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ONR Quarterly Report
Q2 2011/12
(July 11 – September 11)

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Hinkley Point C: what it means for ONR

The consideration of the nuclear site licence application for Hinkley Point C is an important milestone for ONR as we strive towards our

vision of becoming
a world-leading
nuclear
regulator,
writes Director
of Nuclear
New Build,
Kevin Allars.



In July, ONR received the first site licence application for a new nuclear power station in 20 years and it's important that we reflect upon and celebrate how we got here.

The application from NNB Generation Company, or NNB GenCo, is one of a number of proposed new nuclear power stations in the UK. Over the next 18 months we will assess NNB GenCo's suitability, capability and competence to install, operate and decommission a nuclear facility. But this process doesn't work in isolation.

It builds on the work we have been doing on the Generic Design Assessment (GDA) programme over the last four years in its assessment of two new reactor designs, one of which NNB GenCo intends to build and operate at Hinkley.

ONR is working jointly with the Environment Agency on the GDA programme to ensure that any new nuclear power stations built in the UK meet the highest standards of safety, security,

environmental protection and waste management.

As discussed by Paul Brown in [last quarter's report](#), ONR has moved to programme working, demonstrating how it can meet the challenges presented by new build regulation: working effectively and efficiently, while being open and transparent.

Being open and transparent is at the heart of ONR's vision and it is with that same transparency that GDA ensure the public is informed and able to comment on the process by publishing extensive information relating to the reactor assessments, including technical reports and regular progress updates.

In terms of timescales, we're on course to issue interim 'certificates' on both reactor designs in December 2011 and the end of next year we aim to complete GDA on the first design. Of course these milestones depend on the reactor designers producing acceptable solutions to outstanding issues. This includes

issues raised in Mike Weightman's [interim and final report into the accident at Fukushima](#).

Looking at how this fits with the Hinkley Point site licence application, ONR expects the whole process to be complete ahead of NNB GenCo's plans to start building the main reactor structures in 2013. But once again, this depends on us being satisfied with the reactor designs through GDA. We will not allow industry to start building the reactors until all of GDA issues have been cleared to our satisfaction.

As we look ahead, it is important that we also reflect and take stock. The prospect of the first new nuclear power station in 20 years brings into sharper focus the gravity of our work as an independent regulator of the nuclear industry. With this process, as with everything we do at ONR, the protection of people and society is at the heart of our work.

www.hse.gov.uk/nuclear/hinkley-point-c

Quarter 2 at a glance /1

Chief inspector delivers Fukushima report



Mike Weightman addresses Fukushima workers during an IAEA mission in May

In September, HM Chief Inspector of Nuclear Installations, Mike Weightman delivered his report on lessons for the UK nuclear industry from the Japanese incident. The report was presented to the Secretary of State for Energy and Climate Change, Chris Huhne and made public once it had

been laid before Parliament.

The report identified a total of 38 recommendations for the UK nuclear industry and regulator and Mike Weightman will report again on implementation of the recommendations in autumn 2012. www.hse.gov.uk/nuclear/fukushima

Public consultation launched on 'bulk quantities'

From 19 September – 12 December, ONR is running a 12-week public consultation to clarify ONR's interpretation of 'bulk quantities' relating to radioactive matter.

The nuclear site-licensing regime currently applies to a set of defined activities, which includes the storage of bulk quantities of radioactive matter. However, there is no clear definition of what constitutes 'bulk quantities' of radioactive matter, storage of which would need to be licensed. Further information is available under the bulk consultation pages of the ONR website.

www.hse.gov.uk/consult/condocs/cd-onr-bulk.htm

Site licence application received for Hinkley Point C



NNB GenCo's proposed Hinkley Point C nuclear power station (image courtesy of EDF Energy)

ONR received an application from NNB GenCo, a subsidiary of EDF Energy, on 29 July for a nuclear site licence, relating to its proposed development of a new nuclear power station in Hinkley Point, Somerset.

