No.8 July 2009

NuClear news

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1. The costliest private projects ever undertaken?

> *"We are literally seeing nuclear reactor history repeat itself. The 'Great Bandwagon Market' that ended so badly for consumers in the 1970s and 1980s was driven by advocates who confused hope and hype with reality. It is telling that in the few short years since the so-called 'Nuclear Renaissance' began there has been a four-fold increase in projected costs."* **Dr. Mark Cooper, a senior fellow for economic analysis at the Institute for Energy and the Environment at Vermont Law School. 18th June 2009 (1)**

From the first fixed price reactors in the 1960s to more recent cost projections, the claim that nuclear power is or could be cost competitive with alternative technologies has been based on hope and hype, according to Dr Mark Cooper. If the Unites States were to build 100 new reactors, as has been suggested by some policymakers, the excess cost compared to least-cost efficiency and renewables would be $19 - $44 billion per plant or $1.9 - $4.4 trillion for all hundred. (2)

At the start of the so-called nuclear renaissance around 2001 – 2004, vendors, academics and government officials in the US were coming up with some very low cost estimates. But now Wall Street and Independent Energy Analysts are producing much higher estimates – up to four times higher than the initial projections. Cooper has analysed three dozen recent cost projections, and concludes that the likely cost of electricity from new reactors would be 12-20 cents per kilowatt hour (c/kWh) (7-12p/kWh at June 2009 exchange rates) - considerably more expensive than the average cost of energy efficiency and renewable energies.

US utilities and Wall Street agree on one thing - nuclear reactors will not be built without massive subsidies. The attitude of the Baltimore-based utility – UniStar – a joint venture between EDF and Constellation Energy, is typical. UniStar is planning four new plants (8 reactors) at a cost of up to $48bn – roughly the same as the U.S. spent on the Iraq War in 2006. The U.S. Treasury is expected to guarantee 80% of the total costs through a loan guarantee program. To cover the remainder, UniStar plans to seek loans from the French import/export bank COFACE. Under no circumstances does Constellation or EDF intend to dip into their own coffers to fund the project. UniStar CEO, George Vanderheyden, says "without the federal loan guarantees, this whole thing will come to a stop." (3)

Former U.S. Nuclear Regulatory Commission member, Peter Bradford, says it is clear new reactors can only be built if taxpayers or consumers assume the very large risks.

"Such subsidy to a mature industry – already heavily subsidized -- is contrary to the fundamental free enterprise principles that protect customers and allocate resources efficiently". (4)

(1) Report: 100 new reactors would result in up to $4 trillion in excess costs for US taxpayers and ratepayers. Vermont Law School Press Release 18th June 2009
http://www.vermontlaw.edu/Documents/061909-cooperRelease.pdf
(2) Cooper, M. The Economics of Nuclear Reactors: Renaissance or Relapse? Institute for Energy and the Environment, Vermont Law School, June 2009
http://www.vermontlaw.edu/it/Documents/Cooper%20Report%20on%20Nuclear%20Economics%20FINAL%5B1%5D.pdf
(3) Blake, M. Bad Reactors: Sub-prime nuclear loans, Washington Monthly, Jan/Feb 2009.
http://www.washingtonmonthly.com/features/2009/0901.blakeSB.html
(4) Report: 100 new reactors would result in up to $4 trillion in excess costs for US taxpayers and ratepayers. Vermont Law School Press Release 18th June 2009
http://www.vermontlaw.edu/Documents/061909-cooperRelease.pdf

2. Drivers of the nuclear renaissance

Professor Steve Thomas of Greenwich University has examined potential markets for new European Pressurised Water Reactors (EPRs), and the prospects and risks for the two companies hoping to build them- EDF and Areva. His report, for Greenpeace International, casts doubt on their ability to deliver. (1)

Thomas examines the direct financial consequences of the problems which have arisen with the first two EPRs under construction in Finland and France, as well as the risks which these over budget construction projects are creating for other potential markets. In March 2006 EDF expected Flamanville in France to cost €3.3bn, (10% more than the contracted Olkiluoto in Finland price) and the lead-time to be 54 months instead of the 48 month period forecast for Olkiluoto. But this increased to €4bn in 2008. In December 2006, the French Ministry of Industry (the French government owns more than 90 percent of Areva) said that the losses to Areva in Finland had reached €700 million on a contract fixed at €3 billion.

