

SAFE ENERGY E-JOURNAL No.35

December 2006

<http://www.no2nuclearpower.org.uk>

The content of this e-journal was for the most part originally prepared for Nuclear Free Local Authorities (Scotland) and is reproduced, as adapted, with their permission but without liability for its contents.

1.0 New Nuclear Monitor

1.1 A new generation of nuclear stations will be built with enough capacity to generate at least as much electricity as Britain's nuclear industry does today, Tony Blair said during the Queen's Speech debate.¹

1.2 EDF Energy, a subsidiary of Electricite de France - the world's largest nuclear operator - has grown into one of the largest UK energy companies² supplying around 5.1 million customers in London, and the south of England, and operating a few coal and gas-fired plant as well as CHP and wind farms.³ CEO Vincent de Rivaz says EDF Energy has set up a UK nuclear project team. It wants the Government's Energy White Paper expected in first half 2007, to give a clear and unambiguous statement of the need for new nuclear in the long-term energy mix in the UK.

1.3 If a stable licensing regime were to be put in place by the Nuclear Installations Inspectorate (NII) early next year, pre-licensing, justification and environmental assessment could be completed in just three years followed by final licensing and consultation in another two years. EDF hopes to put in a pre-licensing application in early 2007, shortly after the NII publishes guidelines on the licensing process in January,⁴ and then start pouring concrete in 2012, and open its first new reactor in 2017.⁵

1.4 Rivaz says the Company is not looking for public subsidies - just a framework to allow investment in low-carbon generation including nuclear.⁶ EDF Energy's submission to the DTI on the Nuclear Policy Framework highlights the need for a licensing and planning environment that significantly reduces the investment risks, by providing certainty in terms of timescale and cost. The company wants public inquiries to be restricted to consideration of local issues, and the White Paper to set out a clear timetable for implementation of the policy framework so that new reactors can be operational by 2017.⁷

¹ Times 16th Nov 2006 <http://www.timesonline.co.uk/article/0,,2-2455528,00.html>

² Guardian October 9, 2006. <http://business.guardian.co.uk/story/0,,1890709,00.html>

³ EDF Energy Website "About Us". <http://www.edfenergy.com/html/showPage.do?name=edfenergy.about.til>

⁴ Richard Orange, "EDF Plans to Lead Britain into New Nuclear Age", *The Business*, November 22, 2006.

<http://thebusinessonline.com/Document.aspx?id=9747C514-58F6-4119-9607-FF15380F0E13>

⁵ Pearl Marshall, "UK's climate, energy policies encourage EDF investment", *Nucleonics Week*, Vol. 47, No. 44, November 2, 2006

⁶ Mark Milner, "No Subsidies for Nuclear says Energy Minister", *Guardian* October 11, 2006.

<http://business.guardian.co.uk/story/0,,1892310,00.html>

⁷ EDF Energy Response to the DTI Consultation on the Policy Framework for New Nuclear Build, October 2006.

http://www.edfenergy.com/core/response_to_dti/docs/EDF_Energy_Response_to_DTI_new_nuclear_build_consultation.pdf

1.5 Meanwhile EDF has begun awarding contracts for a new £2.2bn reactor planned for Flamanville plant in Northern France.⁸ But the French anti-nuclear coalition, Sortir du Nucleaire, is bringing court action against plans saying work began before receiving regulatory approvals.⁹ French Socialist Presidential Candidate, Ségolène Royal, says the country is too reliant on nuclear power, and has attacked the decision to build a European Pressurised Water Reactor at Flamanville.¹⁰

1.6 Despite EDF's apparent enthusiasm, there is still plenty of scepticism about whether nuclear reactors will find investors. An editorial in Public Private Finance magazine says: "the Government is attempting to bully private financiers into both building nuclear plants and shouldering the costs of getting rid of the toxic waste. This would be a foolish thing to do . . . Without bungs, nuclear power isn't profitable. And so private firms will walk away."¹¹ An editorial in *The Financial Times* said "...industry is not moving a muscle until the government delivers on its promises to bolster and extend the emissions trading scheme that helps low-carbon power and to announce changes to the planning system in a white paper. The industry is now likely to sit on its hands for a few months longer, because the White Paper is to be delayed from Christmas to around Easter".¹² The nuclear industry is demanding greater clarity in the White Paper.¹³

1.7 In a report published by the Social Market Foundation, Dieter Helm, a specialist in energy economics at Oxford University, accuses the government of fudging the question of whether it supports nuclear power. He said the energy review provides little by way of concrete policy proposals. This exposes the government to brinkmanship by potential builders, who can wait for the government to get closer to missing emission targets, and demand more financial concessions.¹⁴ Similarly, British Energy, in its submission on the proposed Nuclear Policy Framework, said the Government had not consulted on the extent and the timing of new nuclear capacity, so wants further consultation.¹⁵

1.8 Greenpeace has launched a legal challenge to Energy Review by lodging papers at the High Court that allege there was not a "full public consultation" before this summer's decision to approve new nuclear power stations. A date for a Court hearing has been set for February 2007. Should the case prove successful, the Government will be forced to ditch the conclusions of the energy review and instead carry out a much fuller consultation and provide comprehensive information on the full range of issues relating to building new nuclear reactors in the UK.¹⁶

1.9 The nuclear industry was shaken by the news that the first reactor being constructed in Western Europe since Chernobyl in Finland is running wildly over budget and causing financial losses for French builder Areva. Areva's reactor and services arm revealed a first-half loss of €266m (£180m), compared with a €32m profit during the same period of 2005.¹⁷ The European Commission

⁸ BBC 1st September 2006 <http://news.bbc.co.uk/1/hi/business/5306630.stm>

⁹ Reuters 21st August 2006

http://today.reuters.co.uk/news/articlenews.aspx?type=naturalResources&storyid=2006-08-21T190620Z_01_L21904031_RTRIDST_0_SP_PAGE_024-L21904031-OISNR.XML&src=rss

¹⁰ FT 16th Nov 2006 <http://www.ft.com/cms/s/0cc117d8-7518-11db-bc76-0000779e2340.html>

¹¹ Times 12th September 2006. <http://www.timesonline.co.uk/article/0,,8164-2351724.html>

¹² FT 12th Oct 2006

http://www.ft.com/cms/s/5a829410-598e-11db-9eb1-0000779e2340_i_rssPage=063fb9c2-3000-11da-ba9f-00000e2511c8.html

¹³ FT 12th October 2006 <http://www.ft.com/cms/s/50319d0e-598d-11db-9eb1-0000779e2340.html>

¹⁴ Observer 22nd Oct 2006 <http://business.guardian.co.uk/story/0,,1928297.00.html>

