Press 22nd August 2011 <http://www.thisissomerset.co.uk/story-13179425-detail/story.html>

7. Nuclear Subsidy

Hidden subsidies to the nuclear industry in the UK amount to around £3.6 Billion per year according to Ente Consulting. (1) This is the equivalent of 1GW of solar PV installations. These costs are nestled in the budget of several governmental departments - hidden subsidies which will continue to climb as the civil nuclear industry contributes more to its toxic legacy with up to eight new power plants. (2)

The analysis joins a number of other recent studies that tabulate government subsidies to the civilian nuclear industry around the world. A general overview of common subsidy features to the nuclear fuel cycle globally is included as Section III.6 of World Nuclear Industry Status Report 2009. (3) Section III.6.4 in particular (page 81), written by economist Steve Thomas at the University of Greenwich, provides a historical review of nuclear subsidies within the UK. (4)

- (1) The Hidden Cost of Nuclear Power, Ente Consulting 10th June 2011
http://www.enteconsulting.com/home/wp-content/uploads/2011/07/HiddenCostsofNuclearpower_Final1.pdf
- (2) See also Spinwatch 8th Aug 2011 <http://www.spinwatch.org/-articles-by-category-mainmenu-8/67-nuclear/5448-the-p100-billion-hidden-cost-of-nuclear-power>
- (3) <http://www.nirs.org/neconomics/weltstatusbericht0908.pdf>
- (4) Earthtrack 8th Sept 2011 <http://earthtrack.net/blog/nuclear-subsidies-uk>

8. Westminster Manoeuvres II

Our article in NuClear News No.31 covered the debate in the House of Commons about the Finance Bill and the Carbon Floor Price on 5th July 2011. This didn't mention the rather interesting speech by Kerry McCarthy MP, Labour's Shadow Economic Secretary. (1) She said:-

*“The carbon price support rate will actually **provide an effective subsidy to the nuclear industry** ... In fact, it will benefit nuclear power twice as much as the renewables sector ... the Government explicitly promised voters that they would not grant nuclear power stations a public subsidy. ... When we delve deeper, it turns out that this is not the only nuclear subsidy by stealth that the Government are trying to sneak past the House ... the Government's proposed design for feed-in tariffs “seems to be more about concealing the fact that it is providing financial support for nuclear power than it is about coming up with the best approach.” Even if the Government do support public subsidy for new nuclear build, they need to explain why they want to subsidise existing nuclear stations ... The Government [is] **using money taken from people and from energy-intensive industries to subsidise nuclear power stations, which they explicitly promised voters they would not do.** They are also using that money to subsidise existing power stations, which makes no sense. ... The Government's carbon floor price will not do what they said it would do. It is a missed opportunity for the country. We could have seen a new generation of green investment and jobs, but instead we see ordinary people being hit at the time when they can least afford it.” [Emphasis added]*

Meanwhile Luciana Berger, Labour's Shadow Climate Change Minister says more needs to be done to encourage Britain's home owners and businesses to de-carbonise:

“Unfortunately, the government’s finished proposals, called the ‘Green Deal’, are currently severely delayed in parliament, amid significant doubts about the scheme’s viability. As a result households up and down the country cannot expect help anytime soon ... we need action to stimulate demand for energy efficiency measures, to drive down energy costs and create jobs”. (2)

The Big Six energy giants face the prospect of price controls if Labour returns to power. In the month that companies have announced huge inflation-busting price increases, the party signalled it would take action to curb bills. Shadow Energy Secretary Meg Hillier said that Labour was working on plans to create a panel of experts who would give independent advice to the Government on energy pricing. Hillier wants to compel companies to auction all of their electricity to allow more entrants into the market and to create pressure to reduce prices. The dilemma for the Government is that while it wants to curb energy companies it is conscious that they are the only source for £200 billion needed for investment in new generating capacity. (3)

The Liberal Democrat’s conference approved a motion supporting a windfall tax on operators of existing nuclear power stations. (4)