Both EDF and Areva have long had a stream of secure business with limited competition. EDF has an effective monopoly in the French electricity market. Areva's reactor servicing and fuel supply businesses have also been secure especially in France where it has had a market for the 58 operating reactors with little realistic competition. These large markets are on such a scale that the losses even from major failures such as Olkiluoto and Flamanville could be absorbed over 3 or 4 years with relatively little impact on their overall profits. Simply replacing existing French reactors as they were retired was expected to require the completion of about 2-3 EPRs per year from 2017 onwards (with construction starting around 2010). But now there is an expectation that many French reactors will have their lives extended from 40 to 60 years. EDF will also be in competition with GDF Suez.

Both companies appear to be moving in to a period where these secure businesses will become more risky. This comes at a time when their strategic plans call for major investments, which will tend to significantly increase their debt levels, perhaps putting their high credit rating at risk. Both companies have said they want to sell existing businesses to keep their indebtedness under control, but whether they can find businesses to sell that will not damage their corporate prospects and will raise enough money to achieve this remains to be seen. A weakening of their credit rating will have consequences that will be felt throughout their businesses.

In a chapter on Britain in a new book called *"International Perspectives on Energy Policy and the Role of Nuclear Power"*, Thomas places the blame for nuclear power's demise in the UK onto economics rather than Chernobyl. The process of trying to privatize nuclear power, he says, was much more damaging to its credibility than even the severest critics of nuclear power anticipated. It is not clear how new reactors will compete without subsidy. Even the optimistic cost estimates used by the Government show that nuclear power is more expensive than gas. Financiers will be looking for loan guarantees, as happened in Finland and is promised in the US. For many new technologies, assuming a combination of technical change, economies of scale and learning would lead to dramatic reductions in cost and improvements in performance does not seem unreasonable. But nuclear power is not a new technology, and cost reductions have continually failed to materialize.

(1) Thomas, S. Areva and EDF Business Prospects and Risks in Nuclear Energy, Greenpeace, March 2009 http://www.greenpeace.org.uk/media/reports/business-prospects-and-risks-nuclear-energy
(2) Mez, L. Schneider, M & Thomas S. International Perspectives on Energy Policy and the Role of Nuclear Power, Multi-Science 2009 http://www.multi-science.co.uk/nuclear_power.htm

3. Sizewell disaster narrowly avoided

Suffolk was only ten hours away from a serious nuclear accident at Sizewell A in 2007 after 10,000 gallons of radioactively contaminated water leaked from a pipe carrying cooling water to a spent fuel storage "pond". Disaster was narrowly avoided when the leak was spotted by chance when an employee decided to do some washing. If the leak had not been detected it could have led to the whole spent fuel pond draining, and the spent fuel catching fire causing an airborne release of radioactivity. (1)

The Nuclear Installation Inspectorate's (NII) report of the incident, obtained under the Freedom of Information Act, said: *"The pond could have been drained (it takes about 10 hours) before the required plant tour by an operator had taken place. In this worst-case scenario, if the exposed irradiated fuel caught fire it would result in an airborne off-site release."* (2) The NII report was obtained by the independent nuclear consultant John Large as part of a dossier he compiled for the local Shutdown Sizewell Campaign. (3)

The NII's preliminary investigation of the event notes a number of alarming things about the Sizewell A cooling pond which suggest the operating company, Magnox South, broke several conditions of its licence. After its investigation, the NII was faced with three possible courses of action. It could have issued a 'Direction' to the licensee demanding certain action, or an 'Improvement Notice' or moved forward with prosecution. The NII decided to issue a Direction, rather than prosecute. (4)

(1) Suffolk Evening Star 12th June 2009 http://www.eveningstar.co.uk/content/eveningstar/news/story.aspx?brand=ESTOnline&category=News&tBrand=ESTOnline&tCategory=xDefault&itemid=IPED11%20Jun%202009%2017%3A44%3A27%3A950
(2) Guardian 11th June 2009. http://www.guardian.co.uk/environment/2009/jun/11/nuclear-waste-nuclearpower
(3) Sizewell A – cooling pond recirculation pipe failure incident of 7 January 2007: assessment of the NII decision making process, Large Associates, 11th June 2009. http://www.largeassociates.com/cz3179/R3179-A3.pdf
(4) World Nuclear News 12th June 2009. http://www.world-nuclear-news.org/RS_Old_nuclear_event_in_the_open_1206091.html

