# nuClear news

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# 1. AGR Life Extensions: a gamble with safety to avoid blackouts?

EDF Energy has applied to increase the 'weight loss' limit allowed by the Office for Nuclear Regulation (ONR) for graphite bricks inside the core of its Dungeness B reactors. The current allowable 'weight loss' limit is set at 6.2%, but EDF Energy wants this limit to be increased to 8%. (1)

The graphite bricks, each about a metre in height, are cracking and starting to lose weight due to decades of bombardment by radiation and the effects of the $CO_2$ gas coolant on the material. The bricks are crucial to the structural integrity of the reactor cores and also act to moderate the nuclear reaction; it will not function without them. The bricks cannot be replaced, but distortion to the graphite core could prevent the control rods being inserted properly, making it difficult to shut down the reactor in an emergency. A report by Large Associates published in 2006 discusses how an accident could suddenly change the block alignments. (2)

"*The ONR is currently assessing the justification for* [an increase in the weight loss limit] *submitted by EDF, and there is no indication that there are any safety concerns*," the ONR told *Utility Week*. The regulator said EDF Energy is required to determine the rate of weight loss and cracking to the graphite bricks through "*extensive research*" which it will need to present to the regulator as part of its application. "*If there is evidence to suggest that the limit of weight loss can be increased, and we are satisfied with the associated justification provided by the operator, we will agree to it*."

EDF Energy claimed that the safety limits themselves are "*extremely conservative*", so no real risk is posed to its employees or the local community. "[W]*e're still miles away from the boundary between safe and not, we're not operating on that boundary and have extremely conservative limits*," a spokeswoman for EDF told *Utility Week*.

The current closure date for accounting purposes of Dungeness B is 2018, but in February this year EDF Energy applied for a life extension for the plant to enable it to operate until at least 2023, when EDF Energy hopes Hinkley Point C will come on-line. A change to the safety limit will be required to allow the plant, which opened in 1983, to operate for 40 years. (3)

Steve Thomas, professor of energy policy at the University of Greenwich, said: "*It doesn't feel good when we come up against limits and the first thing they [the ONR] do is to move the goalposts*." Prof Paul Mummery, from Manchester University, agreed that the original limits were "conservative." But he said the twin problems of graphite cracking and weight loss meant it may be "uneconomic" for EDF to keep all the 14 AGR reactors running in the long term because the regulator may insist on more inspections to demonstrate safety. "*They* [EDF] *are making good progress but I would not be able to say with absolute confidence that they will reach 2023*," he said. (4)

The BBC explained that if EDF Energy can't find a way to extend the life of the AGRs there is a real possibility of a gap in UK electricity supplies before Hinkley C comes on-line. Dorian Lucas,

a nuclear specialist at energy consultancy, Inenco, said "*Britain has no choice but to gamble with extending the safety limits of the country's ageing fleet of nuclear power plants to avoid the looming spectre of 1970s-style blackouts.*" (5)

Amidst all the talk of graphite there is a risk of missing another recent story concerning claims of conflicts of interest, with the same nuclear companies it regulates also providing the Office of Nuclear Regulation with technical advice. (6) Given that public trust is so often an issue of trust in institutions and people, rather than in technologies or science, it is this other story that perhaps deserves to be getting more attention, says William Nuttall, Professor of Energy at the Open University. He said it is vital to public confidence that actions by EDF and ONR are seen as honest and professional. (7)

Peter Lux (8) points out that the figure of 8% is just one of the limits which EDF wants lifted. This figure is for the core as a whole. Some areas can have over 40% weight loss. Short of decommissioning the reactors it is very difficult to accurately determine the weight loss and cracking in the bricks. This level of weight loss was not expected when the reactor was originally designed and the weight loss and cracking is still not adequately understood.

While EDF might claim to be miles away from the boundary between safe and not, this is very different from the reports of a meeting between EDF and the ONR at which ONR express:

"*…cause for concern about the methodology being used to calculate weight loss itself. This concern applied both to the processes being used and the apparently small margins that existed between weight loss and the limits*."