- (1) Hansard 5th July 2011 (See Columns 1434 – 1436) <http://www.publications.parliament.uk/pa/cm201011/cmhansrd/cm110705/debtext/110705-0003.htm>
- (2) Left Foot Forward 3rd Sept 2011 <http://www.leftfootforward.org/2011/09/luciana-berger-government-inaction-on-green-economy-is-holding-us-back/>
- (3) This is Money 21st August 2011 <http://www.thisismoney.co.uk/money/markets/article-2028306/Labour-vow-simplify-curb-rising-energy-bills.html>
- (4) ePolitix 20th September 2011 <http://www.epolitix.com/latestnews/article-detail/newsarticle/nuclear-industry-should-pay-windfall-tax/>

9. Nuclear Costs

Further to last month’s article in which Jonathan Porritt and David Toke (an energy policy lecturer at Birmingham University) challenged the Committee on Climate Change’s (CCC) view that building more nuclear power stations would be a cheaper option than building offshore wind farms, Toke notes in *Renewable Energy Focus* that the CCC’s view seems to be based on “pure faith”. Actually, the difference in cost between nuclear and onshore wind is very marginal even on the Committee’s own figures (drawn from a study by Mott MacDonald). They appear to be based on a hope that the costs of building *European Pressurised Reactors (EPRs)* at Olkiluoto (Finland) and Flamanville (France) will not continue to escalate, that things will not become even worse when translated to the UK, and that the performance of these new designs will match expectations.

But without Government guarantees, pension funds and banks would demand very high risk premia to encourage them to invest in the EPRs. The cost in terms of the pence per kilowatt hour that the nuclear developers will have to be paid in order to cover the repayments to investors and lenders would be extremely large. In the case of France, Finland, and also the U.S., the loan repayments on the nuclear power stations are guaranteed, either directly or indirectly by the French state in the first two cases and by the U.S. Government in the third case. There is pressure on the British Government from nuclear interests to give such guarantees for nuclear investment.

- (1) Renewable Energy Focus 25th August 2011 <http://www.renewableenergyfocus.com/view/20288/uk-are-we-heading-for-a-nuclear-future/>

10. Energy Costs

Energy costs are fast becoming THE political hot potato. Household electricity and gas bills are soaring, and there are calls from the manufacturers association EEF for the abandonment of the

carbon floor price which they say will cost British industry £250m when it begins in 2013 at a rate of £16 per ton of carbon rising to £30 per ton by 2020. (1)

It comes as no surprise that David Cameron has been taking a keen interest in the subject and received a briefing from his new, ex-BP, adviser Ben Moxham. Nor was it a surprise that the briefing was leaked to the *Daily Telegraph* allowing the right-wing press to continue its campaign against green energy policies. "*Environment policy reforms to add £300 to energy bills*" screamed the Telegraph headline, even the Daily Mirror was similar. The mistake they made was that Moxham was clearly referring to a 30% rise by 2020 in electricity bills alone which would mean a rise of about £135. In fact Moxham's analysis isn't that different to Chris Huhne's. (2) The right wing attack on Government policies seems to focus on renewable energy, rather than blaming nuclear, which will benefit even more from Electricity Market Reform. The Institute of Economic Affairs says the Government's obsession with renewable energy will add £500 to fuel bills by 2015. (3)

As we go to press *The Daily Telegraph* has launched a stinging attack on Chris Huhne and his "*ruinous fixation with costly renewable power generation ... one of the reasons energy prices are rising fast government advisers say they will climb by another 30 per cent by the end of the decade is the Coalitions ruinous fixation with costly renewable power generation. Specifically, we are investing more in offshore windfarms than any other country, and the economics of the policy are crippling.*" It says offshore wind will cost £149 per MW compared with £97/MW for nuclear. (4)

NuClear News No.31 reported that the Climate Change Committee (CCC) has now effectively abandoned its claim that offshore wind will be more expensive than nuclear:

"Whilst we think it is likely that nuclear will be cost competitive, consideration of the uncertainties demonstrates why it is inappropriate to base policy on a conclusion that nuclear (or onshore wind, or offshore wind...) is "the" cheapest option."