4. Green Gas Plan

In February the Government launched a plan to build more anaerobic digesters to turn unwanted food and farm waste into energy and fertiliser. (1) Anaerobic digesters break down organic waste naturally into a solid that can be used as fertiliser and a gas that can be burnt to generate heat and electricity. A task force was launched to help sectors including farming and the water industry meet goals to produce energy from anaerobic digestion. The Government hopes an agreement with the National Farmers' Union will lead to the use of 1,000 anaerobic digesters by 2020. At present there are estimated to be about 20. The digesters are expected to make many farms self-sufficient in electricity. Any excess could go to the national grid. (2)

The water industry, which has to deal with 1.73 million tonnes of sewage sludge annually, businesses which produce food waste and local authorities could all make use of digesters. If all the organic waste in Britain were recycled in this way, enough energy would be generated to provide two million homes with heat and electricity. The National Grid says waste could be used to generate enough gas to heat half our homes. (3)

Now, United Utilities (UU), the UK's largest listed water company which supplies seven million people in the North West of England, is planning to sell surplus gas to the National Grid. United is a big user of energy, mainly for pumping. It consumes about 0.3% of UK electricity. To help to cut carbon emissions and fuel costs, UU is stepping up investment in combined heat and power (CHP) engines which use the methane gas by-product of wastewater treatment to generate electricity to power sewage works. (4)

United Utilities has unveiled plans for its Davyhulme sewage treatment works which will be the first to inject biogas into the natural gas network. Working with National Grid, United Utilities is expecting its pilot plant to process about 250 cubic metres of biogas per hour - the equivalent of enough gas for 500 homes. National Grid said there were no fundamental technical difficulties to injecting biomethane into the gas distribution network. Several plants in Europe have demonstrated it as a safe way to deliver renewable gas.

The project will allow United Utilities and National Grid to compare the relative efficiency and cost effectiveness of the three main uses for biogas - onsite CHP, gas grid injection and vehicle fuel. The government's forthcoming Renewable Heat Incentive subsidy scheme, expected in April 2011, will be a major factor in determining whether companies like United Utilities use their biogas for injection into the grid, or for electricity generation. If successful, the gas injection project could also pave the way for the widespread adoption of grid injection facilities for other companies operating biogas plants making an important contribution to the government's renewable heat ambitions. (5)

(1) Anaerocic Digestion: Shared Goals, DEFRA, February 2009. http://www.defra.gov.uk/environment/waste/ad/pdf/ad-sharedgoals-090217.pdf
(2) Times 17th Feb 2009 http://www.timesonline.co.uk/tol/news/environment/article5748797.ece
(3) Telegraph 2nd February 2009 http://www.telegraph.co.uk/earth/greenerliving/4431157/Sewage-could-be-used-to-heat-half-the-homes-in-Britain.html
(4) Times 29th May 2009 http://business.timesonline.co.uk/tol/business/industry_sectors/utilities/article6382802.ece
(5) New Energy Focus 15th June 2009 http://www.newenergyfocus.com/do/ecco.py/view_item?listid=1&listcatid=32&listitemid=2741&section=Bioenergy%20%26%20Waste%2CHeat

5. Coal Consultation

The Government has published a long awaited consultation on the regulatory and financial framework to support four carbon capture and storage (CCS) plants, promising that the early adoption of the technology would deliver a major boost to the economy. (1) The consultation, open until 9 September, sets out the proposed regulations and incentives required to make good on a commitment that no new coal plants will be built in the UK without CCS fitted.

But new coal plants only need to demonstrate CCS on 300MW of their capacity from their first day of operation and must scale up the system to full capacity within five years of the technology being deemed as proven. The consultation outlines proposals for the Environment Agency to independently assess the status of the technology in 2020, at which point it is hoped that four successful pilot projects will have demonstrated that CCS is technically feasible on a large scale. (2)

The consultation attempts to alleviate concern it would be impossible to shut down plants if CCS technology doesn't work by proposing a limit on running hours, an annual cap on emissions, or a performance standard requiring limits on emissions could be imposed.

The consultation also sets out plans for financing four demonstration projects through a combination of government investment and charges on energy firms. It says that while the government will press ahead with its £1bn competition to build one demonstration project, future demonstration projects will either be funded through a subsidy mechanism similar to the Renewables Obligation or a straight levy on energy firms. Both options are likely to lead to higher energy bills as utilities seek to recoup the cost.