It is anticipated that ONR will spend up to 18 months assessing NNB GenCo's suitability,

capability and competence to install, operate and decommission a nuclear facility. If a site licence is granted, the company will be subject to statutory obligations and regulation by ONR under any condition attached to the licence.

www.hse.gov.uk/nuclear/hinkley-point-c

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Quarter 2 at a glance /2

ONR Board appointed

The full ONR Board came into effect on 25 July and comprises nine members: Nick Baldwin as the Chair, four other non-executive members (Steve Bundred, John Crackett, Paul Kenny and Kevin Myers) and four executive members (Kevin Allars,

Paul Brown, Jon Seddon and Mike Weightman).

Further information about the Board and minutes of the meetings can be found under the Board pages of the ONR website.

www.hse.gov.uk/nuclear/onr-board.htm See also page 11.



(from far left)
Nick Baldwin
(chair); Steve
Bundred;
John Crackett



(from far left)
Paul Kenny;
Kevin Myers;
Kevin Allars

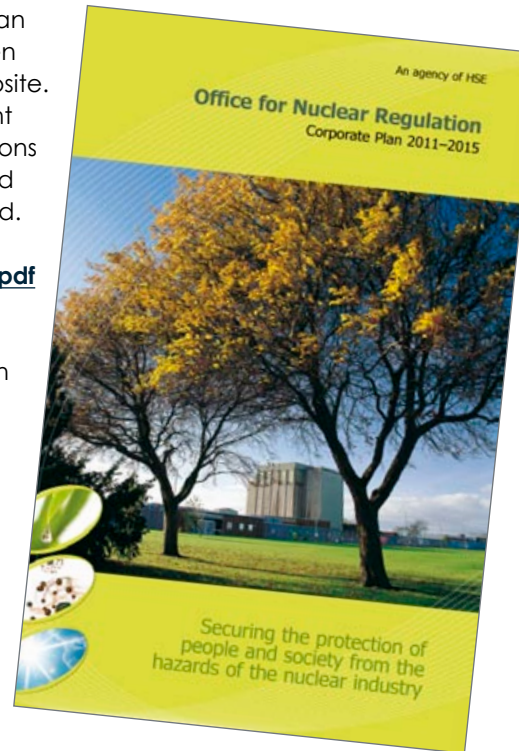


(from far left)
Paul Brown;
Jon Seddon;
Mike
Weightman

Corporate publications published

ONR's first corporate plan for 2011-2015 has been published on the ONR website. The plan provides an insight into ONR's strategic intentions over the next five years and how these will be resourced. www.hse.gov.uk/nuclear/corporate-plan-2011-2015.pdf

Also published on the website in September was the 2011 Nuclear Research Index (safety of operating reactors). Traditionally the scope of the NRI is limited to operating nuclear reactors. Research work is done in other nuclear areas, but is coordinated separately. Therefore the scope of the 2011 NRI relates solely to the requirements for nuclear safety research relevant to operating nuclear reactors. ONR is planning to undertake a review to identify the overall requirements for nuclear safety research, including whether it



should be extended to cover all areas of nuclear safety research.

www.hse.gov.uk/nuclear/nuclear-research-index.htm

Stress tests

The European Council requested a review of safety at European nuclear power plants. The European Commission supported by the European Nuclear Safety Regulatory Group (ENSREG), produced criteria and a plan for this review, now known as the 'EC stress test'. Participating nations, including the UK provided progress reports in September and will provide full reports in December. The UK report compiled and delivered by ONR has been published online.

www.hse.gov.uk/nuclear/fukushima See also page 12.