Lux says that, since the graphite's main purpose is to slow down (called moderate) the neutrons, then if there is less graphite then the reactor is under-moderated. One of the possible accident scenarios considered in the original design was water ingress into the reactor. Since water is a good moderator then this could cause a very sudden increase the power output (explosion). This effect with be much larger if the reactor is under-moderated.

Cracks and weight loss can also affect local temperature and coolant flow which, in turn, could increase or decrease weight loss and cracking which will make it very difficult to predict future weight loss. (9)

Meanwhile 737 jets have started operating from Lydd Airport despite the runway extension being uncompleted. The move was described as a 'disturbing development' by Lydd Airport Action Group (LAAG), who fear an increased risk of an aircraft colliding with the nuclear power station at Dungeness. Because the runway hasn't been extended yet they will be operating at the boundaries of their specification on the existing short runway.

Louise Barton from LAAG said: "*This would be acceptable at a "normal" airport but not at Lydd which is located beside a nuclear power complex. No other airport in Europe and most likely the world is as close to a nuclear power complex*."

## ESPOO

A decision of the Meeting of Parties of the Convention (MoP) on Environmental Impact Assessment in a Transboundary Context, also known as the Espoo Convention, on 6th June

means that all ageing nuclear power stations in Europe will have to have an environmental impact assessment before a licence renewal or the approval of a 10-year-periodic safety review.

There will have to be a consideration about whether the increasing risk of potential large environmental impacts due to a severe accident at an ageing power station can be justified in comparison with other alternatives for generating electricity, and the public will have to be consulted before old reactors receive another lease on life.

This decision means that in the next three years 60 ageing nuclear reactors in Europe will have to undergo an environmental assessment. This includes 7 reactors in Britain – 2 each at Hunterston B; Hinkley B and Dungeness B and one at Sizewell B.

There are good alternatives for lifetime extension of ageing nuclear reactors. Greenpeace has published studies that show energy efficiency measures and renewable energy sources can help address today's energy challenges, including: climate change, energy dependence and the need to develop in a faster, cheaper and cleaner way. With environmental assessments now necessary, governments will have to compare longer operation of old nuclear reactors with these reasonable alternatives. (11)

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2. Brief Review Of The Documents Relating To The Graphite Moderator Cores At Hinkley Point B And Other Advanced Gas -Cooled Reactor (Report Ref No R3154 – Graphite), Large Associates, 28th June 2006 http://www.largeassociates.com/LA%20reports%20&%20papers/3154%20Graphite/R3154-Graphite%20FINAL%2028%2006%2006.pdf
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# 2. Windy Politics

Lord Deben, Chairman of the Committee on Climate Change (CCC) has agreed with Energy Minister, Michael Fallon that Britain has already approved enough wind turbines to meet 2020 renewable energy targets, which means the public could decide other ways to meet climate change targets for 2030. To date plans published by the CCC include 25 Gigawatts (GW) of onshore wind compared with the current capacity of 7GW and a further 5-6GW in the pipeline (see nuClear News No.62). (1)

The CCC itself, however, highlighted that, while there may be a political decision to restrict onshore wind energy post-2020, the committee still believed that an increase in onshore wind farm capacity represents the cheapest means for the UK to meet its carbon targets. A spokesperson said: "*In deciding whether to depart from the cost-effective path, it should be clear that this will raise costs, with knock on impacts for energy prices and affordability*." (2)

Wind industry trade body *RenewableUK* said while there may be enough projects in the pipeline to get to a 30% share of the electricity mix from renewables by 2020, there is less confidence that we will hit the targets for renewable transport fuel and heat to make up the rest of the target, so we might need more renewable electricity to meet the overall target. (3)With the UK being one of the windiest countries in Europe, and onshore wind being one of the cheapest ways to generated low carbon electricity why decarbonise without onshore wind?