Greenpeace said *"it all sounds promising, and certainly represents a sizable step forward in government thinking - but of course, as ever, the devil will be in the detail. There is still plenty of potential in these proposals for loopholes to be exploited, and even in the best case scenario any new coal plants would still be pumping out 75% unabated emissions until 2020 (6 million tonnes of CO_2 annually in the case of Kingsnorth, for example), making them far more polluting than an equivalent size gas fired power station"*

"The Government needs to rule out all emissions from new coal-fired power stations, and set a deadline for closing the existing coal plants like Drax." (3)

So, the proposed policy leaves us with the threat of a massive new coal plant at Kingsnorth that would only capture and bury a quarter of its emissions and would still pump out six million tonnes of CO_2 into the atmosphere every year, making it the dirtiest new power station built in Britain for decades.

If built, it is not clear how Britain would meet its legally binding carbon budget of a 34% reduction in CO_2 emissions by 2020.

According to Europe's leading independent energy experts, Pöyry, if the UK was to hit existing renewables and efficiency targets in 2020, there would be no need for new coal or nuclear stations in that time. (4)

Liberal Democrat Shadow Energy and Climate Change Secretary, Simon Hughes accused the Government of playing a very dangerous game by giving the green light to more dirty coal power stations without Carbon Capture and Storage technology from day one.

"CCS is a very important part of the fight against climate change, but building more coal power stations before we know the technology works is a huge gamble that could lead to environmental catastrophe."

(1) DECC Coal Consultation pages 17th June 2009. http://www.decc.gov.uk/en/content/cms/consultations/clean_coal/clean_coal.aspx
(2) Business Green 17th June 2009 http://www.businessgreen.com/business-green/news/2244276/government-predicts-uk-clean
(3) Will Ed make Britain a global leader on climate change, Greenpeace UK website 17th June 2009. http://www.greenpeace.org.uk/blog/climate/will-ed-make-britain-global-leader-climate-change-20090617
(4) Closing the Energy Gap by Poyry. WWF & Greenpeace, 2008 http://www.greenpeace.org.uk/files/pdfs/climate/energy-gap-summary.pdf
(5) Liberal Democrats Press Release 17th June 2009.

6. Scotland says no to nuclear power - again.

A vision for the future of energy production and use in Scotland has been set out by the Scottish Parliament's Economy, Energy and Tourism Committee, which does not include new nuclear reactors, although it may be necessary to extend the life of existing nuclear plants to give time for alternative sources to be established.

The Committee says the focus should be on energy efficiency (paragraph 72) with a radical shift in policy towards energy efficiency and for substantial investments of resources in initiatives which focus on maximising the efficiency of supply and consumption of energy (paragraph 85). It recommends: an investment of between £100 and £170m per year over the next decade to reduce energy demand, and fuel poverty; a greater emphasis on decentralising Scotland's electricity system; an increase in individual, community and municipal-scale production, distribution and use of electricity and heat through schemes such as district heating; and investment in renewable energy and cleaner coal-fired power stations.

Carbon capture and sequestration/storage (CCS) is a critical component of the Scottish Government's proposed energy policy. CCS technologies remove a proportion of the CO_2 from a power station that would ordinarily be discharged to the atmosphere and disposes it in former oil or gas fields or in saline aquifers. As a commercially-viable and operational technology, CCS is in its relative infancy. In certain countries, such as the former eastern Germany, there are examples of CCS operating at a demonstration stage with one of the largest projects at Schwarze Pumpe near Berlin at 30MW scale.

The UK Government has announced funding for up to four new CCS demonstration projects using a 'levy mechanism' to drive private investment in the technology. Two sites in Scotland have currently been identified as possible locations for CCS. Longannet in Fife, currently the site of Scotland's largest coal-fired power station operated by Scotttish Power is being proposed as one such demonstration project. The other site for CCS to potentially be installed as part of the construction of a new coal-fired power plant is at Hunterston in Ayrshire, a proposal involving DONG Energy of Denmark.

According to Scottish Power CCS could be in place at Longannet by 2014, provided that the winner of the UK Government's competition was announced by April or May 2010. Scottish Power is critical about the pace of developments at a UK level in relation to the competition. Dr Richard Dixon of WWF Scotland told the Committee:

" ... let us grasp the reality of that [UK Government] competition. It does not oblige anything to happen until 2014, and it obliges only a fraction of the plant's output to be covered by CCS. Even if

Longannet wins and gets perhaps £2 billion from the Government to install the technology, only a sixth of its output will be covered, and not for another six years. We are not rushing headlong towards introducing CCS."

