HSE

Health and Safety Executive

Nuclear *Newsletter*

The newsletter of HSE's Nuclear Directorate

The Health and Safety Executive's Nuclear Directorate is comprised of HM Nuclear Installations Inspectorate, the Office for Civil Nuclear Security and the UK Safeguards Office.

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Preface

The last newsletter, covering the period June–September 2008, was published later than planned in March 2009. This edition focuses on the remainder of the 2008/09 financial year, October 2008–March 2009, although in a few instances more up-to-date information is provided, for instance the public consultation on Nuclear Directorate's (ND's) proposed future status referred to below, and in respect of staffing and recruitment.

Nuclear Newsletter has normally been based on the Chief Inspector of Nuclear Installation's report to each of the three annual meetings of HSE's Nuclear Safety Advisory Committee (NuSAC). NuSAC reached the end of its period of office in October 2008. The HSE Board reviewed its advisory committee structure in light of the HSE/Health and Safety Commission merger in April 2008 and decided to defer any decision on future arrangements for providing independent technical advice on nuclear safety, pending various reviews.

One of those considerations was the Government-initiated Nuclear Regulatory Review taken forward by Dr Tim Stone. The Summary Recommendations and the Government's response were published at the end of January 2009 (available on HSE's website: www.hse.gov.uk/nuclear/stonereview.htm).

HSE has since been working closely with the Department of Energy and Climate Change (DECC) and the Department for Work and Pensions (DWP, HSE's sponsor department) to take forward the Government's intention to change the status of ND to that of an independent statutory corporation under the auspices of HSE. This is intended to enable ND, as the independent nuclear regulator of safety and security, to better meet the challenges of a changing nuclear industry over the coming years. It is expected that the statutory changes needed to bring this about will be done through a Legislative Reform Order. A public consultation, run by DWP and DECC, on the Legislative Reform Order was launched on

30 June for a 12-week period, and despite being out of the reporting period of this newsletter, it is referenced here to give the maximum opportunity for stakeholders to comment on the proposals. For access to this consultation please see: http://decc.gov.uk/en/content/cms/consultations/hse_restruct/hse_restruct.aspx.

Decisions about providing independent technical advice on nuclear safety will be taken in the light of this consultation.

The proposed change of status requires a significant transition programme for ND which the Chief Inspector is leading. To provide space for this work, it was agreed that the delivery of the Generic Design Assessment (GDA) programme will be headed up by Kevin Allars, one of the Deputy Chief Inspectors, on temporary promotion as the Director for GDA Delivery.

As a result of Kevin Allars' move, Dr Andy Hall has taken over as Head of Division 2, responsible for Nuclear Chemical and Research Site Regulation, and Colin Patchett has been temporarily promoted to HM Deputy Chief Inspector to head Division 1, responsible for Civil Nuclear Power Regulation.

ND remains committed to delivering a responsive, effective and efficient independent nuclear regulatory regime throughout this period of change.

The high level of activity has continued and in the operations area we continue to address issues arising from ageing plant and ensuring the safe decommissioning of shut-down plant. Restructuring of the nuclear industry also presents challenges in assessing competence of new licensees and ensuring that safety is maintained during transition phases.

We are progressing Stage 3 of the Generic Design Assessment of potential new reactors, with a Stage 3 report due to be published in November 2009, but progress continues to be determined by our resource considerations, which are receiving considerable attention during 2009 and are showing some encouraging success.

We are seeking to make information on the work of ND more accessible for the non-technical reader as part of our commitment to greater transparency, so the format and style of this newsletter may well change in the future.

General and policy issues

Changes to Nuclear Directorate

It is a priority to ensure that ND can continue to regulate to its existing high standards in the context of a rapidly changing nuclear environment. The Government has decided it wishes to restructure ND to respond to these recent and ongoing changes, including the demands of a possible new nuclear power programme. The objective is to create a regulator that retains the best of current practice, while building an organisation better able to meet the challenges of the changing environment – a regulator widely acclaimed for its excellence in this new environment. Plans are underway to create a new public sector organisation (remaining within the auspices of HSE) which will have the flexibility needed to respond to the challenges it faces (including addressing staffing difficulties in a sustainable way).

Under the proposals advised in the Preface, legislation will be used to reorganise ND into a statutory corporation and, subject to Parliamentary approval and its calendar permitting, the Government expects this to be place by mid-2010. The restructuring will address most of the recommendations arising from Dr Tim Stone's review of the nuclear regulatory regime.