Quarter 2 at a glance /3

NuGen signs up to regulatory protocol



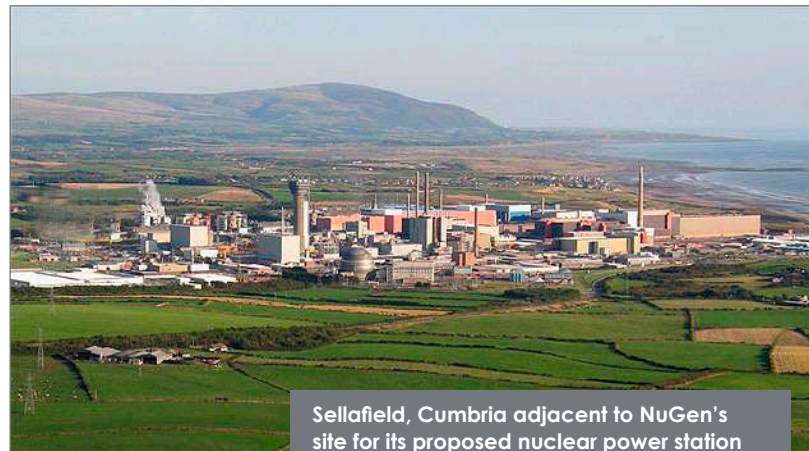
NuGen's Chief Operating Director, Olivier Carret and ONR's Chief Inspector, Mike Weightman sign up to the RNIP principles

The latest organisation to propose building a new nuclear power station has passed an important milestone, signing up to the Regulatory Nuclear Interface Protocol, or RNIP. NuGeneration Ltd, or NuGen has announced its plans to build a new nuclear power station in Cumbria, adjacent to the Sellafield site.

Developed between ONR

and the Nuclear Safety Directors' and other regulators, RNIP is an agreement between operators and regulators which aims to find and implement effective ways of working, facilitate improvement and open up strategic dialogue on key issues. This is all with the shared goal of enabling the safe, secure effective use and control of nuclear technology.

www.hse.gov.uk/nuclear/rnip



Sellafield, Cumbria adjacent to NuGen's site for its proposed nuclear power station (image copyright, Simon Ledingham)

Nuclear Safety Directive and amended licence conditions

Amendments have been made licence condition 17 and 36 to allow the obligations of the Nuclear Safety Directive (NSD) 2009/71/Euratom, to be fully implemented in relation to Great Britain. In light of this, ONR's licence condition handbook has been updated and is available via the ONR website.

www.hse.gov.uk/nuclear/silicon.pdf

In line with its policy of publishing justifications for regulatory decisions, ONR has also published a report detailing the work it has carried out in consulting on the changes.

www.hse.gov.uk/nuclear/pars

Programmes update /1

Programmes update focuses on the ONR's operational activities. Covered here are the activities in Quarter 2, from July to September 2011. For the latest information about ONR, please visit the website www.hse.gov.uk/nuclear, where you can also sign up to receive ONR's monthly eBulletin.

Fukushima

A specialist team was established, reporting directly to the Chief Inspector, to examine both the issues presented by the incident at Fukushima, Japan, and the implications for the UK nuclear industry and its regulation.

- The Chief Inspector's final report on the Japanese earthquake and tsunami, which identifies the implications for the UK nuclear industry, was delivered to the Secretary of State for Energy and Climate Change on 30 September 2011, and was subsequently made public once it had been presented to Parliament.
- Submissions of information for the Chief Inspector's Report and the responses to the Interim Report recommendations received by the mid June deadline (that were considered by ONR and reviewed

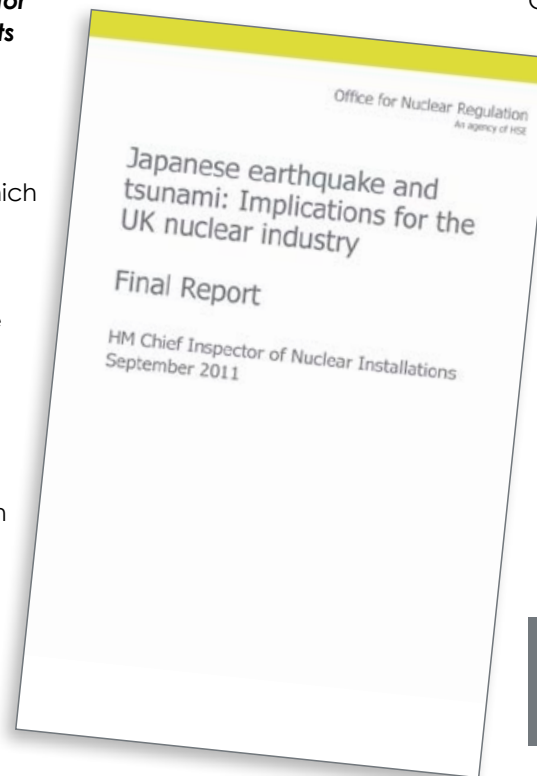
internally by specialist leads) have been published on ONR's website.