In fact Ben Moxham is concerned that DECC's projections on how many people will take up "Green Deal" energy efficiency measures to cut bills are "unconvincing". He says a large number of measures will need to be subsidised, given the hassle factor and other barriers to consumer uptake, agreeing with others who have criticised the Green Deal for not being ambitious enough. This chimes with what Friends of the Earth said in a letter to *The Guardian*. Donna Hume called on the big six utilities to face up to the anger people feel towards them. Their record profits coincide with unmanageable consumer price rises. Instead of investing in the UK's energy supply, they've made enormous payments to shareholders, leaving bill payers and taxpayers to pick up the tab. Ofgem has launched a legal investigation into their charging practices, having found them guilty of ripping us off to the tune of £250m earlier in the year. (5)

Dr David Toke, writing in the renewable energy magazine, *Renew*, says the Electricity Market Reform (EMR) approach is basically to support nuclear. The Government is proposing to deploy an obscure mechanism to give subsidies to non-fossil energy sources. It is calling it a 'contracts for differences' system. Nuclear and renewable electricity sources will be 'auctioned' so that those generators tendering the lowest price to sell their power will be given contracts. The 'contracts for differences' element means that when these prices for which the generators have been given contracts are lower than the wholesale market price for electricity, the electricity consumer will give a subsidy to the generators. On the other hand, when the wholesale market price is higher than the contract prices, the generators will give money back to the consumer. In fact, for almost all of the time the electricity consumer will be subsidising the non-fossil generators. Yet, because there will be very rare occasions when the electricity consumer will get the 'cash backs', the Government will try to hide behind a fiction that of non-subsidy in an atmosphere of secrecy about exactly how much is being paid by the electricity consumer. A key aspect of the 'contracts for differences' system is that it will be very difficult, quite probably impossible, for anybody outside of the electricity companies (that is

not bound by confidentiality commitments) to tell how much is being paid to whom. (6) Just like the old pre-privatisation days.

- (1) FT 11th September 2011 <http://www.ft.com/cms/s/0/9d02fbfe-db0c-11e0-bbf4-00144feabdc0.html>
- (2) Guardian 6th September 2011 <http://www.guardian.co.uk/environment/damian-carrington-blog/2011/sep/05/greenpolitics-energy>
- (3) This is Money 15th September 2011 <http://www.thisismoney.co.uk/money/bills/article-2037645/Obsession-renewable-energy-add-500-UK-households-fuel-years.html>
- (4) Telegraph 20th September 2011 <http://www.telegraph.co.uk/comment/telegraph-view/8776624/Its-Chris-Huhnes-windfarms-that-are-inflating-energy-bills.html>
- (5) Guardian 18th September 2011 <http://www.guardian.co.uk/business/2011/sep/18/anger-at-energy-firms>
- (6) See Renew Online No.93 Page 7 <http://www.natta-renew.org/ROL93.doc>

11. Nuclear Dumping in Cumbria

The possibility of an underground nuclear waste dump being built in West Cumbria moved a step closer at a meeting of the West Cumbria Managing Radioactive Waste Safely Partnership in Maryport on 20th September. A consultation document will go out to the public over the next few months. Details of that document asking for people's views have now been largely agreed. Ruth Balogh of Cumbria Friends of the Earth told Border TV she is very concerned that it will be an enormous engineering project at the back door of the Lake District National Park. (1)

The Partnership was supposed to have finished going through all of the agreed criteria by the end of their August meeting and then they should have been able to issue the public consultation document. But the August meeting of the Partnership was cancelled for two reasons:-

- (1) The Partnership was not satisfied with DECC's response to the principles associated with community benefit.
- (2) A disagreement between Cumbria Association of Local Councils (CALC) and the Local Authorities about whether the Parish Councils should have a power of veto in the ongoing siting process.

A draft consultation was issued to a Partnership Steering Committee meeting on 8th September but the section on siting was blank. The meeting, however, did receive a revised paper from DECC on community benefit, and the Partnership declared itself satisfied with that. That left the ongoing issue related to the siting process.

The consultation period on the Partnership's recommendations will probably now take place from mid November until 20th January, which means it won't now be able to make recommendations to the three local authorities until February or March and the Councils won't be able to discuss until April, May or June 2012. (2)

- (1) Border TV 20th September 2011 <http://www.itv.com/border/nuclear-waste-plans14050/>
- (2) Note taken at the Committee on Radioactive Waste Meeting in York on 14th September 2011.