¹⁵ FT 3rd Nov 2006

http://www.ft.com/cms/s/bc07e8b2-6ae0-11db-83d9-0000779e2340_i_rssPage=5b566934-3013-11da-ba9f-00000e2511c8.html

¹⁶ Greenpeace Press Release 5th October 2006

<http://www.greenpeace.org.uk/climate/climate.cfm?ucidparam=20061005114704>

¹⁷ Guardian 9th Oct 2006 <http://business.guardian.co.uk/story/0,,1890709.00.html>

confirmed it is investigating the legality of a €570m loan guarantee to the Finnish reactor made by the French government insurer Coface.¹⁸

1.10 John Ritch, Director General of World Nuclear Association (based in London) says the world needs a 20-fold expansion in nuclear energy in order to prevent dangerous climate change.¹⁹ Despite having received global subsidies of around \$1 trillion over the past 50 years, Ritch wants the nuclear renaissance to be “*pump primed*” with even more taxpayers money.²⁰ He says international institutions should directly support nuclear investment with subsidies disguised as aid for the developing world. A twenty-fold expansion would require a new Yucca Mountain-sized dump to be opened somewhere every six months.²¹ Ritch says nuclear proliferation dangers come not from the existence of nuclear facilities but from the intentions of those who possess them. MIT, on the other hand, says the current non-proliferation regime must be strengthened or “...*the option of a significant global expansion of nuclear power may be impossible*”.²² The number of reprocessing facilities and uranium enrichment required would pose a huge proliferation risk. Traditional risk assessments suggest that, under the WNA proposal, there would be 40 accidents – a mixture of Chernobyls and Three Mile Islands by 2100.

1.11 The European Commission has adopted a new recommendation which attempts to ensure adequate funds are established for nuclear decommissioning and waste management. While a segregated fund is the preferred option for all nuclear installations, the Commission is particularly keen to see these established for new nuclear facilities.²³ Greenpeace described the move as a 'useful step forward', but added that binding rules on decommissioning funds are urgently needed, to protect taxpayers across Europe from potentially massive bills for managing nuclear waste and redundant reactors.²⁴

1.12 An American coalition of groups called Grass Roots Action Center for the Environment (GRACE) has launched a new report called “False Promises: Debunking Nuclear Industry Propaganda”. The report is a compelling exposé of the nuclear industry propaganda highlighting misleading claims and discussing cheaper, faster, safer solutions to mitigate climate change. Grace Energy Initiative: <http://www.graceenergyinitiative.org/download/FalsePromises.pdf>

1.13 Investing in nuclear power is a sure way to lose the battle against climate change, says Greenpeace in response to a report from the International Energy Agency. The IEA promotes nuclear power as the solution which will save us from global warming. But who will save us from nuclear power? For the same carbon savings, nuclear power costs up to ten times as much as energy efficiency measures. It creates huge security and environmental threats that will last for tens of thousands of years. It contributes to the birth of nuclear weapons states like North Korea. It creates tantalising targets for terrorists. “Nuclear sucks crucial investment from genuine solutions, like decentralised energy, renewables and energy efficiency. Global warming needs a global solution, but unless we want every dictator in the world to have access to enriched uranium, nuclear power

¹⁸ FT 25th Oct 2006 <http://www.ft.com/cms/s/e92124c0-63c5-11db-bc82-0000779e2340.html>

¹⁹ His speech, entitled “Accelerating the Global Nuclear Renaissance: A Human and Environmental Imperative” is available at <http://www.world-nuclear.org/dgspeeches/sydney161006.pdf>

²⁰ Scheer, H (19th September 2004) ‘Nuclear Power belongs in the technology museum’ World Council on Renewable Energy. <http://www.wcre.org>

²¹ Smith, B “Insurmountable Risks: The dangers of using nuclear power to combat global climate change” IEER 2006. <http://www.no2nuclearpower.org.uk/reviews/index.php>
Macfarlane, A & Ewing, R (Eds) “Uncertainty Underground” MIT Press 2006
<http://www.no2nuclearpower.org.uk/reviews/index.php>

²² Deutch, J & Moniz, E (co-chairs) “The Future of Nuclear Power”, An Interdisciplinary MIT Study, 2003 p67 <http://web.mit.edu/nuclearpower/pdf/nuclearpower-full.pdf>

²³ Energy Business Review 25th Oct 2006
http://www.energy-business-review.com/article_news.asp?guid=A9492627-F1A2-45F3-B350-E32B6731B872

²⁴ Greenpeace Europe Press Release 24th Oct 2006 http://www.greenpeace.eu/issues/news.html#061024_a

can't be that solution."²⁵ Friends of the Earth agreed that nuclear power has no part to play in tackling climate change.²⁶ Despite the IEA's call for more reactors, the Chief Economist says "If governments do not facilitate the investment, I don't think nuclear will fly."²⁷

1.14 Giving evidence before the House of Commons Trade and Industry committee, Jim Watson from the University of Sussex told MPs that the government's limited time to concentrate on energy issues could mean green options such as micro-generation and distributed generation being crowded out, by the government's focus on building a new generation of nuclear power stations.²⁸ "The risk of focusing on nuclear is that it's taking all the political will," he said. "It will be quite a battle to bring in nuclear and I wonder if there is enough political capital to do that as well as make major changes to the distribution framework. There could be a risk of conflict there."

1.15 More than 3,000 reactors would need to be built worldwide before the nuclear industry could make significant reductions in greenhouse gases, according to Professor Rodney Ewing, of Michigan University. Building these reactors would take too long to curb climate change.²⁹

2.0 Nuclear Waste

2.1 The Government's response to the Committee on Radioactive Waste Management's (CoRWM) recommendations announced that higher level radioactive waste "will be managed in the long term through geological disposal". This goes much further than CoRWM. There are many scientific uncertainties about geological disposal which is why CoRWM also recommended the development of long term waste storage - in case it proved impossible to develop a site in the UK deep underground. CoRWM concluded deep disposal was the 'best available' option but much more work was needed.

2.2 CoRWM consulted widely on the best way forward, but the Government has decided behind closed doors how it will interpret and implement the recommendations. It has handed the task to the Nuclear Decommissioning Authority and abolished Nirex without further consultation.

2.3 CoRWM also said that waste from new reactors raised different ethical and technical questions, and yet the Government has failed to make any distinction between waste we have already committed to creating and waste from new reactors. It has said it will go-ahead with a new generation of reactors which will quadruple the amount of the most highly radioactive waste without any separate consideration.