Additionally, work is in hand to make the internal ND changes, which will be reversible if needed, to enable it to operate as a statutory corporation. A transition team is being put in place.

Chief Inspector's activities

During the period covered by this report, Mike Weightman, HM Chief Inspector for Nuclear Installations and the Director of ND, has been heavily involved in the proposals for ND's transition to a statutory corporation. However, he made site visits to the Devonport Royal Dockyard Ltd and to the Atomic Weapons Establishment (AWE) Aldermaston and Burghfield. A programme of site visits for the remainder of 2009 is in hand.

The Chief Inspector also made international visits in support of the Western European Nuclear Regulators' Association (WENRA), the European Nuclear Safety Regulators Group (ENSREG), and the International Nuclear Regulators Association (INRA) and he attended the International Atomic Energy Authority (IAEA) topical safety issues conference in Mumbai. A bilateral meeting also took place with the Radiological Protection Institute of Ireland. All these visits assist in developing high standards of safety worldwide and enhancing the UK nuclear regulatory system.

(For more information see the 'International' section.)

Staffing

We have had success in the recruitment of new inspectors during the year April 2008–April 2009, recruiting 29 inspectors. These new recruits have come from national campaigns and from two search consultant agencies, who started their first full month of work for us in November 2008. Our most recent campaign went live on 23 March 2009 with a close date of 30 April 2009. As of 1 August 2009 we had made 21 offers of employment and, so far, have had 17 acceptances. Such levels of recruitment will need to continue in future years, given the age profile of ND and its forward work programme. Our next recruitment campaign starts in September 2009.

Safety Performance Indicators

As reported in the previous newsletter, a joint industry/Nuclear Installations Inspectorate (NII) project has been running for four years to develop a framework of Safety Performance Indicators (SPIs) within which licensees can measure and judge their nuclear safety performance. The work has now reached a point where all but two licensees have agreed appropriate indicators and the project is moving forward to the implementation phase. Two new licensees have agreed the SPI approach in principle but have not yet been able to agree actual indicators. Over the coming months, the emphasis will be on managing processes for the analysis and collation of data, and on determining the threshold levels that will indicate when it may be necessary for licensees to take remedial action. The main purpose of the framework is to provide a tool whereby licensees can monitor and judge their own performance. It is intended to complete the implementation phase by March 2010 by which time it is expected that the SPI framework will be proving to be an extremely useful tool for informing the safe management and control of nuclear activity.

National Occupational Standard for nuclear regulation

Over the past six months we have been working with the Nuclear Sector Skills Council, Cogent SSC, and a number of other regulators with responsibility for different aspects of the regulation of nuclear activity, to develop a National Occupational Standard for nuclear regulation. This will consist of a 'core' that is common to all nuclear regulators plus additional elements that will cover the particular activity of individual regulators. This work is one of a number of initiatives to emerge from developments in our competence management arrangements that are likely to run through 2009 and beyond. When complete it will form an important high-level framework to inform the development of more detailed internal ND arrangements, aligned as far as possible with the approaches taken by other nuclear regulators.

Nuclear Directorate Programme Strategy and Operating Plan 2009

The Nuclear Directorate Programme Strategy and Operating Plan 2009 was issued internally on 1 April 2009 and will be available on the HSE website. This is the second year in which ND has published a joint strategy and operating plan. The strategy sets out ND's medium to longer-term aims and the operating plan provides the in-year steps needed to achieve these aims.

Communication and stakeholder engagement

The Regulatory Nuclear Interface Protocol (RNIP) – the agreement between nuclear licensees/dutyholders who are part of the nuclear Safety Directors' Forum, the Defence Nuclear Safety Regulator (DNSR) and ND – was launched in June 2008. The protocol is designed to achieve more effective, efficient and strategic ways of working. The first six-monthly regulators–licensees liaison meeting under RNIP was in October. The meeting reviewed how well the arrangements were working and, in particular, whether

the agreed, shared values and behaviours are being adopted in practice. The liaison meeting endorsed that the ways of working envisaged by RNIP have been widely embraced and are adding value. It was agreed that the feedback process had not proved to be onerous, and that agreeing objectives in advance had been very valuable to the effectiveness of interactions. A few process improvements were agreed (including reviewing the feedback form) and there was some extension of situations where the feedback process should be used.