12. EU Waste Directive

Council Directive 2011/70/Euratom of 19 July 2011 establishes "a Community framework for the responsible and safe management of spent fuel and radioactive waste". (1)

The directive imposes strict obligations on member states – they are required to draw up national programmes for the construction of modern disposal facilities, including a timetable, costs assessment and description of activities to be used in waste management. These have to be presented to the Commission by 2015 and subsequently updated regularly. As such, administrative and financial

monitoring pressure is placed on member states, while the Commission is tasked with assessing these action plans. The question of nuclear waste export to countries outside the EU has also been addressed. Initially, the Commission wanted to ban this, but the revised version of the directive indicates that it will be allowed, but only under very strict conditions. (2)

For a country like Scotland that does not intend to pursue Geological Disposal they will still need to produce a plan for Geological Disposal. The Directive has to be transposed into UK law by 2013, and the first report to the Commission will have to be submitted by 2015. (3)

Meanwhile the next UK Submission to the UN Convention on Spent Fuel and Waste Management is due this autumn, and the UK will have to present its submission at a meeting in Vienna in May 2012 and answer questions from other Convention members. (4) This will be led by the Office for Nuclear Regulation.

- (1) <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:199:0048:0056:EN:PDF>
- (2) New Europe 24th August 2011 <http://www.neurope.eu/article/radioactive-waste-directive-will-nuclear-safety-be-improved>
- (3) Notes taken at CoRWM Meeting held in York 14th September 2011.
- (4) See <http://www-ns.iaea.org/conventions/waste-jointconvention.asp>

13. Waste Transports

Opposition is growing to plans to transport what the Nuclear Decommissioning Authority (NDA) calls "breeder material" by rail from Dounreay to Sellafield to be reprocessed in the old Magnox reprocessing plant. (See NuClear News No.31) (1)

The Nuclear Free Local Authorities have condemned the proposal, adding to concern already voiced by environmental groups. (2) The Local authorities are worried about accidents and terrorist attacks if the plan to transport the 44 tonnes of radioactive uranium and plutonium goes ahead. The NDA says it will involve around 50 rail shipments over the next five years, but the councils say this is dangerous and the material should be treated as waste and "immobilised" at Dounreay. If agreed, shipments could begin next year.

A spokesman for the NDA accepted that discharges from Sellafield will increase as a result of the reprocessing but he denied that armed guards would be needed for the shipment of such "lightly irradiated" material.

The Highland Council urged the NDA to consult more widely with communities on the rail route from Caithness to Sellafield before deciding to go ahead, including several of the main population centres in the Highlands. The implication of transferring the spent fuel is that there will be less need for investment at Dounreay. (3) The Council also wants help to fund the regeneration of the north of Scotland to offset the impact of the closure of Dounreay. (4)

Nuclear waste is also to be sent from Dounreay to a reactor in Belgium. The material will be shipped by sea as part of a long standing inter-government agreement signed when highly enriched nuclear fuel from all over the world was reprocessed at Dounreay. 153 tonnes of intermediate level waste, in a cement form in 500-litre steel drums, will be transported in 21 shipments over the next four years. The material is bound for the state-owned BR2 reactor in Mols. Dounreay Site Restoration Limited said the transports are part of its mission to decommission the site and to honour the "return to sender" commitment. (5)

Stan Blackley, chief executive of Friends of the Earth Scotland, said environmentalists were against transporting nuclear waste between countries. He said: "*Whether the waste is reprocessed or not, in cement or not, doesn't really matter, it's a bad idea and a gamble no government should be prepared*

to take. Sending waste from Scotland to anywhere is unnecessary and risky, with enormous potential for accidents, mistakes and even sabotage. It should not even be considered." (6)

Dounreay Site Restoration Ltd. (DSRL) sets out what will happen to an estimated 300,000 tonnes of radioactive material from decommissioning Dounreay. More than 99 per cent is expected to remain indefinitely on site, but a small amount of foreign-owned waste and the breeder material will probably be removed. The plan is set out in a new leaflet. The exact amount of foreign waste to be returned will depend on the outcome of a recent consultation by the Scottish and UK governments on "waste substitution". This would allow former Dounreay research reactor reprocessing customers to exchange their waste for an equivalent amount from a different stock held by the NDA – probably vitrified High Level Waste at Sellafield. The Belgians have not requested substitution, so DSRL has obtained clearance from the Scottish Environment Protection Agency under EU regulations to enable the Belgians to collect their waste. (7)