2.4 Press coverage focussed on the fact that local authorities are to be given the dubious privilege of volunteering to play host to a deep geological repository or dump for nuclear waste. Authorities will be offered inducements including investment in local transport infrastructure and their social fabric.³⁰ The Church of Scotland expressed concern about the possibility that less-well-off

²⁵ Greenpeace International 7th Nov 2006

<http://www.greenpeace.org/international/news/iea-nukes-report-071106>

²⁶ Friends of the Earth Press Release 7th Nov 2006

http://www.foe.co.uk/resource/press_releases/nuclear_not_the_answer_07112006.html

²⁷ Economist 9th Nov 2006

http://www.economist.com/business/displaystory.cfm?story_id=8140053

²⁸ Interactive Investor 17th Oct 2006

<http://www.iii.co.uk/news/?type=afxnews&articleid=5821091&subject=economic&action=article>

²⁹ Times 24th October 2006

<http://www.timesonline.co.uk/article/0,,2-2418414.html>

³⁰ FT 25th October 2006 <http://www.ft.com/cms/s/fdda6778-6398-11db-bc82-0000779e2340.html>

communities may be tempted to enter a bidding war to host such facilities – the decision so to do being taken by current generations with the consequences being visited on future generations.³¹

2.5 CoRWM also wanted to see a new independent body established to oversee implementation. Yet the Government has simply subsumed Nirex into the NDA. This could lead to a legal challenge. Nirex says there is a conflict of interest in the NDA, a waste producer, taking control of building the dump. There could be a lack of transparency there is a danger that cost pressures on the NDA could compromise critical safety standards.³² Nirex says experience has shown that any community considering volunteering to host a dump will need to be involved in the planning from a very early stage, as an equal partner. Such an equal partnership is not possible if the Nuclear Waste Management Organisation is owned by, or is inside, the nuclear industry or the NDA. Feedback from local communities... is very clear that these issues need to be separated.

2.6 Jack McConnell was criticised for saying that Scotland could have its nuclear waste dumped in North-west England. The First Minister's suggestion was made after a keynote speech about the benefits of devolution. David Miliband, the UK Environment Secretary, seemed annoyed that McConnell had jumped the gun. He said it was for local authorities in Scotland, England or Wales to volunteer to accept nuclear waste.³³ Highland Council has said it is not planning to volunteer.³⁴ SNP Deputy Leader, Nicola Sturgeon, accused the First Minister of "crude anti-English posturing".³⁵

3.0 Scotland and the Energy Review

3.1 Labour's manifesto for the Scottish Parliamentary elections in May 2007 leaves the door firmly open for new nuclear power stations in Scotland, but does not make a commitment to replacing existing reactors. The debate overall between pro and anti-nuclear sections of the Party appears to have ended in a draw.³⁶ The manifesto will also re-iterate support for renewables, and there is a commitment to new tough renewable targets. Currently the draft manifesto repeats the commitment to a 40% target for renewables by 2020. An indication about the Labour Party's enthusiasm for new reactors might be whether the final manifesto simply says "there will be new tough targets" or goes even further and actually sets a demanding target. Green NGOs held a fringe meeting at Oban on Energy, with a particular focus on the new report on Decentralised Energy produced jointly with the City of Edinburgh Council. Malcolm Chisholm spoke at the meeting saying he remained to be convinced about the need for new reactors. A poster was also launched which asked the question: "New nuclear power for Scotland?; Greens Say No; Lib Dems Say No; SNP Say No; Scottish Labour Say?"³⁷

3.2 McConnell had earlier declared his support for a nuclear-free Scotland saying he did not believe the country needed any new nuclear power stations. The First Minister told MSPs: "I suspect that

³¹ Herald 15th August 2006 <http://www.theherald.co.uk/features/67924-print.shtml>

³² Forbes Magazine 25th October 2006.

<http://www.forbes.com/business/feeds/afx/2006/10/25/afx3119769.html>

³³ Scotsman 26th Oct 2006 <http://news.scotsman.com/politics.cfm?id=1584342006>

BBC 25th Oct 2006 <http://news.bbc.co.uk/1/hi/scotland/6084922.stm>

Times 26th Oct 2006 <http://www.timesonline.co.uk/newspaper/0,,173-2422135.00.html>

³⁴ Daily Record 26th Oct 2006

http://www.dailyrecord.co.uk/news/tm_headline=nuclear-waste-to-be-buried-%26method=full%26objectid=17992188%26siteid=66633-name_page.html

³⁵ Glasgow Evening Times 27th October 2006 <http://www.eveningtimes.co.uk/lo/features/7025255.html>

³⁶ Sunday Times Scotland 19th Nov 2006

<http://www.timesonline.co.uk/article/0,,2090-2460708.00.html>

³⁷ Greenpeace Press Release 24th Nov 2006,

<http://www.greenpeace.org.uk/climate/climate.cfm?UCIDParam=20061124171124>

we have the capacity in Scotland to deliver the energy needs that we have from a massive increase in renewable sources. "I don't suspect that new [nuclear] stations will be required in Scotland."³⁸

3.3 All Scotland's electricity needs could be met from renewable energy sources by 2050 under a bold vision for a greener future unveiled by Nicol Stephen, the deputy first minister. In an hugely ambitious pledge, the leader of the Scottish Liberal Democrats vowed to go further than the Executive's existing commitment to meet 40 per cent of the country's electricity requirements through renewable sources by 2020. The policy will be one of the Lib Dems' central manifesto commitments for next year's Holyrood elections.³⁹

3.4 A report by John Large for the Greater London Authority points out that if the Scottish Parliament precludes new-build in Scotland, although Scotland's carbon targets can be met from renewable developments, this may impact badly on carbon emissions south of the border if less electricity is exported south.⁴⁰

4.0 Nuclear Decommissioning Authority

4.1 The escalating cost of cleaning up Britain's civil nuclear legacy is expected to be significantly higher than the current estimate of £70bn, according to the House of Commons trade and industry committee. The Committee concluded that the final cost of decommissioning was "still unclear", noting that the estimated public liability had risen from £48bn in 2002, to £56bn in 2004 and to £70.2bn in 2006.⁴¹ Indeed at the launch of its first annual report the NDA said the estimated cost of nuclear decommissioning had risen by £2.1bn largely as a result of the NDA's surveys of radioactive waste ponds at Sellafield.⁴²

4.2 The date for re-opening THORP, which was closed in April 2005 after a leak, has slipped into next year. A spokeswoman said all necessary improvements to the plant will be completed by the end of September but carrying out NII recommendations is likely this will run until the end of December, leading to a restart early 2007.⁴³ BNG was fined £500,000 for the leak at Carlisle Crown Court on 16th October.⁴⁴

4.3 British Nuclear Group (BNG) has delivered a third batch of MoX fuel to the Beznau nuclear station in Switzerland. The four fuel assemblies fabricated in SMP, left Sellafield on November 17. The first batch of four assemblies was delivered in June 2005, and the second in April 2006. The order will be completed with a final delivery in 2007. SMP had been scheduled to complete the fabrication of the whole order by April 2006 but was delayed because of "equipment reliability problems".