- In relation to the European Stress Tests, ONR has received

progress reports from all UK nuclear power plant licensees and has produced a national progress report which was submitted to the European Council in September.

- ONR has decided to produce a concluding 'implementation report' in autumn 2012. The report will provide information on the outcome and peer review of the European Stress Tests and the latest position regarding the addressing of the recommendations made in the Final Report on Fukushima. Once the implementation report is issued, ONR intends to close its dedicated Fukushima Programme and progress relevant activities as part of its other operational programmes.

Mike Weightman's report on the Japanese earthquake and tsunami, and the implications for the UK nuclear industry



Civil Nuclear Reactors

Regulating operating nuclear power stations, defuelling nuclear power stations and licensing and permissioning of proposed new build nuclear power stations.

- The key outcome achieved in the period was the satisfactory completion of inspection and assessment of the licensee safety justification for the return to service of Hartlepool Reactor 1 and Hunterston B Reactor 4. ONR granted Consents for both reactors to return to service.
- No new trends or generic issues have arisen and overall, the annual trend is one of continuing positive improvement in the control of operations across the sites within the Programme. Where exceptions to the trend have occurred, this has been addressed with the respective licensee.
- There has been good progress made by ONR and the licensees in responding to the recommendations from

Programmes update /2

Nuclear New Build

the Chief Inspector's Report on Fukushima and the European Stress Tests. It is anticipated that planned deliverables will be met by the agreed timescales, although there is a resource challenge for both the licensees and Programme.

The report here includes aspects of the Nuclear New Build Programme, which is at present managed in a separate programme in ONR, but will be incorporated into the Civil Nuclear Reactors Programme once the Nuclear New Build Generic Design Assessment work has reached a satisfactory position.

➤ The Programme's approach of early engagement with prospective licensees is having a positive influence, which is evident with the recent Hinkley Point C nuclear site licence application. Key strategic issues such as having an independent internal challenge function and issues of organisational capability have been addressed.

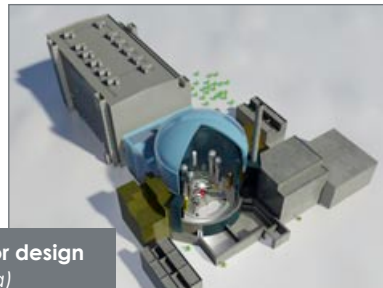
Generic Design Assessment, or GDA, is the four-year process by which prospective nuclear power station vendors have submitted design safety cases for approval, prior to the site-based construction process commencing. For the latest news on the Generic Design Assessment, please visit www.hse.gov.uk/newreactors.

➤ Responses to the GDA Issues that were identified in July are being received from EDF/Areva, the 'requesting party' for the EPR™ reactor design, which is continuing with the GDA process. ONR's assessment