DECC's chief scientific adviser Professor David Mackay was at *The Telegraph*-sponsored Hay Festival asking people to use his Carbon Pathways Calculator. The audience decided on a scenario that had 26GW of onshore wind by 2025, and 32GW by 2030. Mackay's calculator shows that we have many options but that there is no silver bullet and demonstrates the need to avoid black and white choices. Mackay is a long standing advocate of a balance of technologies and a critique of those who suggest we can decarbonise without any particular technology. (4)

Wind power is the most popular source of energy in the UK, according to a survey carried out on behalf of *The Guardian*. A study of more than 2,000 people across incomes and political allegiances found that windfarms would be the most welcomed form of power source, as plans are made to develop new energy capacity in the UK. Almost half of respondents (48%) said an onshore windfarm would receive positive reception if it was developed within five miles of their home. Only 27% said a new nuclear power station would be welcomed in their area and 19% said fracking would receive a positive local reception. (5)

For more numbers see Carbon Brief 28th May 2014

http://www.carbonbrief.org/blog/2014/05/lord-deben-and-the-committee-on-climate-change-agree-major-onshore-wind-power-decisions-are-yet-to-come/

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# 3. Government attacks renewables; bends over backwards for nuclear

Fresh from creating an energy efficiency shambles, supposedly because of concerns about rising energy bills, the Government has, over the last month, attacked and destabilised the two cheapest and most popular renewables, says Leonie Greene of the Solar Trade Association.

As we reported in nuClear News No.62 the Government is proposing to make drastic reforms to the solar subsidy regime which could kill off solar farm development. Greene says DECC officials have effectively said that solar is the easiest target for balancing their overspent Levy Control Framework (LCF) books. The solar industry is being treated as some sort of pop-up side-show for balancing the LCF books, while other technologies enjoy at least a level of stability. The government is bending over backwards to provide stability to the French nuclear industry. It eulogises about opening up your local park and the strata beneath your home to the American fracking industry. No wonder the British solar industry is incredulous. (1)

The government's enthusiasm for fracking sits in stark contrast to its erratic rhetoric and actions on solar energy. This is the fourth ambush/policy review the solar industry has had to contend with in less than three years. Constant policy upheaval makes investment to reduce costs difficult, and the latest review is particularly ill considered. Usually governments offer a grace period to investors if they are going to change financial arrangements, but this one offers almost none – which means many emerging solar companies that invested in good faith are set for a financial hit. For all the rhetoric about a shift to rooftop solar, the Government's own policy framework actually limits this important market. What we need politicians to do is to champion good quality solar farms and to liberate the huge potential of the UK's rooftop market. If the government can provide a steady framework, the solar industry can definitely be the cheapest low-carbon technology by around 2018, and ready to take on fossil fuels with no public subsidies at all soon after that.

It is time politicians listened a lot less to big polluting international energy companies, and a lot more to British entrepreneurs who are creating real competition and delivering a clean energy revolution through this extraordinarily benign and accessible technology. They should also listen to the public. The Department of Energy and Climate Change's own opinion poll tracker shows solar enjoys its highest approval ratings ever at 85%. It seems the country is firmly behind solar. Westminster must catch up. (2)

The government has been accused of deliberately over-estimating the savings it would make from pulling the plug on the current system of subsidies for large solar farms, as it seeks to justify plans to shift the industry's focus towards rooftop installations. According to the impact assessment of the solar subsidy review announced earlier this week, the government hopes to save £100m a year from its Levy Control Framework (LCF) clean energy subsidy budget from 2017 by forging ahead with plans to close the Renewables Obligation (RO) scheme to solar farms above 5MW in capacity from April next year. Many solar industry players, frustrated by the surprise review, say they do not accept the government's attempts to justify the proposed changes on cost grounds, arguing that solar was putting limited pressure on the LCF budget and

that alternative reforms could have addressed cost concerns without sparking massive disruption for the industry. (3)

Another DECC document, put out on the same day as the subsidy withdrawal, makes clear that under the new scheme, starting in late 2014, solar will have to fight onshore wind and other cheaper technologies for budget. A limited pot will be made available in October for all 'mature technologies' such as wind, energy from waste, PV, sewage gas - and, controversially, field-scale solar. These are all grouped together in 'Group 1' and a solar development will only win funds if it bids for a lower subsidy than these considerably more mature alternatives. This will probably kill stand-alone solar PV in the UK. Although solar has rapidly come down in price, well-located wind farms are likely to be able to substantially underbid solar PV for the subsidy funds. (4)