4.4 The transport arrangements for the delivery were unprecedented - using Cumbria's main roads. The heavily escorted MOX transport was routed from Sellafield to Barrow docks, in a French

³⁸ Scotsman 22nd Sept 2006 <http://news.scotsman.com/politics.cfm?id=1400302006>

³⁹ Scotsman 19th Sept 2006 <http://thescotsmanscotsmans.com/index.cfm?id=1382692006>

⁴⁰ Scotland on Sunday 5th Nov 2006 <http://scotlandonsunday.scotsman.com/scotland.cfm?id=1638932006>

Brief report on the potential implications for nuclear material transportation issues across London in account of HM Government's 2006 energy review, Large & Associates, November 2006

<http://www.largeassociates.com/clientzone/CZ3156/R3156-2%20final.pdf>

⁴¹ Guardian 16th August 2006 <http://business.guardian.co.uk/story/0,,1850983,00.html>

⁴² Reuters 26th October 2006.

http://today.reuters.co.uk/news/articlebusiness.aspx?type=businessNews&storyid=2006-10-26T194454Z_01_L26586536_RTRUKOC_0_UK-NUCLEAR-BRITAIN.xml&src=rss

⁴³ Guardian 20th September 2006

<http://business.guardian.co.uk/story/0,,1876361,00.html>

⁴⁴ Telegraph 17th October 2006.

<http://www.telegraph.co.uk/news/main.jhtml?xml=/news/2006/10/17/npipe17.xml>

security vehicle via the M6 motorway, turning off close to Kendal onto the main A590 road through Ulverston during Friday afternoon's peak traffic period. Prior to the convoy's arrival at Barrow, the town's dock system was subjected to a major security clamp-down. The cargo, containing around 90kg of plutonium, was driven onboard the BNG ship - the Atlantic Osprey – a converted roll-on roll-off cargo vessel – which sailed that night for Cherbourg. The Irish Government had banned the ship from its territorial waters.

4.5 The previous two shipments to Switzerland had used the port of Workington which has been specifically designated by BNG for its MOX trade to Europe. As Workington was unavailable due to dock repairs, BNG was forced to switch to Barrow, a move which necessitated not only the long road journey through Cumbria but also the use of a Barrow dock never before used for such a shipment. Located some distance from BNG's own dedicated shipping terminal at Ramsden Dock (which has no ro-ro facility), the less secure Anchor Line Basin had to be used. Barrow Borough Council's Chief Executive confirmed that his Council had not been formally consulted or advised of any shipment.

4.6 According to the New Scientist, SMP has been plagued with so many breakdowns that it may have to be shut down. A technical review by consultants Arthur D Little for the NDA reveals that the plant has suffered 37,000 minor and 100 major equipment failures in a year. These have prevented production for about 70% of the time. BNG has mounted an operation to save the plant but this may not succeed. The plant has repeatedly failed to live up to expectations. In 2001 BNFL, predicted it would produce 72 tonnes of MOX fuel a year. Last year, according to the NDA, it made just under 3 tonnes. "The ability to deal with failures is hampered by engineering drawings and documented plant settings that do not always match the reality," the review says. New parts did not fit, and devices put in to fix a problem during commissioning fell out during maintenance. One option which might be considered would be to switch production to more reliable MOX plants in France or Belgium. This, of course, would involve transport of plutonium oxide through the Irish Sea.⁴⁵

4.7 The government has ditched plans to sell British Nuclear Group, and decided instead to break the business up and sell it off piecemeal. Alistair Darling, Secretary of State for Trade and Industry, has set out a timetable for the break up. He said the award of the Sellafield contract could be made around the middle of 2008. He added that BNFL should sell its other business "during the course of 2007". BNG's Magnox division, as well as Project Services, a specialist nuclear consulting business, and BNG's stake in the consortium which runs the Atomic Weapons Establishment's Aldermaston site will all be on the block.⁴⁶

4.8 The research and consultancy arm, Nexia Solutions, will be the only part to remain in the public sector, forming the basis for a new national nuclear laboratory (NNL).⁴⁷ The new Laboratory is to be formed out of the British Technology Centre at Sellafield in Cumbria and Nexia Solutions. NNL aims to secure a skills base for the country's civil nuclear industry. It will play a key role in supporting the UK's R&D requirements, and operate world-class facilities.⁴⁸

⁴⁵ New Scientist 22nd Sept 2006

<http://www.newscientisttech.com/article/dn10141-underperforming-nuclear-plants-future-in-jeopardy-.html>
Arthur D. Little report (redacted):

[http://www.nda.gov.uk/documents/review_of_the_sellafield_mox_plant_smp_report_2006_\(redacted\).pdf](http://www.nda.gov.uk/documents/review_of_the_sellafield_mox_plant_smp_report_2006_(redacted).pdf)

⁴⁶ Independent 3rd Oct 2006. <http://news.independent.co.uk/business/news/article1783811.ece>

⁴⁷ Telegraph 25th October 2006.

<http://www.telegraph.co.uk/money/main.jhtml?xml=/money/2006/10/25/cnbng25.xml>

⁴⁸ Nuclear Engineering International 31st Oct 2006

<http://www.neimagazine.com/story.asp?sectionCode=132&storyCode=2039953>

4.9 The U-turn appears to have been caused by a major row between BNFL and the NDA. "It is a complete shambles. People at the top of BNFL are blaming the NDA and vice versa," one source told The Telegraph. The root of the delay appears to be the battle to buy BNG between the two US engineering giants, Bechtel and Fluor. It is understood that several senior people within BNG were keen to see the business sold to Fluor, while some people at the NDA look favourably on Bechtel. One of the issues being slugged out is BNFL's wish to get the highest price for BNG on the one hand, against the NDA's desire to see whoever is chosen is best-placed to carry on the decommissioning work. Rather than selling the part of BNG which operates Sellafield, competition for the five year contract to manage the site will now be brought forward to 2008.⁴⁹