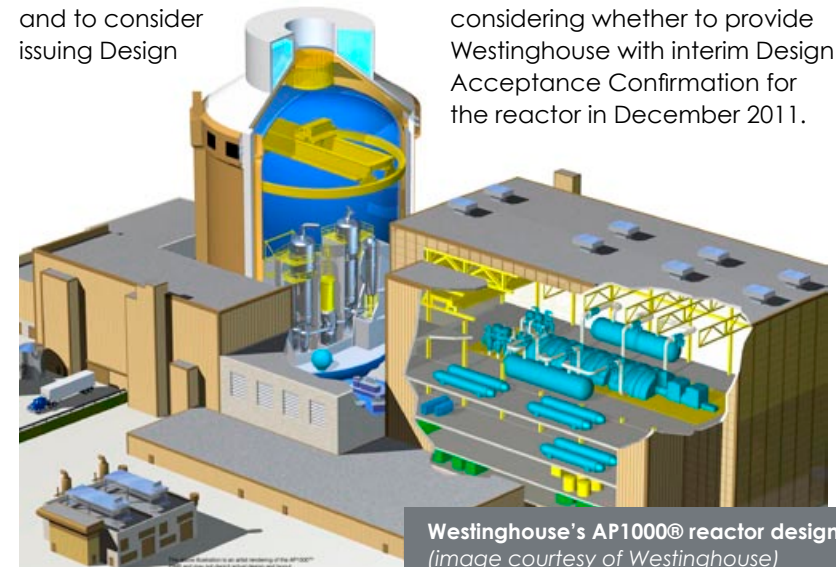
of these responses has begun. Unfortunately, a few of the early deliverables have been late or do not provide the quality of information or depth of evidence that we expected. We will monitor this situation, but expect EDF/Areva to recover the situation such that it does not threaten ONR's ability to close the GDA Issues and to consider issuing Design

Acceptance Confirmation at the end of 2012.

➤ Discussions have continued with Westinghouse, the requesting party which has signalled that it will not address any of the identified GDA Issues for the AP1000® reactor design until it is able to secure funding for that work. ONR's work is aimed now only at considering whether to provide Westinghouse with interim Design Acceptance Confirmation for the reactor in December 2011.



EDF/Areva's EPR™ reactor design
(image courtesy of Areva)



Westinghouse's AP1000® reactor design
(image courtesy of Westinghouse)

Programmes update /3

Defence

Regulating the defence sector, at weapons sites and naval bases, working closely with the Defence Nuclear Safety Regulator.

➤ The Defence Programme's inspection and key intervention strategy milestones are on schedule to be delivered within the identified timescales. However, a number of the licensee's activities across the programme are expected to be delayed, which will have an impact on the Programme's planned assessment and permissioning. Contingency plans are in place to manage these changes with the option to reallocate resource to early engagement activities to minimise overall delays.

➤ In addition to planned work, the Programme managed a number of reactive permissions for Devonport Royal Dockyard Ltd in relation to emergent safety issues. These permissions

were delivered, often to short timescales, to meet the licensee's programmes.

➤ ONR has concluded that the AWE Aldermaston Site 'periodic review of safety' (PRS) establishes an acceptable case for continued operation until the next PRS in December 2019. This statement was qualified by the requirement for the adequate implementation of an associated programme of work to enhance site systems.

➤ Over this reporting period there have been a small number of minor events at AWE that have been the subject of regulatory attention. Whilst the outcome did not significantly affect safety, the licensee has taken the opportunity to consider the implications and to identify learning points to take forward. AWE has confirmed to ONR that it believes that it will not be able to comply with the regulator's specification regarding the treatment of

intermediate level wastes as stated. In co-operation with the Ministry of Defence and Nuclear Decommissioning Authority, AWE is carrying a review of options

to ensure that its resources are used to best effect whilst fulfilling its nuclear waste management responsibilities. ONR will consider the outcome.



HMS Astute, BAE Systems-built nuclear powered submarine
(Image courtesy of BAE Systems)

Sellafield

Regulating all activities at the Sellafield site in Cumbria.

➤ ONR followed up improvements on emergency arrangements with Sellafield and the delivery of sustained improvements across the site. ONR was disappointed in progress in a range of areas including severe accidents, succession planning, Radiation (Emergency Preparedness and Public Information) Regulations (REPPiR) and equipment designation. ONR has written, outlining its concerns to Sellafield Ltd's Managing Director.

➤ The revised highly active liquor (HAL) stocks specification was issued in July. A proactive plan of stakeholder engagement was implemented by ONR with Government ministers, Department for Energy and Climate Change (DECC), HSE, Nuclear Decommissioning Authority (NDA), Sellafield Ltd, the West Cumbria Sites Stakeholder

Programmes update /4



ONR's inspector with a licensee engineer inspects the Sellafield site

Group (WCSSG) and the Norwegian and Irish Governments being fully briefed before the specification was issued. Combined with full disclosure on the ONR website, this approach reflects our commitment to openness and transparency in communicating our regulatory strategy in this area.