The proposed policy changes look "*just plain daft*", says Alan Whitehead, a Labour MP on the Energy and Climate Change Committee. Firstly it means all those people who started to bed down lines of investment, because solar is now investable and relatively quick in maturing must now turn their attention to less clear investment planning. Secondly, the claimed plan of a transition from field solar to medium sized rooftops when existing funding for rooftop deployment has barely been touched doesn't bear scrutiny for more than a few nanoseconds. Thirdly pulling the plug on capacity that can be deployed at speed at a time when we are worrying about security of supply is mad. Breaching the bounds of the levy control framework, regardless of energy logic, is now to be the starting and finishing point for all renewable energy policy, it seems. Except, of course, that when the Levy Control Framework was agreed with the Treasury, it was done so on the basis that there should be a 20% 'leeway' for spending as the framework rolled forward. It now appears, this leeway is gone and that the tightest interpretation of the framework is the 'central case'. (5)

Meanwhile a report presented at the Scottish Parliament estimates that a sixth of Scotland' electricity demand could be met by fitting solar panels on 250,000 homes north of the Border, easing the plight of Scottish households suffering from fuel poverty. Researchers from Edinburgh University, business leaders and public sector experts, have contributed to the report, which was supported by the Scottish Institute for Solar Energy Research, the Scottish Solar Energy Group, the Energy Technology Partnership, AES Solar and the Scottish Universities Insight Institute. Dr Neil Robertson, of Edinburgh University's School Of Chemistry, said: "*The plummeting cost means large-scale solar power is coming to Scotland whether we realise it or not. The key priority is to recognise this, so we can start planning to maximise the social, environmental and business benefits it will bring us*." (6)

Labour's Shadow Energy Secretary Caroline Flint says renewable gas is a "big overlooked area" and could tackle the issues of energy security, affordability and climate change. Flint added if Labour won the general election, they would commission the Committee on Climate Change, with National Grid, to report by the end of 2015 with advice and recommendations on reforms needed "*to maximise the potential for the development of green gas*". She stated there were no barriers to renewable gas being used in the gas grid "*which cannot be overcome*", and highlighted Germany and the USA as examples where green gas is currently being used. In contrast, Flint said the electrification of the heating systems in the UK, rather than using the existing gas grid and gas fuelled heating systems, would require an electricity transmission and

distribution system four times its current size. She said this would put an "*unprecedented, and almost certainly unsupportable, burden onto consumers*". (7)

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# 4. Thorium, small and fast – a smorgasbord of reactors?

NuClear News No. 61 reported that the U.S. Department of Energy reviewed Thorium reactors and concluded: "the choice between uranium-based fuel and thorium-based fuel is seen basically as one of preference, with no fundamental difference in addressing the nuclear power issues [of waste management, proliferation risk, safety, security, economics, and sustainability]." The Union of Concerned Scientists warned that such reactors present proliferation and nuclear terrorism risks because they involve the continuous separation, or "reprocessing," of the fuel to remove fission products and to efficiently produce U-233, which is a nuclear weapon-usable material. Moreover, disposal of the used fuel has turned out to be a major challenge.

Now Robert Alvarez who served as senior policy adviser to the US Energy Department's secretary and deputy assistant secretary for national security and the environment from 1993 to 1999 says the US has lost track of 96 kilograms of uranium 233, and is battling the state of Nevada over the proposed dumping of nearly a ton of left-over fissile materials in a government landfill, in apparent violation of international standards.

The US tried to develop thorium as an energy source for some 50 years and is still struggling to deal with the legacy of those attempts. In addition to the billions of dollars it spent, mostly fruitlessly, to develop thorium fuels, the US government will have to spend billions more, at numerous federal nuclear sites, to deal with the wastes produced by those efforts.