The European Nuclear Safety Regulators Group (ENSREG) on Nuclear Safety and Waste Management brings together senior regulators from across the European Union and was formerly known as the High Level Group (see 'International' section). One of its three working groups is looking at improving the transparency of nuclear safety regulatory matters. There is an active programme of work and the three main areas are:

- development of a website to improve the accessibility of information for citizens on nuclear regulation (a temporary ENSREG webpage can be found at http://ec.europa.eu/energy/nuclear/index_en.htm but much more information is planned later in 2009);
- reviewing the EU and international legal framework related to transparency; and
- reviewing international practices on openness and transparency – leading to the development of guidance for national regulators.

We are playing a leading role in this latter project, which is being progressed jointly with members of the Working Group on Public Communication (WGPC), under the auspices of the Organisation for Economic Co-operation and Development's (OECD's) Committee on Nuclear Regulatory Activities. WGPC is also active and we are contributing to other projects, which should allow us to enhance our communication practices.

Given the high level of activity that is now going on in government and through the regulators across various nuclear work streams (from potential new build to implementation of geological disposal), ND has reviewed with DECC, the Environment Agency and the Nuclear Decommissioning Authority (NDA) about the co-ordination of consultation and other public engagement processes. We do benefit from stakeholder feedback and want to ensure that the public and other stakeholders have the information they need to understand our distinct roles and responsibilities, that our various activities are presented as coherently as possible and that the opportunities for stakeholder involvement are clear. As a result, a new engagement group, led by DECC's Office for Nuclear Development, has been established to facilitate these objectives and to minimise 'consultation fatigue'. A meeting setting this group up took place in March 2009 and it will replace NDA's Engagement Liaison Group previously mentioned in these reports.

Four issues of the nuclear e-Bulletin were issued between September 2008 and March 2009. This service continues to attract new registrants with well over 3700 people now receiving these updates. This service complements the e-Bulletin dedicated to news on new reactor build (both are available via HSE's website – respectively: www.hse.gov.uk/nuclear/ebulletin/index.htm and www.hse.gov.uk/newreactors/ebulletin.htm).

(See also the 'Nuclear new build' section.)

Emergency arrangements

In January our Emergency Arrangements Team visited the offices of the French nuclear regulator ASN (Authorite de Surete Nucleaire) to observe an off-site nuclear emergency exercise. Information exchange with ASN's emergency preparedness team will continue in 2009 when ASN will observe our training of inspectors in command and control techniques.

The Nuclear Emergency Arrangements Planning Liaison Group (NEPLG) brings together organisations with interests in off-site nuclear emergency planning. At its February meeting NEPLG agreed a number of revisions to the nuclear emergency consolidated guidance developed by ND in conjunction with DECC. The Cabinet Office recognised the maturity of the existing approach to nuclear emergency planning and acknowledged that the arrangements satisfied the civil contingencies requirement of being simple and proportionate.

The Nuclear Emergency Arrangements Forum is a group, chaired by ND, that

provides operators with a forum to co-ordinate nuclear exercise planning and to establish good practice relating primarily to on-site nuclear emergency arrangements. At its March meeting the Forum agreed that its priority for 2009 is to develop the co-ordination of nuclear safety and nuclear security emergency arrangements.

In line with meeting modern standards and continuous improvement, we are completing an upgrade to our Redgrave Court Incident Suite.

Radiation protection

We continued our representation at the National Dose Assessment Working Group (NDAWG) and updated members on progress of the new build project and the revision of the basic safety standards (BSS). A guidance note has been drafted for NDAWG on the assessment of doses due to direct radiation from sites.

Comments on the revision of the IAEA BSS are co-ordinated through our topic lead on radiation protection who is the UK representative on the Radiation Safety Standards Committee. The draft revision is nearing a point where it can be released for member state comments. The revision of the EC BSS (going on in parallel with the IAEA BSS) is being undertaken by a working party of the Euratom Article 31 group of experts. Our topic lead chairs this working party. A draft of the text of the revised BSS is due to go to the full Article 31 group in June 2009.

Leadership and management for safety

We have continued to work on strengthening our regulatory oversight of leadership and management for safety in licensees. We have developed a strategy and an implementation plan that have been endorsed by the ND Management Board. The strategy is intended to be pragmatic and achievable. The implementation plan will be progressed through 2009/10.