Meanwhile Shetland Islands Council is writing to national and foreign governments in an attempt to stop nuclear shipments through its territorial waters which are planned to take place soon. The proposed shipments will involve 16 (and eventually 32) redundant radioactive steam generators being taken from Canada to Sweden for decontamination and recycling. The route would take the ships through the Fair Isle Channel. The steam generators would come from Canada's first private nuclear operator Bruce Power and go to the firm of Studsvik in Nykoping, Sweden. The firm would decontaminate around 90 per cent of the materials, sell the scrap metal on the open market and return the remaining waste to Canada. (8)

- (1) Guardian 26th August 2011 <http://www.guardian.co.uk/environment/2011/aug/26/nuclear-train-dounreay-sellafield-opposition>
- (2) Exotic Fuels - Dounreay Fast Reactor Credible & Preferred Options, Public Consultation, July 2011, NFLA Model Response to NDA Consultation http://www.nuclearpolicy.info/docs/radwaste/NFLA_RWB_29_Dounreay_report.pdf
- (3) Highland Council Press Release 31st August 2011 <http://www.highland.gov.uk/yourcouncil/news/newsreleases/2011/August/2011-08-31-03.htm>
- (4) BBC 31st August 2011 <http://www.bbc.co.uk/news/uk-scotland-highlands-islands-14731588>
- (5) BBC 15th September 2011 <http://www.bbc.co.uk/news/uk-scotland-highlands-islands-14928626>
- (6) Scotsman 16th September 2011 <http://thescotzman.scotzman.com/news/Dounreay39s-waste-on-the-move.6837222.jp>
- (7) DSRL 15th September 2011 <http://www.dounreay.com/news/2011-09-15/dounreay-sets-out-what-will-stay-and-what-will-go>
- (8) Shetland Times 31st August 2011 <http://www.shetlandtimes.co.uk/2011/08/31/council-objects-to-nuclear-shipments-through-fair-isle-channel>

14. Nuclear Dump Siting Consultation

The Department for Energy and Climate change is consulting on a set of proposals for desk-based identification and assessment of Potential Candidate Sites for geological disposal of higher activity radioactive waste. (1) The consultation closes on 30th September 2011.

The consultation sets out a framework for how Potential Candidate Sites for a geological disposal facility could be identified from an area once a decision to participate has been made by the local authorities concerned. DECC says the framework aims to enable a nationally consistent, high level approach across all areas for which there is a decision to participate. But it is clear that West Cumbria is the only area where a decision to participate might be made in the foreseeable future. The British Geological Survey (BGS) has already carried out a high-level sub-surface unsuitability test which has ruled out some parts of West Cumbria (2) However, the consultation document points out that locations above areas excluded by the BGS screening process could still be considered for siting a surface facility. The NDA is currently assuming that surface facilities could be up to 10km or more horizontally from the sub-surface facility.

In principle the Government says it sees no case for having more than one geological disposal facility, if one facility can be developed to provide suitable, safe containment for the radioactive wastes that need to be managed. This is because the sharing of a surface facility, access tunnels, construction support and security provision could lead to significant benefits, including major cost savings and lower environmental impacts. The Government will need to explain how this can be squared with the Environment Agency's (EA) limit on the risk that may be caused by the burial of radioactive wastes of 10^{-6} (i.e. one in a million). (3) It is not clear yet what the radioactive waste inventory for a disposal site will be, but the NDA Disposability Assessment Report for waste arising from new EPR reactors states:

"...a risk of 5.3×10^{-7} per year for the lifetime arisings of a fleet of six EPR reactors each generating a lifetime total of 900 canisters is calculated" (4)

This is more than half the total risk of 10^{-6} allowable for a GDF. Clearly if there were to be more than 12 new reactors producing spent fuel to be added to the legacy waste inventory, a single Geological Disposal Facility would exceed the risk targets set by the EA. The Government's Fixed Unit Price consultation accepted that a second GDF for new build waste might be required *"as a result of the new build programme becoming very large"*. (5)

The Managing Radioactive Waste Safely White paper set out a staged siting process. (6) As far as West Cumbria is concerned the area is currently at Stage 3: "Community consideration leading to a decision to participate". This consultation is about Stage 4: "Desk based studies in participating areas". Stage 5 would involve surface investigations on remaining candidate sites. After this the communities right to withdraw ends and finally Stage 6 involves underground operations.