Although thorium atoms do not split, researchers in the 1940s found that they will absorb neutrons when irradiated. After that a small fraction of the thorium then transmutes into a fissionable material — uranium 233 —that does undergo fission and can therefore be used in a reactor or bomb. (1)

## Small Reactors

Dr. Mark Cooper, senior fellow for economic analysis at the Vermont Law School's Institute for Energy and the Environment, has released a major new paper asserting that large-scale development of "small modular reactors" (SMRs) likely would cost $90 Billion–an amount that likely would be diverted from development of much more cost- and climate-effective renewable energy.

Dr. Cooper says "Large reactors have never been economically competitive and there is no reason to be believe that smaller reactors will fare any better. Giving nuclear power a central role in climate change policy would not only drain away resources from the more promising alternatives, it would undermine the effort to create the physical and institutional infrastructure needed to support the emerging electricity systems based on renewables, distributed generation and intensive system and demand management. My paper shows that nuclear power – whether the reactor is large of small–is among the least attractive climate change policy

options (too costly, too slow, and too uncertain) and is likely to remain so for the foreseeable future." (2)

The US Department of Energy (DOE) says it will provide $217 million in matching funds over five years to NuScale, which builds small, ready-made reactors that can be strung together. Small-scale nuclear plants can be strung together and might save utilities on capital costs. But critics question the efficiency and operating costs of small-scale nuclear plants. (3)

The full report, "*The Economic Failure of Nuclear Power and the Development of a Low-Carbon Electricity Future: Why Small Modular Reactors Are Part of the Problem, Not the Solution*," is available on NIRS website here: http://www.nirs.org/reactorwatch/newreactors/cooper-smrsaretheproblemnotthesolution.pdf

Meanwhile, in Britain, the cross Party think tank, Civitas, says Britain's nuclear industry is now entirely vulnerable to the political agendas of other countries, and that the already established supply chains of EDF, Hitachi and Toshiba (which plans to build three Westinghouse AP1000 reactors by 2024) threaten to undermine the UK's nuclear expertise, which is estimated to be worth £4bn a year. The report argues for a programme of government support for smaller reactors - which are quicker to build and could be manufactured largely in the UK. (4)

Small reactors could fuel heat networks as well as generating electricity, if research proposed by the Energy Technologies Institute is successful. The ETI is seeking partners for a project to identify the technology needed to support small-scale thermal and nuclear plants. There are a number of small nuclear reactor designs on the market but no utilities are committed to using the technology on a commercial scale, according to project manager Mike Middleton. "That is probably to do with the economics." But by using the heat as well as the power the business case could be improved. Small reactors discharge around two thirds of their heat into cooling water. Indeed, nuclear is already used for district heating in other countries, including Russia and Switzerland. (5)

## Fast Reactors

Meanwhile in France, which is supposed to be reducing its dependence on nuclear power, a co-operation agreement between France and Japan on fast breeder reactor design and development has been announced. The agreement further extends existing collaboration between the two nations in their decades long efforts to establish fast breeder reactor technology. According to media reports, "*the French contingent has made strong demands*" to use the sodium-cooled Monju prototype fast breeder reactor as a test facility for fuel intended to be used in France's new demonstration breeder ASTRID (Advanced Sodium Technological Reactor for Industrial Demonstration). While co-operation between France and Japan in fast breeder reactor research dates back many years, both countries have failed to demonstrate that they can operate the technology within budget and without accident. (6)

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# 5. Nuclear Industry in Japan Post-Fukushima

Prime Minister Shinzo Abe is hoping to revive nuclear power as a core element of Japan's energy mix. The Japan Business Federation, Chamber of Commerce and Industry and Association of Corporate Executives are stepping up their lobbying efforts for an early restart to Japan's idled nuclear reactors halted after the Fukushima disaster more than three years ago. (1) But of the 48 nuclear reactors temporarily shut down, only 18 are currently under review to reopen, and the review process looks to be long and contested. (2) Here we take a look at the prospects for Japanese reactors and discover that many will never come back online.