The strategy has been framed around the Safety Assessment Principles on 'Leadership and Management for Safety' (MS.1 to MS.4). The goal is to influence and encourage licensees to achieve and maintain high standards of leadership and management for safety, and a strong safety culture, through co-ordinated and sustained regulatory activities. A key objective is to embed leadership, management for safety and safety culture considerations into existing regulatory activities.

Our strategy places specific focus at board/director and senior management levels in licensees and potential licensee organisations through regular, planned interactions. The intention is to maximise regulatory influence by engaging with senior leaders and key decision makers. This draws upon the lessons from major events worldwide in a wide range of sectors. The HSE conference in April 2008 on 'Leading from the Top' further emphasised the need to focus on leadership in major hazard industries.

The strategy has links to other ND projects, particularly Operating Experience (OPEX) and Safety Performance Indicators (SPIs). The ND OPEX team has recently issued an advice note on common traits of major accidents. The ND SPI framework includes 'Positive Safety Culture' encompassing 'Leadership and Management'. Development of indicators in this area can be informed by lessons from implementing the strategy.

Support of the Government's Managing Radioactive Waste Safely (MRWS) programme

ND continues to support the MRWS programme. Recent emphasis has been on the requirements for safe and secure interim storage of higher activity radioactive waste. In interactions with Government, NDA and with the Committee on Radioactive Waste Management, ND has reiterated its objective that there should be robust storage arrangements for the expected storage period, which could include refurbishment and replacement of stores if necessary, coupled with monitoring to determine when such action was needed.

Geological disposal

ND continues to work closely with the Environment Agency to provide regulatory advice to NDA's Radioactive Waste Management Division (RWMD) in their programme of work to deliver a geological disposal facility. Recent advice has concentrated on two key areas: first to develop a regulatory

schedule to ensure that all regulatory requirements are factored into the forward programme in as effective and efficient manner as is possible; secondly to give RWMD advice on developing itself into a prospective licensee.

Operational issues

Operating power reactors

Dungeness B

Dungeness B continues to experience problems with the fuel route. Crimping of fuel plug units on irradiated fuel is still taking longer than estimated. Reactor 21 started up in September 2008 and operated until an automatic trip occurred on 2 January 2009. It restarted soon after and operated until it shut down in March 2009 for refuelling. Reactor 22 started up following its statutory outage in early January 2009. This outage had been extended due to the fuel route difficulties and a large amount of emergent work, particularly on repair of steam headers.

We issued four licence instruments during the period: an approval for an amendment to the maintenance schedule preface to incorporate a 35-day planning cycle; an agreement to the replacement of safety circuit temperature monitoring unit equipment; a Consent to the start up of reactor 22 following its statutory outage; and an agreement to the introduction of machined brace fuel into the reactors.

There was one significant event at the site which occurred on 2 January 2009. Following suspected failure of a guard line trip parameter, an operator intervened to place the parameter into the tripped state as required by technical specifications. Shortly after, a second failure occurred tripping the reactor on a two out of four logic vote. Investigations by the licensee led to improvements in the area of operator logging. We are content with the licensee's response to the event.

Hartlepool

Both reactors at Hartlepool were shut down towards the end of 2007 following the discovery of degradation of the pre-stressing wire windings on the boiler closure units (BCUs) which threatened the integrity of these components. The licensee has carried out significant modifications to the BCUs and we have carried out detailed assessment of the safety case to support the return to power operation. In addition the licensee has made improvements to the plant to improve its capability to withstand internally generated hazards including hot gas and steam release faults and a turbine disintegration leading to a major fire (reported in Issue 44 of this newsletter). Another large project to replace the ageing essential cooling water system has also been completed during the BCU repair outage.

We gave our agreement to the long-term safety case supporting the BCU modifications and agreed to both reactors to returning to power operation in January 2009.

There has been one event reported to us during the period rated as International Nuclear Event Scale (INES) Level 1. During inspection of the sub pile cap area it was noted that some buttresses and bolts were missing from a hot gas release barrier. These have now been replaced prior to return to service. It has not been possible to determine when these items were removed. We are satisfied that improved inspections will prevent a repeat occurrence.