➤ A regulatory meeting was held with Sellafield

during the period and ONR took particularly strong lines regarding the need for improved performance with long-term periodic reviews, integrated change programme, internal regulation, emergency arrangements, and fuel flask maintenance. ONR indicated its dissatisfaction, and that it wished to see quicker and more effective delivery of

improvements. The Sellafield Executive recognised the concerns and committed to monitor progress on a monthly basis. Accountable directors were identified and follow-up meetings at a senior level were held on these topics in the latter part of the period, which demonstrated Sellafield's commitment to improve. ONR will now monitor progress.

➤ ONR met with Euratom Safeguards to provide the European Regulator with information regarding our regulation of the First Generation Magnox Storage Pond (FGMSP) and associated Article 82 matters. The ONR presentation was well received.

➤ The announcement and planning for the closure of the Sellafield MOX Plant was done in a considered and controlled way by Sellafield Ltd that should ensure that nuclear safety and security will not be compromised.

Decommissioning, Fuel and Waste

Regulates safety on a variety of nuclear fuel cycle and nuclear research sites, waste management and decommissioning.

➤ A significant achievement for the Programme during the period was the completion and submission to the Department for Energy and Climate Change (DECC) of the Joint Convention Report on the safety of spent fuel and radioactive waste management, which will be presented and discussed at the International Atomic Energy Agency (IAEA) in May 2012.

➤ Formal consultation has started regarding ONR's interpretation of 'Bulk Quantities'. The outcome of the consultation will be used to inform a definition of the storage quantities of radioactive material for site licensing purposes.

➤ We have delivered an

important intervention regarding the proposed Geological Disposal Facility (GDF) for higher activity radioactive waste. A joint regulators' (ONR and Environment Agency) report has been completed on the generic design disposal safety case which concludes that we are confident an adequate safety case could be made presuming an adequate site is identified.

➤ We have continued to progress agreement of the nuclear safety standards for 'early care and maintenance' at Bradwell. As a defined lead station, Bradwell will set a precedent for decommissioning operations at future defuelled reactor sites. Our strategy is to engage early to identify key risks for the site licence company and regulatory organisations.

➤ In January this year ONR hosted a stakeholder meeting, with 21 organisations in attendance, to discuss

Programmes update /5

integrated waste strategies. Building on the main outcome of the meeting, ONR considers that given there is no single producer for radioactive waste within the UK, a national locus or coordinated multiple loci are essential. This strategy has been agreed with DECC and is now published on the ONR website.

- A review has commenced

across the Decommissioning, Fuel and Waste Programme to ensure a consistent and proportionate outcome-focused regulatory approach is being achieved. Site licence company safety directors have been invited to make an input to the review process which we expect to result in a methodology for regulating

lower hazard sites within the existing legislative framework.

- The Improvement Notice issued to URENCO Capenhurst earlier this year has been extended to November 2011. This was anticipated and is to allow all actions to be closed out through additional equipment being fitted to change-rooms.



Trawsfynydd decommissioning nuclear power station
(image courtesy of Magnox Ltd)

Civil Nuclear Security

Regulating security at all civil nuclear facilities.

- The Security Programme has been working closely with industry and officials from the Department for Energy and Climate Change (DECC) in relation to the conduct of an overarching review of security at the UK's civil nuclear sites. This work is being undertaken on behalf of ministers, and in liaison with the Centre for the Protection of National Infrastructure and the Centre for Applied Science and Technology (CAST) to achieve real improvements at the sites.
- A key achievement for Security Programme this period has been overseeing security reviews, conducted by the operators and the Civil Nuclear Constabulary, at a number of EDF and Magnox sites.
- A key issue for the Programme is the continued security reviews at the remaining



A police officer from the Civil Nuclear Constabulary checks a nuclear site perimeter fence

UK civil nuclear sites and will remain so for the foreseeable future. It is noteworthy that DECC has now involved Nuclear Decommissioning Authority (NDA) in evaluating and confirming costings with Sellafield in particular, and Dounreay to a lesser degree. A Challenge Board has been set-up whose purpose is to provide additional rigour to the security enhancement process.