4.10 Fluor was particularly infuriated by the decision and made unsuccessful direct approaches to the Government to buy BNG outright. Fluor is furious because it believes a delay would give Bechtel an unfair advantage. Bechtel, which advised the DTI on the strategy of introducing competition into nuclear decommissioning and recommended the creation of the NDA, was originally precluded from bidding for major decommissioning contracts until June 2008.⁵⁰ But that restriction has now been lifted.⁵¹ Fluor has threatened to withdraw from bidding for BNG if the Government fails to restore its faith the privatisation process.⁵²

4.11 Both Fluor and Bechtel have employed political lobbying of firms with close links to the Labour government. Fluor has used Sovereign Strategy and Bechtel employed LLM. Fluor took Jamie Reed MP, whose constituency includes Sellafield, on a £7,000 trip to see its operations in the US earlier this year. His predecessor as MP was Jack Cunningham, who is close to Mr Blair and "legislative chair" of the lobbying group Transatlantic Nuclear Energy Forum, which shares Sovereign Strategy's offices.⁵³

4.12 Energy Solutions, another US Company has said it could afford to top Fluor's offer for BNG. Energy Solutions was formed over the past year by the merger of four environmental services companies, including BNG America, formerly BNFL Inc, the US arm of British Nuclear Fuels. BNG America was sold to Energy Solutions earlier this year for £50 million.⁵⁴ Serco, a management services company involved in the consortium that runs Aldermaston, has also announced plans to join a consortium with Bechtel and the US nuclear specialist BWXT in order to bid for the five-year Sellafield contract.⁵⁵

4.13 Any break up of the British Nuclear Group (BNG) could have serious implications for the industry's safety management, trade unions have warned.⁵⁶ Amicus is also worried that the sale of BNG Magnox will favour the three American companies that have partnership agreements with BNG at the Magnox sites - Fluor, in the North; and Energy Solutions and Jacobs Engineering Group, in the South. The union said that whoever won the contract to decommission the Magnox reactors would be in pole position to join a consortium to build new power stations on those sites.⁵⁷

⁴⁹ Telegraph 23rd August 2006

<http://www.telegraph.co.uk/money/main.jhtml?xml=/money/2006/08/23/cnenergy23.xml>

⁵⁰ Times, 31st August 2006. <http://business.timesonline.co.uk/article/0,,13129-2336102.html>

⁵¹ Telegraph 3rd September 2006.

<http://www.telegraph.co.uk/money/main.jhtml?xml=/money/2006/09/03/cnfluor03.xml>

⁵² Times 4th September 2006. <http://business.timesonline.co.uk/article/0,,13129-2341729,00.html>

⁵³ Telegraph 31st August 2006

<http://www.telegraph.co.uk/money/main.jhtml?xml=/money/2006/08/31/cnsella31.xml>

⁵⁴ Times 8th September 2006. <http://www.timesonline.co.uk/newspaper/0,,174-2347880,00.html>

⁵⁵ Independent on Sunday 5th Nov 2006

<http://news.independent.co.uk/business/news/article1956472.ece>

⁵⁶ TUC Hazards Magazine 10th Oct 2006

http://www.tuc.org.uk/h_and_s/tuc-12516-f0.cfm#tuc-12516-6

⁵⁷ Times 12th October 2006. <http://www.timesonline.co.uk/newspaper/0,,173-2399646,00.html>

4.14 There are also concerns that the break up of BNG will lead to an exodus of staff. Already Chief Executive Lawrie Haynes is leaving with a financial package worth well over £1 million pounds.⁵⁸

5.0 Terror

5.1 Former home secretary, Charles Clarke, says the government's energy review has failed to answer key concerns about potential terrorist attacks on new nuclear power stations. "The power of nuclear energy makes it a natural magnet for terrorist activity of a variety of types," he says. "We need to be absolutely certain that we can protect ourselves completely against that threat, the cost of which by the way also has to be met by the state. So I am genuinely sceptical and I do not think that the Energy Review answers these concerns adequately".⁵⁹

5.2 Seizures of smuggled radioactive material capable of making a terrorist "dirty bomb" have doubled in the past four years, according to official figures from the International Atomic Energy Agency (IAEA). Smugglers have been caught trying to traffic dangerous radioactive material more than 300 times since 2002. Most of the incidents are understood to have occurred in Europe. Last year, Western security services, including MI5 and MI6, thwarted 16 attempts to smuggle plutonium or uranium, including highly enriched uranium, probably destined for terrorist groups.⁶⁰

5.3 Dame Eliza Manningham-Buller, the head of MI5, says the agency has identified 30 major terrorist plots being planned in Britain and is targeting more than 1,600 individuals actively engaged in promoting attacks here and abroad. Tomorrow's threat "may include the use of chemicals, bacteriological agents, radioactive materials, and even nuclear technology", she said.⁶¹

5.4 British intelligence officials believe that al-Qaida is determined to attack the UK with a nuclear weapon. The announcement, from an officially organised Foreign Office counter-terrorism briefing for the media, was the latest in a series of bleak assessments by senior officials and ministers about the terrorist threat facing Britain.⁶²

5.5 Proposals to expand the Civil Nuclear Constabulary (CNC) into an armed police force to protect Britain's main oil, gas and electricity installations from terrorist attack have been suggested by Whitehall security officials.⁶³

6.0 British Energy

6.1 British Energy announced a huge rise in its first quarter's profits which rose by 145% compared with the first quarter in 2005/06. But its share prices still fell after the August announcement when the Company told investors that its 63TWh target for this year looked like being missed.⁶⁴ Worse than expected cracks in boiler tubes had been discovered at Hunterston B the week before, but the Company also blamed "human performance issues" at Torness. Unplanned power losses over the first quarter were 3.4TWh compared with 2.3TWh the previous year. A big chunk of the power loss

⁵⁸ Telegraph 13th Nov 2006

<http://www.telegraph.co.uk/money/main.jhtml?xml=/money/2006/11/13/cnbng13.xml>

⁵⁹ BBC 5th September 2006. http://news.bbc.co.uk/1/hi/uk_politics/5315636.stm

⁶⁰ Times 6th October 2006. <http://www.timesonline.co.uk/article/0,,29389-2391574,00.html>

⁶¹ Guardian 10th November 2006. <http://www.guardian.co.uk/terrorism/story/0,,1944351,00.html>

⁶² Guardian 14th November 2006 <http://politics.guardian.co.uk/terrorism/story/0,,1947295,00.html>

⁶³ Sunday Times 19th Nov 2006

<http://www.timesonline.co.uk/article/0,,2087-2460263.html>

⁶⁴ Guardian 17th August 2006, <http://business.guardian.co.uk/story/0,,1851687,00.html>

at Torness came when a large fan had to be replaced after a maintenance procedure went wrong. Mr Coley said of the incident: "For whatever reason people got a little hurried and the communication was not clear." Unions were furious and said to call it a human performance issue was very much an oversimplification."⁶⁵

6.2 In a separate incident, workers at Torness were forced to carry out a manual shutdown early in the evening of August 2nd after problems were spotted with the station's all-important cooling system. Seaweed had blocked filters on the main cooling system. "The station was off for a few days", said BE, "It could have been back earlier but the opportunity was taken to do routine maintenance."⁶⁶

6.3 In Mid-September, BE lowered its output target by a further 2TWh. The company said it hoped there the boiler tube cracking problem at Hinkley Point B would not be as bad as at Hunterston B. However, it decided to bring forward the statutory outage at one of the Hinkley reactors - already planned for the end of September.⁶⁷ By October it announced that the cracking at Hinkley was at the "high end of expectations". In addition, BE said it was investigating underground leaks at Hartlepool.⁶⁸ In the middle of the month of BE's eight stations only Torness was working properly.