Dr Dixon called on the Committee to put pressure on the UK Government to make the competition move faster, to implement the technology faster and on a bigger scale. In Dr Dixon's view, in six years' time, when the technology is operating in the UK on a small scale, we will probably find that much bigger, better-developed plants in Europe are proving it on a bigger scale. WWF Scotland called on the Scottish Government to set a standard that meant that nothing new could be built that produced more than 300g of CO_2/kWh.

WWF Scotland released a report "Carbon Choices - options for demonstrating carbon capture and storage in the UK power" in May. (2) This examined the three finalists in the UK Government's CCS competition and concluded that doing the trial at Longannet in Fife would be the only choice that actually reduced emissions overall. A trial at a new coal-fired power station at Tilbury in Essex or Kingsnorth in Kent would increase emissions by 32 million tonnes CO_2 between 2014 and 2025 - roughly equivalent to running an extra 4.5 coal-fired power stations for a year. By comparison, fitting carbon capture to the existing power station at Longannet in Fife would reduce emissions by 14.5 million tonnes of CO_2 over the same period - equivalent to turning off 2 coal-fired power stations for a year.

Meanwhile, Longannet Power Station switched on a £1 million prototype to capture CO_2 emissions. The 1MW prototype unit is a small-scale replica of a full-sized carbon capture plant. But it only captures before releasing it again rather than storing it, and is tiny compared with the technology needed for the full 2,300MW plant. (3)

Scottish Power has launched a public consultation on replacing its other coal-fired power station at Cockenzie, near Edinburgh, with a gas-fired plant ahead of an expected planning application to the Scottish Government later this year. (4) The move has angered environmental campaigners, who concede that it would be less polluting than the present coal-fired station but say the project would still result in significant carbon emissions. WWF said if the plant was to be built, it should capture and store the carbon it produced, and it should be as efficient as possible. Dr Richard Dixon said: *"As well as generating electricity it should be making use of the spare heat that it creates for industry or domestic heating."* (5)

(1) Determining and Delivering on Scotland's Energy Future, Scottish Parliament's Economy, Energy and Tourism Committee, 30th June 2009.
http://www.scottish.parliament.uk/s3/committees/eet/reports-09/eer09-07-vol01-01.htm
(2) Carbon Choices - options for demonstrating carbon capture and storage in the UK power, WWF Scotland, May 2009
http://assets.wwf.org.uk/downloads/carbon_choices__final_.pdf
(3) Scotsman 30th May 2009
http://thescotsman.scotsman.com/latestnews/Carbon-capture-switchon-39like-the.5318262.jp
(4) See: http://www.cockenziepowerstation.com/wp/
(5) Sunday Herald 21st June 2009
http://www.robedwards.com/2009/06/changing-cockenzie-from-coal-to-gas-would-create-carnage.html

7. Making Waves

Britain is determined to harness its huge marine energy potential and export it around the world after blowing the opportunity to be a global wind power leader. We are already testing the world's first full scale ocean energy converters - the "sea snake" wave power generator from Pelamis Wave Power Ltd and Marine Current Turbines' SeaGen tidal turbines. (1)

The Pentland Firth is considered to be one of the best tidal energy hotspots in the world. The Crown Estate is working with the Scottish Government and Highlands and Islands Enterprise (HIE) to generate more than 700MW of renewable power from the area by 2020. It has received 42 applications from 20 bidders for wave and tidal energy leases for the Firth. These range from 10MW demonstration sites to 200-300MW commercial projects and come from companies ranging from small developers to multinational companies. (2)

The UK Government is also starting a Strategic Environmental Assessment in England and Wales to identify potential sites and estimate the marine energy potential. It is due by late 2011. The Carbon

Trust has calculated marine energy could eventually supply up to 20% of Britain's power. The BWEA estimates it could provide a similar share of the world's electricity and British firms are keen to cash in on the potentially huge export market.