The following table lays out the prospects for restarting each of Japan's 48 reactors, based on an analysis by Reuters. (3) (NB NRA stands for the Nuclear Regulation Authority.)

| Reactor | Operator | Probability | Comment |
|---|---|---|---|
| Sendai 1 & 2 | Kyushu Electric | Likely | Approval process fast-tracked by NRA. Faces little local opposition. |
| Ikata 3 | Shikoku Electric | Likely | Restart application submitted. Strong local support. |
| Genkai 3&4 | Kyushu Electric | Likely | Restart application submitted. Little local opposition Has evacuation plan in place. |
| Ohi 3 & 4 | Kansai Electric | Likely | Restart request submitted. Has local support. Kansai Electric president said reactor restarts may be difficult before summer. |
| Takahama 3&4 | Kansai Electric | Likely | Restart application submitted. Evacuation plans almost set. |
| Shimane 2 | Chugoku Electric | Likely | Submitted restart request. Local sentiment cautious but not anti-restart. (It could take up to 32hrs for residents within 32km to evacuate) (3) |

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|---|---|---|---|
| Tomari 1&2 | Hokkaido Electric | Likely | Restart assessment re-opened by NRA. Evacuation plans set. |
| Tomari 3 | Hokkaido Electric | Likely | Restart application submitted but requires upgrades to meet new rules on emergency cooling. |
| Onagawa 2 | Tohoku Electric | Likely | Submitted restart request. Reactor less damaged in 2011 quake as it was shut for maintenance. |
| Kashiwazaki Kariwa, 2,3,4 & 5 | Tokyo Electric | Uncertain | Damaged in 2007 quake. Strong opposition from local governor, population. |
| Kashiwazaki Kariwa 6 &7 | Tokyo Electric | Uncertain | Damaged in 2007 quake. Strong opposition. Restart application submitted. NRA surveying faults at the site. |
| Onagawa 1 &3 | Tohoku Electric | Uncertain | Closest to 2011 quake epicentre. Strong opposition to restart. Majority of evacuation plans not set. |
| Shika 1 & 2 | Hokuriku Electric | Uncertain | Experts say possible active fault under plant. Restart supported. Evacuation plans mostly set. |
| Ikata 2 | Shikoku Electric | Uncertain | Strong local support for restart. Ikata No.3 prioritized for restart. Evacuation plan set. |
| Higashi Dori | Tohoku Electric | Uncertain | Experts say possible active fault line under an important reactor building. |
| Hamaoka 3, 4 & 5 | Chubu Electric | Uncertain | Near major earthquake zone. No evacuation |

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|---|---|---|---|
| | | | plan. Strong local opposition. No.5 has serious salt water damage. |
| Genkai 2 | Kyushu Electric | Uncertain | No timetable yet for filing restart application |
| Takahama 1 & 2 | Kansai Electric | Unlikely | Faces elevated tsunami threat. Been operating since '74 and '75 |
| Ohi 1 &2 | Kansai Electric | Unlikely | Operating since 1979. Needs quake upgrades. Opposition to restart in local legislature. |
| Ikata 1 | Shikoku Electric | Unlikely | Operating since 1977. Shikoku president said he will consider closure. |
| Genkai 1 | Kyushu | Unlikely | Will reach 40 years old next year/ |
| Fukushima Daini 1, 2, 3, & 4 | Tokyo Electric | Unlikely | Strong local opposition to restart. Industry minister has suggested it may never restart. |
| Tsuruga 1 & 2 | Japan Atomic | Unlikely | No.1 started operating in 1970. Active fault line under critical buildings. |
| Tokai Daini | Japan Atomic | Unlikely | Opposition to restart. No evacuation plan. Damaged in 2011 disaster. Operating since 1978. |
| Mihama 1, 2, & 3 | Kansai Electric | Unlikely | Fault line checks ongoing. Operating since '70, '72 and '76 |
| Shimane 1 | Chugoku Electric | Unlikely | Operating since 1974. Chugoku President said last month decommissioning may have to be considered. (It could take up to 32hrs for residents within 32km to evacuate) (4) |

Now a Japanese court has ruled against allowing two reactors to restart which are thought to be near the top of the list of those likely to restart. In a rare case in which anti-nuclear plaintiffs have successfully won a ruling to shut down reactors, the court in Fukui prefecture ruled against allowing Kansai Electric Power Co to restart reactors No. 3 and 4 at its Ohi nuclear plant. Kansai will appeal against the decision. The court ruling is likely to be another spanner in the works for the return to operations of reactors, with the safety checks bogged down by paperwork and disputes over interpreting new guidelines.