Stage 4 will clearly rely on existing information so may only allow a relatively high level geological assessment and the whole rock volume in which the host rock is thought to be present may be identified as a Potential Candidate Site. Consequently the Potential Candidate Sites may considerably larger than would be required for a geological disposal facility. The consultation document suggests the area could be as big as 20km by 30km. The question councillors must now be asking is whether this would cause planning blight over a huge part of West Cumbria, and how quickly Stage 5 can be carried out to reduce the blighted area as quickly as possible.

Identification of Potential Candidate Sites will involve consideration of the local features and characteristics which could influence where a facility might be sited. For example, certain conservation areas or protected sites, depending on the nature of their protection, could be considered as either exclusion criteria or as a constraint on the identification of Potential Candidate Sites. Whether this means the Lake District National Park area would be ruled out for surface and/or sub-surface facilities remains to be seen.

A Potential Candidate Site will be a combination of a volume of rock for the underground facility and a surface site for the surface facility.

The consultation sets out a proposed framework for the identification of Potential Candidate Sites. Once potentially suitable surface areas and host rocks have been identified potential host communities, or groups of potential host communities, should start to become apparent. This means relatively small communities such as a town or village. The Community Siting Partnership is then supposed to engage with representatives of these areas. Whilst the document says this engagement could result in revisions to the local criteria or their application, it doesn't say that if the community is totally opposed to the idea of a waste dump in their area that they have a right to a veto if, for example, Cumbria County Council wants to press on regardless.

Consideration would be given to safety, environmental and cost implications at a very high level in order to help focus the assessment on Potential Candidate Sites that show the most potential. The criteria used to identify Potential Candidate Sites would be those set out in the White Paper which were derived from the International Atomic Energy Agency (IAEA) Guidance and those set out by the Committee on Radioactive Waste Management (CoRWM). They are

- geological setting;
- potential impact on people;
- potential impact on the natural environment and landscape;
- effect on local socio-economic conditions;
- transport and infrastructure provision;
- cost, timing and ease of implementation.

Local communities may have additional considerations which they would like to be taken into account in the identification of Candidate Sites, in addition to the national criteria identified above. A Multi-Criteria Decision Analysis would be used to assess the Potential Candidate Sites. This will involve the NDA working with the Community Siting Partnership to decide on the weighting to be given to each criterion.

Any Potential Candidate Sites which move forward into Stage 5 (surface-based investigations), will be subject to increasingly detailed assessments, with resources becoming focussed on investigating those that are most likely to be suitable. This would initially include surface-based investigations, for example non-intrusive seismic surveys and then later the drilling of boreholes which would be the start of statutory regulation.

The consultation says the geological setting of a disposal facility is key to the achievement of long-term safety. The proposed sub-criteria are derived in part from the Environment Agency's response to the MRWS consultation document and are as follows:

- the likely size of the potentially suitable volume of host rock;
- the likely level of technical challenges from construction and engineering conditions and the availability of knowledge and technology by which they could be overcome;
- the level of difficulty to ultimately characterise the Potential Candidate Site;
- a qualitative assessment of the feasibility of developing a robust safety case, based on available geoscientific information (including known geological, hydrogeological and hydrological characteristics)

Of course the 'elephant under the table' in all this is that there is a long list of outstanding scientific and technical issues which will need to be resolved before a robust safety case for the Deep Geological Disposal Facility can even begin to be produced. Nuclear Waste Advisory Associates has produced an issue register which includes a list of 101 such issues. (7) The NDA has responded to this register. (8) Worryingly this includes various statements such as "we agree that this needs further work" and "we have a programme of work to improve our understanding", which suggest that it is far too early to be moving forward to a siting process.