6.4 As a result of all these problems, Gordon Brown's plan to sell the Government's 65% stake in the company this autumn is dead. BE is not currently a serious investment because nobody has an accurate picture of the bill for restoring its ageing nuclear plants to a vaguely reliable state. Every time an inspection of its plants is made BE discovers something worse than expected.⁶⁹ The sale is not now likely to happen until 2008 at the earliest.⁷⁰

6.5 The biggest problem for British Energy's AGR reactors is still the cracked graphite bricks, (as opposed to boiler tubes) which are a critical component of the nuclear core. In more severe cases plants may have to be shut down. British Energy warned in 2004 that four plants - Hinkley Point B, Hunterston B, Heysham 2 and Torness in Scotland - may not be able to extend their lifetimes because of cracked graphite bricks. Prolonged outages at Hartlepool and Heysham reactors within the past two years were required following the discovery of graphite cracks. No technique is known that can eliminate the cracks but the Nuclear Safety Directorate has required British Energy to carry out more frequent inspections of the bricks. In light of such difficulties, some nuclear engineers are questioning whether the plants can be used for much longer.⁷¹

6.6 An assessment report by the Nuclear Installations Inspectorate says there is an expectation that most of the graphite bricks in the core of Hinkley Point and Hunterston, would crack in the near future, jeopardising the safe running of the reactors.⁷²

6.7 The Independent asked if BE's troubles would "*put the kibosh on government plans for a new generation of nuclear power plants to replace the old ones*", and concluded "*it certainly doesn't help*", because "*it remains highly unlikely, given the experience of privately owned nuclear capacity in this country, that the City could be persuaded to invest without some form of*

⁶⁵ Telegraph 17th August 2006

<http://www.telegraph.co.uk/money/main.jhtml?xml=/money/2006/08/17/cnrg17.xml>

⁶⁶ Borders Today 21st September 2006.

<http://www.borderstoday.co.uk/ViewArticle2.aspx?SectionID=968&ArticleID=1782450>

⁶⁷ AFX 18th September 2006

http://www.lse.co.uk/FinanceNews.asp?shareprice=&ArticleRef=52408&ArticleHeadline=British_Energy_sees_further_20_TWh_unplanned_losses_for_delayed_boiler_servic

⁶⁸ Guardian 17th October 2006, <http://business.guardian.co.uk/story/0,,1923930,00.html>

⁶⁹ Guardian 17th October 2006 <http://politics.guardian.co.uk/homeaffairs/story/0,,1924196,00.html>

⁷⁰ Independent on Sunday 26th Nov 2006 <http://news.independent.co.uk/business/news/article2016028.ece>

⁷¹ Telegraph 16th October 2006.

<http://www.telegraph.co.uk/money/main.jhtml?xml=/money/2006/10/16/cnenera.xml>

⁷² Guardian 26th October 2006 http://www.guardian.co.uk/uk_news/story/0,,1931556,00.html

government subsidy or market subvention".⁷³ The Scotsman, on the other hand, said the cracks at Hunterston called into question Jack McConnell's policy of avoiding new reactors by extending the life of Scotland's existing ones.⁷⁴

6.8 On 17th November BE announced that its chief nuclear officer, Roy Anderson, would step down, with immediate effect, and that its chief executive would take direct control of nuclear operations.⁷⁵ Anderson would, like Lawrie Haynes, receive a payout of more than £1million.

6.9 British Energy courted further controversy when the company said one reactor at Hunterston and one at Hinkley would be switched back on by the end of this year and the remaining two reactors in January. It warned that these power stations would probably operate at only 70 per cent capacity until March 2008.⁷⁶ It was later forced to admit that the plants had "no restart date", because any plans to re-open them would need to be cleared by the NII.⁷⁷ Operating the two plants at 70% of capacity will reduce output by some 5TWh/y. In addition, statutory outages will be undertaken every two years (compared with the current three-year cycle) in order to carry out boiler inspections.⁷⁸

7.0 Dounreay

7.1 The number of radioactive particles discovered on Sandside Beach has now gone up to 74 from the 67 reported at the end of August.⁷⁹

7.2 UKAEA has been trying to persuade Geoffrey Minter to sell Sandside beach, probably to reduce worries about legal liability, but he has refused.⁸⁰ Instead Mr Minter has called for the lower part of the beach, closest to the waters' edge, to be checked and cleared daily. Minter says that unless the particles are picked up there promptly on arrival while close to the surface, they become buried and probably remain undetected at least until the constant changing sands bring them up to the surface or they are dug up by bait-diggers. Daily clearance of the lower beach would vastly cut the risk of human or animal contact, provide re-assurance that any particle arriving would be promptly detected and removed, provide much needed local employment and enhance substantially the statistical evidence of the time and position of arrival of each particle.⁸¹

7.3 Hundred of thousands of particles were probably released from Dounreay. Most have dispersed into the open sea but up to 2,000 may be buried in sediment. Since November 1983, more than 900 have been found on the seabed, and about 240 on the foreshore at Dounreay, in addition to those retrieved from Sandside beach. In 2005 a contaminated pebble and radioactive particle were found on Dunnet beach. The particles also led to a fishing ban within a 2km radius of the old effluent

⁷³ Independent 17th October 2006

<http://news.independent.co.uk/business/comment/article1879437.ece>

⁷⁴ Scotsman 17th October 2006. <http://thescotzman.scotsman.com/index.cfm?id=1535632006>

⁷⁵ Telegraph 18th November 2006,

<http://www.telegraph.co.uk/money/main.jhtml?xml=/money/2006/11/18/cnbnrg18.xml>

⁷⁶ Times 18th November 2006. <http://business.timesonline.co.uk/article/0,,9078-2459097.00.html>