(1) Guardian 4th June 2009
http://www.guardian.co.uk/business/feedarticle/8541026
(2) Scotsman 9th June 2009
http://thescotsman.scotsman.com/latestnews/More-than-40-bids-to.5345525.jp

8. Renewable Progress

- Iberdrola Renewables – proud owner of Europe's biggest wind farm at Whitelee, near Glasgow, with 140 turbines - now wants up to five similar-sized wind farms in Scotland. (1) Scottish Green MSPs said suitably located projects on this scale could produce 18% of Scotland's electricity allowing the early closure of unsustainable nuclear and coal plants. (2) Meanwhile Scottish and Southern Energy (SSE) unveiled plans for two new large-scale pumped storage hydro electric schemes in the Great Glen, which could mean enough hydro power would be generated to meet the equivalent needs of every household in Scotland in less than 10 years. (3)

- Britain could become a booming market for solar power from next year when feed-in tariffs are introduced. 269 MPs have signed a parliamentary motion supporting the mass rollout of solar photovoltaics (PV). (4) The support was the biggest of any such motion introduced in this parliament. With Feed-in tariffs (FITs) designed to pay a guaranteed above-market price for any electricity fed into the grid for a period of 20-25 years returns close to 10% could be achieved reducing payback times to 10 years or less. Jerermy Leggett, chairman of the British solar group Solar Century, says the British market has tremendous potential but is also concerned that some officials at the Department for Energy and Climate Change may stall the introduction of the FIT at the behest of groups arguing that nuclear power is the answer. (5)

- Twenty well-known German companies are pooling their resources with the aim of harnessing solar power in the deserts of North Africa and transporting the clean electricity to Europe. The businesses, which include some of the biggest names in European energy, finance and manufacturing, will form a consortium next month. If successful, the highly ambitious plan could see Europe fuelled by solar energy within a decade. The consortium behind what would be the biggest ever solar energy initiative will first raise awareness and interest among other investors for the project, known as Desertec, which is estimated to cost around €400bn (£338bn). (6)

- The Scottish Government has published its Renewables Action Plan, which aims to ensure 20% of Scotland's energy comes from renewables by 2020. (7) In response WWF has called on the Government to aim for Scotland to be first European nation to be powered by 100% renewables. The Plan's publication came on the same day as the release of important new research from analysts Poyry on the major part wind power will play in revolutionising the UK's electricity industry. (8) The study confirms that wind power can be a major part of our power supply in the future without causing problems for the electricity grid.

(1) Scotsman 10th June 2009
http://thescotsman.scotsman.com/Register.aspx?ReturnURL=http%3A%2F%2Fthescotsman.scotsman.com%2Fscotland%2FO-power-of-Scotland-well.5349751.jp
(2) Natural Choices 11th June 2009
http://www.naturalchoices.co.uk/Wind-could-provide-18-of-Scotland?id_mot=10
(3) Herald 30th June 2009
http://www.theherald.co.uk/news/news/display.var.2517244.0.Hydros_potential_to_power_all_Scots_homes_in_a_decade.php
(4) EDM No. 689 http://edmi.parliament.uk/EDMi/EDMDetails.aspx?EDMID=37742&SESSION=899
See also: http://wesupportsolar.net/
(5) Guardian 15th June 2009 http://www.guardian.co.uk/business/2009/jun/15/solar-photovoltaic-power-motion
(6) Guardian 16th June 2009 http://www.guardian.co.uk/environment/2009/jun/16/solar-power-europe-africa
(7)Scottish Government's Renewables Action Plan, June 2009.

http://www.scotland.gov.uk/Resource/Doc/278090/0083562.pdf
(8) Pöyry Energy Consulting, Impact of Intermittency: How wind variability could change the shape of the British and Irish electricity markets, June 2009
http://www.ilexenergy.com/?t=7_0Latest#PublicIntermittency

9. Nuclear Installations Inspectorate Staffing Problems

Britain's ageing nuclear facilities have been plagued by more than 1,700 leaks, breakdowns and other mishaps over the past seven years, according to a secret report by the government's chief nuclear inspector, Mike Weightman. The report, released under freedom of information legislation, reveals the catalogue of incidents and accidents that have confronted the Nuclear Installations Inspectorate (NII), as it struggles to cope with a growing workload and a severely depleted staff.