This could very well have wider repercussions, says Aileen Mioko Smith, executive director of Green Action, which earlier this month had a lawsuit to close the Ohi reactors rejected by a court in Osaka. (5) Ohi 3 and 4 are the only reactors which have operated at all since around May 2011. They were halted for regular inspections in September 2013. Local residents filed a lawsuit asking that the reactors be kept offline. They said an estimate of tremors from possible earthquakes by the plant's operator is too small, and that the reactors lack sufficient cooling systems. (6)

The court ruling may embolden opponents of nuclear power says the *Japan Times*. It creates a legal precedent and could fuel resistance to restarts, throwing into question whether the administration of Prime Minister Shinzo Abe will be able to push ahead with them as swiftly as planned, although the government asserted that the ruling would have no impact on its plans. (7)

The Court decision underscored the complex nature of the safety debate in Japan, which is vulnerable to objections from any of several levels of government – from village councils to national legislators in Tokyo – as well as regulators and now, potentially, judges. There are an estimated 30 more anti-restart lawsuits pending around the country. (8)

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2. IB Times 9th June 2014 http://www.ibtimes.com/japanese-energy-official-declines-comment-status-nationwide-nuclear-freeze-1596459
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# 6. WIPP: an imminent and substantial endangerment

Environment officials in New Mexico say that more than 500 barrels of radioactive waste from Los Alamos National Laboratory were packed with the wrong kind of cat litter which is suspected of causing a chemical reaction and radiation release into the environment at the WIPP underground nuclear waste dump, and subjecting 22 workers to internal radiation contamination. (1) 369 containers are already at the dump, 57 more are still at Los Alamos and more than 100 are in storage in West Texas. (2)

New Mexico's Environment Secretary Ryan Flynn said: "*Based on the evidence presented ... the current handling, storage, treatment and transportation of the hazardous nitrate salt bearing waste containers at LANL may present an imminent and substantial endangerment to health or the environment*."

Flynn issued a formal order giving Los Alamos two days to submit a plan for securing the waste containers, many of which are likely stored outdoors on the lab's northern New Mexico campus or at a temporary site in west Texas. (3)

Flynn also ordered the US Department of Energy (DOE), which operates WIPP, to submit schedules by May 30 for the expedited closure of two disposal vaults at WIPP that contain up to 369 containers of improperly packaged waste from Los Alamos. But the DOE said it would take 100 work weeks – and possibly twice that long – to secure the vaults. (4)

According to a preliminary report released on 24 April by a DOE-appointed Accident Investigation Board, the root cause of the accident lies with the department's field office and Nuclear Waste Partnership, the contractor that operates the site, both in Carlsbad. They failed to identify radiological risks and make plans to control them, the report's authors said. They added that maintenance of safety systems was neglected, and that DOE oversight was "ineffective". The accident might never have happened had the government not disbanded a key independent scientific body charged with oversight of the safety of the facility. (5)

Nuclear Engineer Arnie Gunderson says the main concern is for the barrels that are above ground. The contents of these barrels become more unstable as they heat up. And we are now heading into the summer. (6)

"*As with the Fukushima nuclear power plant in Japan, the same characteristic errors were in play*", says an editorial in *Nature*, "*hubris, overconfidence in safety assumptions, dilution or non-respect of safety standards, a weak security culture and, crucially, lack of tough, independent scientific and technical oversight*." It continued: "*The uncovering of these safety deficiencies is all the more disconcerting given that the authorities have been proposing to expand WIPP from a site for low- and medium-level waste to one that would also hold both high-level surplus weapons-grade plutonium and much hotter spent nuclear fuel. In the past, WIPP was a model of how to integrate science into the planning and design of a nuclear-waste repository, and how to gain public confidence in that science. Its recent shortcomings are a further blow to the pressing need to find*