An INES 1 event was reported in the last newsletter – failure to complete maintenance on a high-pressure back-up pump. We have satisfied ourselves that the licensee has completed a thorough investigation and implemented improvements to prevent a repeat event. No further action is considered necessary.

Heysham 1

As at Hartlepool, both reactors at Heysham were shut down towards the end of 2007 following the discovery of degradation of the pre-stressing wire windings on the BCUs which threatened the integrity of these components. This issue has now been resolved in the same way as for Hartlepool.

We have concluded our investigation into the INES Level 1 event reported to ND on 25 June 2008 involving an interlock being defeated without proper process (see *Nuclear Newsletter* Issue 44). We are satisfied that the licensee has identified suitable and sufficient corrective actions to learn from this event. No further action is considered necessary.

Heysham 2

In the period, Heysham 2 Reactor 8 had three shutdowns – two separate manual shutdowns and one automatic shutdown. The first was related to a main bearing in the generating turbine. The second was as a result of cooling water flow to various plant systems. The third occurred during low power refuelling when spurious operation of a pressure switch led to the automatic protection against dropped loads being activated, shutting the reactor down automatically. The licensee has investigated the circumstances surrounding these events and has identified corrective actions to help prevent recurrence. The licensee also took the opportunity to undertake some additional work that needed the plant to be shut down to complete. We are content with the licensee's responses to these events.

A team of our inspectors observed the Heysham power stations' joint site emergency exercise on 25 March 2009. We concluded that the stations had given an adequate demonstration of the emergency preparedness arrangements. We identified some learning opportunities and these were communicated in a letter to site. The joint site exercise is a five-yearly event when both stations rehearse their arrangements in parallel but it is led by one station as its primary annual exercise.

No events have occurred that have challenged the station's safety case, and no events have been reported above a rating of 0 on the INES scale.

Hinkley Point B

Hinkley Point B Reactor 3 underwent periodic shutdown between 19 September and 4 December 2009. During this shutdown period an extensive graphite core inspection programme was undertaken. Thirty-one channels were inspected to provide confidence in the continuing integrity of the reactor core and core restraint system. The outage programme also included the inspection of all boiler tube bifurcations and superheater tailpipes, plus the removal of samples for metallurgical examination. In addition, modifications were installed to improve the boiler tube failure safety case. This included the installation of bursting discs in the pre-stressed concrete pressure vessel safety relief valve discharge line and modifications to improve gas circulator endurance, in the event of water ingress.

A site emergency exercise was held on 25 February 2009, which we considered to be an adequate demonstration of the emergency arrangements at Hinkley Point B.

During the reporting period, fire damper provision, inspection and maintenance was a particular area for our attention; there were shortfalls in the arrangements for inspection and testing. As a result, the licensee is making improvements in a number of areas.

An issue concerning the failure of gas circulator motor rotor bars emerged during the reporting period. The licensee has identified the root cause of the problem and has begun a programme to refurbish all gas circulator motor rotors. We have had discussions with the licensee regarding proposals to enhance the reactor shutdown protection systems. These enhancements would support improvements to the graphite core safety case, which may become necessary in the future. The licensee has presented plans to enhance the capability of the nitrogen injection system used to ensure long-term hold-down of a shutdown reactor.

There have been no significant incidents on the site during the reporting period (rated at above INES 0).

Hunterston B

For most of the period both of the Hunterston B reactors operated at about 72% of design power to remain within the boiler tube safety case limits.

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We have had discussions with the licensee regarding proposals to enhance the reactor shutdown protection systems. These enhancements would support improvements to the graphite core safety case, which may become necessary in the future. The licensee has presented plans to enhance the capability of the nitrogen injection system used to ensure long-term hold-down of a shut-down reactor.

There have been no significant incidents on the site (rated above INES 0).

Oldbury

In accordance with a decision by Magnox North and NDA, Oldbury was scheduled to permanently close on 31 December 2008. However, due to changes in the Magnox Operating Programme (MOP), a decision was taken by the licensee to seek to operate beyond this date. The licensee had previously submitted a Periodic Safety Review (PSR) in September 2007 and on the basis of this we had no objection to continued operations, until the end of 2008. The licensee sought to revalidate its PSR for generation beyond 2008 and submitted a further report to us for our consideration. We carried out a series of focused assessment and inspection activities in connection with the PSR revalidation report, and issued a letter of no objection to continued operation of Oldbury beyond 2008.