⁷⁷ Somerset County Gazette 24th Nov 2006

http://www.countygazette.co.uk/search/display.var.1038849.0.war_of_words_on_hinkley_restart.php

⁷⁸ Nuclear Engineering International 22nd November 2006

<http://www.neimagazine.com/story.asp?sectioncode=132&storyCode=2040465>

⁷⁹ BBC 15th Nov 2006

http://news.bbc.co.uk/1/hi/scotland/highlands_and_islands/6151006.stm

⁸⁰ Telegraph 4th Sept 2006

<http://www.telegraph.co.uk/news/main.jhtml?xml=/news/2006/09/04/nbeach04.xml>

See also UKAEA response to the Telegraph: http://www.ukaea.org.uk/news/2006/04_09_06.html

⁸¹ Aberdeen Press & Journal 6th Sept 2006

<http://www.thisisnorthscotland.co.uk/displayNode.jsp?nodeId=149664&command=displayContent&sourceNode=149490&contentPK=15348469&folderPk=85696&pNodeid=149211>

discharge point at Dounreay. The Dounreay Particles Advisory Group (DPAG) says it could take three years to recover the particles, each no bigger than a grain of sand but some are capable of burning a hole in skin, causing ulcers and tissue damage. The UKAEA says that particles found to date on Sandside Beach would cause no observable effects in the event of contact with someone.⁸² The UKAEA is now facing prosecution after an investigation by SEPA into the way Dounreay was managed. A decision by the procurator fiscal is expected shortly.⁸³

7.4 UKAEA says it hopes to test the suitability of remote controlled underwater vehicles (ROVs) next summer for the task of removing particles from the seabed, in order to save divers from having to do the job. It has placed a notice in the Official Journal of the European Union seeking firms capable of carrying out the job. Using Divers would probably be more effective, but very risky – lives could be lost. Complete decontamination using dredgers, the UKAEA claims, would cost some £70bn, which is another way of saying it can't be done.

7.5 The announcement followed the publication in November of a report by DPAG which recommended "serious consideration be given to the targeted removal of significant particles in the marine environment". It is thought that retrieval might reduce the number of particles transported on to beaches. However, it is also recognised that disturbance of the seabed may lead to a short-term increase in the number of particles on the Dounreay foreshore and Sandside Beach.⁸⁴ The DPAG report concluded that particles will keep polluting public beaches for decades to come, and the environment will never be completely cleaned up. DPAG says it is impractical to aim to return the environment to a pristine condition. UKAEA admits that the behaviour that led to the leaks was "just not acceptable".⁸⁵

7.6 Minter says he has given up on promises to clean Sandside Beach and is planning to hire American scientists to do it instead. He has met scientists in Atlanta, Georgia, who have worked closely with the US energy department to clear up contaminated sites. The team uses computers to detect radioactive particles and then disposes of them by means of diggers, conveyor belts and giant filters that can clean up to 250 tons of soil an hour.⁸⁶

7.7 According to the Dounreay Newsletter, a panel of experts has identified a short-list of 11 options for addressing the particles problem. The panel said recovering every particle was not possible and "an understanding of when the issue has been dealt with sufficiently" needs to be considered. The options therefore include differing degrees of cleanup of the seabed near Dounreay, from where particles buried in the sediment are carried by the sea onto nearby beaches.⁸⁷

⁸² Letter from Phil Cartwright, UKAEA to Scotsman 10th Oct 2006
<http://thescotsmanscotsmans.com/letters.cfm?id=1498322006>

⁸³ Sunday Times 10th September 2006
<http://www.timesonline.co.uk/newspaper/0,,176-2351330,00.html>
Guardian 12th Sept 2006
<http://www.guardian.co.uk/commentisfree/story/0,,1870199,00.html>

⁸⁴ BBC 21st Nov 2006 http://news.bbc.co.uk/1/hi/scotland/highlands_and_islands/6169262.stm

Herald 22nd Nov 2006 <http://www.theherald.co.uk/news/75040-print.shtml>

Scotsman 22nd Nov 2006 <http://thescotsmanscotsmans.com/scotland.cfm?id=1727262006>

⁸⁵ Sunday Herald 26th Nov 2006
http://www.sundayherald.com/news/heraldnews/display.var.1042207.0.dounreay_will_pollute_for_decades.php

RobEdwards.com 26th Nov 2006 http://www.robbedwards.com/2006/11/dounreay_will_p.html

⁸⁶ Sun Times 24th September 2006
<http://www.timesonline.co.uk/newspaper/0,,176-2372781,00.html>

⁸⁷ See: http://www.ukaea.org.uk/news/2006/02_11_06.html

7.8 Meanwhile, Dounreay's boss has warned that new problems at the site may be uncovered as workers enter parts of the complex where no-one has set foot for 50 years.⁸⁸

7.9 A £500,000 fund has been set up to help the Caithness economy become less reliant on Dounreay. The North Highland Regeneration Fund will offer start-up support to new businesses. The NDA wants to ease the impact on the area once Dounreay is fully decommissioned.⁸⁹ NDA's chief executive, Dr Ian Roxburgh, said it was crucial that it used the time available to prepare for the nuclear site's eventual closure. UKAEA expects decommissioning work to be completed in 2036, but 500 jobs (out of 2000) are likely to go in the next five years. Highlands and Islands Enterprise (HIE) has also announced it is to invest an extra £12 million in Caithness and Sutherland over the next three years to help diversify the area's economy.⁹⁰ The NDA has published a draft socio-economic policy for consultation with communities around its sites. The closing date for comments is January 19. See: [http://www.nda.gov.uk/News--News_\(1953\).aspx?pg=1953](http://www.nda.gov.uk/News--News_(1953).aspx?pg=1953)

7.10 Meanwhile Princess Anne officially opened Britain's first purpose-built nuclear clean-up test, trials, training, research and development centre in Caithness in October.⁹¹

7.11 At the other end of Scotland a beach has been found to be contaminated with radioactive particles from an old nuclear power station, raising fears that the country's nuclear legacy is not being properly cleaned up. The contamination of the Solway Firth has been revealed in the latest official report on 'Radioactivity in Food and the Environment'. Produced by the Scottish Environment Protection Agency (Sepa) and other regulators, it reported that 95 radioactive particles had been discovered on the foreshore in 2005. This compares to a total of 31 particles found over the previous five years. The large increase is due to heavy rain and flooding last year flushing radioactivity from the Chapelcross waste pipeline, the report said.⁹²

7.12 UKAEA has published a consultation document detailing the feasible options for the condition of the Dounreay site when decommissioning is complete. While a final decision on the future use of the land does not need to be made for a number of years community views are being sought now to allow the NDA and its contractor UKAEA to finalise their plans for decommissioning the site with greater certainty. The closing date for comments on the options is January 19, 2007. See: http://www.ukaea.org.uk/sites/dounreay_end_state.htm

8.0 Trident

8.1 Green MSP, Chris Ballance, will hosts a major United Nations Association debate on the proposed renewal of Trident in the Scottish Parliament on 29th January. Leading authorities on weapons of mass destruction will join Scottish politicians to speak at the conference. Speakers will include: Britain's leading military strategist, Professor Michael Clarke of King's College, John Mayer, the QC who successfully defended Trident protestors on the grounds that they were trying to prevent a crime against international law, and Lord David Hannay, chair of the UN Association and former UK Permanent Ambassador to the UN. There will be cross-party involvement from politicians from the Greens, SNP, Labour and the LibDems.