The NII faces "major challenges" in ensuring that old nuclear plants are run or dismantled safely at the same time as checking that new plants are safe to build, Weightman says. With relatively fewer inspectors than any other nuclear-powered country in the world, the NII has to police the safety of 39 nuclear sites at the same time as assessing new foreign reactor designs proposed. (1)

About half of the 1,767 safety incidents were judged by inspectors to have been serious enough *"to have had the potential to challenge a nuclear safety system"*. They include the January 2007 Sizewell incident mentioned above. The operator was not prosecuted for breaching safety rules, according to the NII's official investigation, partly because NII resources were "stretched". Another leak at Sellafield had been going on for 50 years. (2)

To assess new reactor designs for the UK, Weightman says he needs a further 36 inspectors, to bring the complement up to 228 by summer 2011. But he has "struggled" to recruit new staff and this could jeopardise the government's target date of 2017 for deploying new reactors. Now the NII is proposing to collaborate with China on assessing new reactor designs, hiring French inspectors on secondment and greater use of third-party contractors. NII wants to streamline the assessment of new reactor designs by waiving certain aspects through a series of "exclusions". A recent consultation document circulated suggests allowing reactor designs to be agreed with "exclusions" and "conditions" that can be revisited later. (3)

Greenpeace rejected this course of action. In a letter to the NII it writes: *"We do not agree that a regulator should, even in an informal voluntary process, approve any part of the design, 'excluding' features which may be vital to its safety. The risk is that this will bypass or emasculate essential stages in the regulatory process."*

It continues: *"This flawed process cannot be fixed by making minor adjustments part-way through to allow it to continue. The HSE must reconsider its position or risk losing public confidence in its ability to regulate openly and adequately"*.

The Guardian has also revealed the NII is trying to recruit project managers from the very companies hoping to build new reactors including from companies like Bechtel, CH2M Hill, and Amec. It is also understood that the inspectorate has recruited technical staff from Areva, which has submitted its EPR reactor designs for approval. One nuclear source said staff from Areva would not be allowed to work on the EPR. But there are concerns that the potential conflicts of interest could compromise the safety of the new nuclear reactors if the companies helping the inspectorate have a vested interest in approving their design.

Nuclear companies are becoming increasingly nervous about the inspectorate's ability to handle the work and fear it could delay the construction of new reactors. Greenpeace said: *"The NII is supposed to be independent. It's inevitable that there will be bias in the system if you are going to hire people from the nuclear industry. There will be safety concerns if the idea is to rush through the reactor design assessment programme."* (4)

Meanwhile, The Times reports that the NII has written to EDF and Areva to detail their concerns about the EPR. The letter sets out concerns about the control and instrumentation (C&I) of the reactor design. The NII's warning will compound the view that EDF is unlikely to meet its target of building its first UK reactor within eight years. Areva is already scrambling to produce revised plans but the design assessment phase could be delayed well past its expected completion in 2011. Finnish regulators have also raised concerns about the reactor's C&I systems but this is the first time the NII has done so. (5)

The Government is planning to create a new nuclear statutory corporation by combining responsibility for overseeing safety, security and transport of civil nuclear sites and material. (6) Under the proposals the Health and Safety Executive's (HSE) Nuclear Directorate will be extended to take responsibility for the Department for Transport's (DfT) Transport Security and Contingencies Directorate and Radioactove Materials Transport Team, and formally take over the operation of the Office for Civil Nuclear Security and the UK Safeguards Office. (7) A joint DECC and Department for Work and Pensions consultation is open until 22nd September. (8) World Nuclear News describes this as the latest move *"to facilitate the building of nuclear power plants."* (9)

(1) Observer 21st June 2009 http://www.guardian.co.uk/environment/2009/jun/21/nuclear-power-stations-inspector-watchdog
(2) Whitehaven News 24th June 2009
http://www.whitehaven-news.co.uk/news/solved_sellafield_s_nuclear_waste_headache_that_lasted_half_a_century_1_569454?referrerPath=news/
(3) New nuclear power stations Generic Design Assessment: Discussion document on management of GDA design acceptance confirmations, April 2009.
http://www.hse.gov.uk/newreactors/management-gda-confirmations.pdf
(4) Guardian 27th June 2009
http://www.guardian.co.uk/environment/2009/jun/26/nuclear-power-stations
(5) Times 1st July 2009
http://business.timesonline.co.uk/tol/business/industry_sectors/natural_resources/article6613960.ece
(6) DECC Press Release 30th June 2009
http://nds.coi.gov.uk/Content/Detail.aspx?ReleaseID=404199&NewsAreaID=2&HUserID=886,779,890,849,780,684,710,705,765,674,677,767,684,762,718,674,708,683,706,718,674&ClientID=-1
(7) Business Green 30th June 2009
http://www.businessgreen.com/business-green/news/2245085/government-proposes-single
(8) DECC 30th June 2009
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