ONR welcomes two board members

This quarter ONR welcomed two new non-executive members to its Board: John Crackett and Steve Bundred. Both bring a wealth of experience to ONR.

John lists Managing Director of Central Networks – the UK's second largest distributor of electricity - and E.ON UK board member among his past job roles. John is also a chartered engineer, with fellowship at two professional institutions. His career has spanned power station design to energy services and distribution businesses. He also advises the Ministry of Defence on electricity generation and distribution.

As well as being a non-executive member of ONR's Board, Steve Bundred joins the organisation as chair of its Audit Committee. His previous non-executive roles include chairmanship of Monitor, the independent regulator of NHS foundation trusts, and the Higher Education Regulation Review Group. He is an accountant by profession and was chief executive of the Audit Commission, the Improvement and Development Agency for



John Crackett

Local Government and the London Borough of Camden. Steve and John join the ONR Board at a significant point as they help to shape the organisation's high-level strategy and vision. The role of the



Steve Bundred

Board is to provide leadership, set strategy and agree the overarching policy framework within which ONR operates as a regulator.
www.hse.gov.uk/nuclear/onr-board.htm.

ONR Board

The Office for Nuclear Regulation is governed by a Board of executive and non executive directors whose purpose is to lead ONR in delivering its mission of securing the protection of people and society from the hazards of the nuclear industry. The Board of nine will set a strategy that provides leadership and sets the overarching policy framework within which ONR operates as an independent regulator.

Stress tests

In addition to [ONR's report to the Secretary of State](#) on the implications of the events at Fukushima for the UK nuclear industry, ONR is now assessing the work of UK operators as they conduct 'stress tests' of their facilities, as requested by the European Council. ONR Superintending Inspector, John Donald explains...

Shortly after the Fukushima disaster in March, the European Council (EC) requested that each member state with nuclear power facilities ensured that operators conduct 'stress tests' of each facility.

The tests are led by questions that have been raised following the events at the Fukushima Dai-ichi plant, which was struck by an earthquake, and subsequently overwhelmed by the resultant tsunami, causing a loss of power and loss of cooling.

They will seek to ensure that the 'design basis' of each plant – the way that flooding and seismic hazards were considered in the plants' design and construction and subsequent 10 yearly safety reviews – are correct and remain valid in the light of events in Japan.

The tests will also look at the safety margins against these hazards to identify potential 'cliff edges' and they will also look at the robustness of the sites against loss of off-site power and implications for loss of cooling.

The tests also ask operators to review arrangements for severe emergencies, to identify potential modifications which would improve the margins of safety.

In the UK, we've gone further than the EC required. In addition to the operating and defuelling nuclear power stations, ONR has asked operators of reprocessing, fuel and waste, defence and defuelled facilities to also conduct stress tests, relevant to their operation.

ONR received submissions from the UK power plant operators as required in advance of its [progress report to the EC](#), which was [delivered, as requested by mid September](#).

Our progress report, which will be followed by a full report before the end of the year, confirms that stress tests have been initiated at all UK nuclear power stations, as required. Submissions and reports on other nuclear facilities will follow.

To date, none of the stress test work by the licensees, or other work and reviews undertaken

in the UK, has indicated any fundamental weaknesses in UK nuclear power plants.

However, in line with the continuous improvement culture we adopt in this country, lessons are being learnt from Fukushima to improve safety. Fukushima is a warning against complacency, and we are finding things that we could do to improve resilience. Licensees are already responding well, identifying practical measures to take forward.

ONR's ambition is to conduct our work with openness and transparency, so subject to security and other constraints, we will be publishing licensee submissions and our reports online in due course, and we will use ONR's Quarterly Report and other channels

to discuss this work and invite questions in the near future.

www.hse.gov.uk/nuclear/fukushima