8.2 The number of serious or significant "nuclear safety events" at Faslane and Coulport, near Helensburgh, has doubled. There were 45 such incidents between June 2004 and May 2005, twice the average for the previous four years.⁹³ Three of the four submarines that carry Britain's nuclear

⁸⁸ BBC 18th Sept 2006. http://news.bbc.co.uk/1/hi/scotland/highlands_and_islands/5355698.stm

⁸⁹ BBC 5th Oct 2006 http://news.bbc.co.uk/1/hi/scotland/highlands_and_islands/5408948.stm

⁹⁰ Dundee Courier 20th Oct 2006 <http://www.thecourier.co.uk/output/2006/10/20/newsstory8878492t0.asp>

⁹¹ Scotsman 11th Oct 2006 <http://news.scotsman.com/index.cfm?id=1504502006>

⁹² Sunday Herald 12th Nov 2006 <http://www.sundayherald.com/59002>

Full version, with links, here: http://www.robedwards.com/2006/11/another_beach_t.html

⁹³ Sunday Herald 3rd August 2006 <http://www.sundayherald.com/57701>

warheads suffered 22 "nuclear safety events" between June 2005 and May 2006. They included failures in radiation protection, mechanical defects and "berthing in extreme weather conditions".⁹⁴

8.3 The Liberal Democrats have calculated, from Parliamentary Answers that the cost of replacing and operating the Trident nuclear missile system would be at least £76bn. (Greenpeace says this may be an overestimate - £50bn may be more accurate). This takes into account the initial cost of acquiring new Trident missiles and replacing Britain's existing nuclear submarines, and the annual running costs of maintaining the system and nuclear warheads over its 30-year life. Intriguingly, calculations by economic and environmental researchers as well as the Guardian suggest a striking parallel between the amount needed to cut carbon emissions, and the cost of renewing and maintaining Britain's Trident nuclear deterrent.⁹⁵

8.4 In a Scottish Parliament debate on Trident on 28th September an Executive Amendment to the SNP motion failed to get through even with the support from the Tories – there were too many Labour rebels. Bill Butler voted against it. (Glasgow Anniesland). Marlyn Glen, (North East Scotland), Kate Maclean, (Dundee West), Pauline McNeill, (Glasgow Kelvin) and Elaine Smith, (Coatbridge and Chryston) abstained. Others, for example Sarah Boyack, were not present. The Lib Dems had similar problems with Mike Rumbles and Mike Pringle voting for the SNP motion.

8.5 Greenpeace published proof that the government is constructing facilities to build a new generation of nuclear weapons. This breaks the Prime Minister's promise that the country would have a debate before a new generation of British nuclear weapons was developed.⁹⁶ The chief scientist at Aldermaston has told potential recruits that "most of our research" is devoted to "the ability to provide a new warhead".⁹⁷

8.6 Defence companies giving evidence to the House of Commons Defence Committee warned that severe shortages of qualified scientists, engineers and skilled technical workers could jeopardise Britain's ability to build a new generation of nuclear submarines. Plans to construct a new wave of civilian nuclear power plants could draw scarce scientists away from the military sector, further threatening any replacement for the Trident submarine system.⁹⁸ They also warned that half the PhD students needed to help are foreign and prohibited from employment in significant defence work for security reasons.⁹⁹

8.7 Analysts believe that the Government will opt for a new fleet of three or four nuclear-powered submarines with an updated version of the Trident ballistic missile and possibly smaller cruise missiles topped with conventional or low-yield nuclear warheads when it published a White Paper promised before the end of the year. Although promised a vote on the whether or not Britain's nuclear deterrent should be replaced Labour MPs will be ordered to back the Government at a vote.¹⁰⁰ There will be a three-month consultation before the vote.

8.8 The replacement of Trident would breach Britain's obligations under international law. According to a legal opinion for Greenpeace, by international lawyer Philippe Sands who says: "Any justification for upgrading or replacing Trident predicated on the risk of some possible (but

⁹⁴ Rob Edwards.Com 8th Oct 2006 http://www.robwards.com/2006/10/tridents_22_nuc.html

⁹⁵ Guardian 4th Nov 2006 <http://environment.guardian.co.uk/climatechange/story/0,,1939422,00.html>

⁹⁶ Greenpeace Press Release 20th October 2006

<http://www.greenpeace.org.uk/contentlookup.cfm?UCIDParam=20061020151700>

⁹⁷ Independent on Sunday 29th Oct 2006

<http://news.independent.co.uk/uk/politics/article1938370.ece>

⁹⁸ Scotsman 8th Nov 2006

<http://news.scotsman.com/index.cfm?id=1651842006>

⁹⁹ Times 8th Nov 2006 <http://www.timesonline.co.uk/article/0,,2-2442906.html>

¹⁰⁰ Telegraph 24th Nov 2006

<http://www.telegraph.co.uk/news/main.jhtml?xml=/news/2006/11/24/ndefence24.xml>

unknown) future threat is inherently incompatible" with the nuclear non-proliferation treaty.¹⁰¹ Jack Straw responded by saying "only a simpleton could think replacing Trident would breach the nuclear non-proliferation treaty". A host of academics wrote to the Guardian saying "we "simpletons" concur ... that the replacement of Trident would constitute a material breach of article VI."¹⁰² Kate Hudson of CND pointed out that the view that there is a legal problem is held by many top legal minds.¹⁰³

¹⁰¹ Guardian 22nd Nov 2006 <http://www.guardian.co.uk/guardianpolitics/story/0,,1953776,00.html>

¹⁰² Guardian 27th Nov 2006 <http://politics.guardian.co.uk/homeaffairs/story/0,,1957795,00.html>

¹⁰³ Guardian 29th November 2006, <http://www.guardian.co.uk/comment/story/0,,1959274,00.html>