In August the NDA's Radioactive Waste Management Directorate (RWMD) published a document on its approach to "Issues Management", setting out how it will develop its own "issues register", and develop a process to communicate and report on these issues. There will be another NDA document coming out in October with further discussions at the Geological Disposal Implementation Board (GDIB) after that. RWMD says it will be setting up a website and are trying hard to make relevant scientific references on each of the issues available. RWMD says it sees the need for discussions with all sorts of stakeholders on the issues. Unfortunately, there has so far been almost no discussion about the establishment of an independent group of experts to assist communities in understanding all of

these issues in a similar way to the Swedish MKG group which has been established by Swedish environment groups with funding from a nuclear waste fund. (10)

DECC appears to be in a huge hurry to get a deep disposal facility in the only place that has volunteered - Cumbria. But this siting consultation is clearly premature – the public has nowhere near enough evidence about what would be involved in a dump. The Managing Radioactive Waste process is flawed and is heading for a situation where the decision-making bodies (the three Councils) will be able to impose a dump on a local community. And the siting consultation mentions nothing about interests beyond the local community – but a dump would ruin a site of world significance, the Lake District National park.

Consultation responses should be sent to radioactivewaste@decc.gsi.gov.uk by 30th September.

- (1) Managing Radioactive Waste Safely: Desk Based Identification and Assessment of Potential Candidate Sites for Geological Disposal. DECC June 2011
<http://www.decc.gov.uk/assets/decc/11/consultation/mrws-siting/2064-mrws-identification-siting-condoc.pdf>
- (2) See map <http://www.westcumbriamrws.org.uk/page/101/Criterion-2-Geology.htm>
- (3) Environment Agency (February 2009) Geological Disposal Facilities on Land for Solid Radioactive Wastes: Guidance on Requirements for Authorisation, page 46 para 6.3.10
<http://publications.environment-agency.gov.uk/pdf/GEHO0209BPJM-e-e.pdf>
- (4) NDA (22nd Jan 2010) Generic Design Assessment: Disposability Assessment for wastes and spent fuel arising from operation of the UK EPR. Part 1 Main Report. para 5.4 page 97.
- (5) DECC (March 2010) Consultation on a Methodology to Determine a Fixed Unit Price for Waste Disposal and Updated Cost Estimates for Nuclear Decommissioning, Waste Management and Waste Disposal. Paras 1.16 and 3.3.46
http://www.decc.gov.uk/assets/decc/Consultations/nuclearfixedunitprice/1_20100324145948_e_@@_ConsultationonFixedUnitPricemethodologyandupdatedcostestimates.pdf
- (6) The White Paper is available here: <http://mrws.decc.gov.uk/>
- (7) See <http://www.nuclearwasteadvisory.co.uk/wp-content/uploads/2011/06/NWAA-ISSUES-REGISTER-COMMENTARY.pdf>
- (8) See <http://www.nuclearwasteadvisory.co.uk/docs/425/>
- (9) See <http://www.nda.gov.uk/documents/upload/Geological-Disposal-RWMD-approach-to-issues-management-August-2011.pdf>
- (10) See <http://www.mkg.se/en/the-swedish-ngo-office-for-nuclear-waste-review-mkg>

15. Sellafield Performance Plan

The NDA together with Sellafield Ltd and Nuclear Management Partners (NMP) have published a new Sellafield Performance Plan. (1) It sets out how NMP will improve operations with the aim of accelerating decommissioning and providing value for money. Interestingly it says all reprocessing is to cease by 2018. The document discusses AGR spent fuel storage, and sets out what is happening with legacy ponds and gives information about when various buildings are expected to be demolished, and when new buildings might have to be built - the Vitrified Product Store, for example, has very short life so a new one will be needed in 2020s.

Oddly the Sellafield Performance Plan has the MoX Plant slated for closure in 2015/16, but on the same day the plan was published it was announced that the MoX plant would close as soon as possible. (2)

- (1) Sellafield Ltd 3rd August 2011 <http://www.sellafieldsites.com/news/2011-08-03/launch-of-the-sellafield-plan>
- (2) NDA Press Release 3rd August 2011 <http://www.nda.gov.uk/news/smp-future.cfm>