*ways to deal safely with the vast quantities of accumulated defence and civilian wastes. WIPP and planned repositories elsewhere would do well to heed the lessons of WIPP's troubles, and strive to ensure that transparent independent scientific oversight of projects is made a top priority and maintained*." (7)

More on this story in the latest issue of Nuclear Monitor (No.787) available on subscription at http://www.wiseinternational.org/node/36

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2. Koat, 20th May 2014 http://www.koat.com/news/500-wipp-barrels-of-questionable-nuclear-waste-packed-with-kitty-litter/26085874
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# 7. Hinkley Notes

Figures published by the Department of Energy and Climate Change (DECC) show that the cost of negotiating the Hinkley deal with EDF Energy ran to £6.7m in the 2013/14 financial year, 69% more than the £4m the department had budgeted. DECC said a change to "project timelines" meant there was "insufficient budget for external advisers" and the cost had subsequently increased. (1)

EDF Energy is now locked in secret negotiations with the Treasury over the fee for its crucial £10 billion government loan guarantee. The Treasury has demanded that EDF Energy pay between £225 million and £250 million, the minimum it believes to be deemed a commercial rate. Officials argued that if payment was set any lower, the guarantee scheme would risk falling foul of European state aid laws. (2)

The haggling is the latest in a long line of hurdles that need to be overcome by EDF Energy before it can give the project the go-ahead, potentially as soon as October or November. It also underlines the sensitivity on both sides to avoid further accusations from the European Commission that government support of the project constitutes illegal state aid.

The loan guarantee, state aid approval from Brussels and backing from EDF Energy's Chinese partners are all needed for the project to get the go- ahead.

1. Building 6th June 2014 http://www.building.co.uk/news/revealed-hinkley-deal%E2%80%99s-%C2%A367m-cost-to-public/5068884.article
2. Times 9th June 2014 http://www.thetimes.co.uk/tto/business/industries/utilities/article4112607.ece

# 8. Nuclear Security

An investigation by the Dundee-based *Sunday Post* has revealed there have been almost 400 security breaches at nuclear power plants in the UK since 2010. A Freedom of Information request by the newspaper revealed that there were 42 breaches recorded last year, 121 incidents in 2012, 116 in 2011 and 145 in 2010. (1)

But no information, however brief, on the detail of these breaches has been made public, as the ONR argues this could lead to further attacks by activists, saboteurs or even terrorists.

Independent nuclear expert John Large said: "*It is deeply worrying that the ONR admit there are existing weaknesses and vulnerabilities in the nuclear plants. But on matters of nuclear safety and more so in security of nuclear facilities the ONR is compulsively secretive - so much so that it will not engage in any public debate.*"

While the number of breaches fell in 2013, the actual number may have been higher because ONR changed the definition of what constitutes a security risk.

The Sunday Post highlights some of the few issues that have come to the media's attention, such as the finding of a computer memory stick by a coach driver in a Cumbrian hotel containing sensitive business information about Sellafield‟s operations. Other breaches include trespassers climbing barbed wire-topped fences and restricted documents being sent via email by mistake.

Dr David Lowry adds:

"*There have been 22 incidents of so-called "moderate significance" over 4 years, but ONR decline to give any details in case a pattern of vulnerability can be constructed by a malevolent adversary, potentially a terrorist. But in my view no pattern should be able to be worked out, as there should be no repeats of the same or similar security failures or vulnerability. It would concern me that any problem discovered was not put right by the next time annual statistics were compiled. If they could not put right a security problem, they should have closed the plant until they can. But it is hard to know whether any or all of these moderate incidents should set security alarms ringing in ONR ears, without further details.*" (2)

1. Newsnet Scotland 12th May 2014 http://www.newsnetscotland.com/index.php/scottish-politics/9175-security-fears-raised-after-string-of-breaches-at-nuclear-plants
2. NFLA 12th May 2014 http://www.nuclearpolicy.info/docs/news/NFLA_nuclear_security_concerns.pdf