We have completed our assessment of the Oldbury graphite safety case and are content with Reactor 1 and Reactor 2 operation in accordance with the core irradiation limits justified in this safety case.

Reactor 1 returned to service on 7 March 2009. Before its return to service the licensee had inspected 100% of graphite bricks of fuel channels located in the flattened region of the core and has agreed to a programme of further inspections in the event of any future full power trips. During the next statutory outage, the licensee has agreed to carry out further television inspections, take further graphite samples, and carry out further measurements of fuel channel geometries.

To support the graphite safety case, the licensee submitted a safety case for installation of a fuel integrity monitoring system (FIMS). We assessed the submission and issued a licence instrument 'Agreeing' to the proposal. FIMS was installed on Reactor 1 before its return to service and the licensee is currently installing FIMS on Reactor 2. The design of FIMS is based on the detection, by scintillation counters, of the gamma radiation emitted by the decay of gaseous fission products released from exposed fuel. The gas samples will be taken from each of the four reactor circuits to three separate gas monitoring cubicles. Each cubicle will generate an alarm; the operator will be instructed to trip the reactor immediately if two out of three alarms are initiated.

Reactor 2 was shutdown on 12 February 2009 to comply with maintenance schedule requirements. Before its return to service in 2007, 100% of graphite bricks of fuel channels located in the flattened region of the core had been inspected. The licensee has agreed to a programme of further inspections in the event of any future full power trips. We are content with the operation of this reactor until its core irradiation limit, justified in the graphite safety case, is reached. The findings from the Reactor 2 outage programme are currently being assessed by our specialist inspectors, who have visited the site on a number of occasions and have inspected maintenance, tests and inspections undertaken by the licensee.

Sizewell B

There were three unplanned reactor trips at Sizewell B reported since the last newsletter: on 19 September 2008, 8 November 2008 and 29 January 2009. All were reported at an INES rating of 0. Historically, the station's operational performance has been good with no more than three reactor trips per annum since 2000 and an average of less than one per annum in 2003 to 2007. The licensee has investigated the three trips individually and collectively with the trip on 27 May 2008 (reported in our previous newsletter). The licensee has made changes to reduce the potential for reoccurrence for each event. The licensee has also introduced a trip reduction program and incorporated it within a systematic review of plant systems initiated last year. Potential reliability improvements were identified and prioritised and their implementation program has started. We inspected the trip reduction program and its outputs during the first phase of application and judged that it should result in improvements to secondary systems' reliability and fewer challenges to the reactor primary systems and trip logic.

Following our letter on grid disturbances described in the last newsletter, British Energy (BE) confirmed the adequacy of grid protection at most sites and proposed changes to the protection settings and equipment at others. We are monitoring

the introduction of these changes. BE are planning a further evaluation of grid and over-voltage protection in light of an event in Sweden in 2006.

There were no licence instruments or enforcement notices issued during the period. There were no significant events reported above an INES rating of 0.

Torness

The British Energy Periodic Safety Review 2 submission was submitted to NII in March 2009. We are assessing the reports and plan to complete the work by the end of 2009.

We carried out follow-up inspections of the Active Solid Waste Building in January and February 2009 in response to issues we raised during a joint ND/Scottish Environment Protection Agency (SEPA) inspection in December 2008. Remedial work is underway but further improvements are required; the work is ongoing.

The licensee has agreed to produce a safety case assessment to justify operation with the hot gas and steam release louvres permanently open in response to issues raised following an NII inspection. The station safety report currently expects the louvres to be normally closed. Station staff have used the louvres to assist in providing heating and ventilation of the reactor and support buildings on the basis that, if the louvres are open, they should be in a safe configuration. The safety justification is expected to confirm this assertion.

Reactor 2 started the 2009 periodic shutdown on 4 April. We are monitoring activities and will review the outcome of inspection and examinations as necessary. To date no issues with the potential to affect start-up have been notified to NII. The planned activities are broadly on programme to complete the work with a planed restart date of 16 May.

We observed the 2009 Level 1 emergency exercise in March and deemed it to be an adequate demonstration of the arrangements. However, a list of areas for improvement has been provided to the licensee.

There were no enforcement notices issued during the period. There were no significant events reported above an INES rating of 0.

Wylfa

Both Wylfa reactors R1 and R2 have been operating at nominal full power throughout the period other than for short periods which were due to operational reasons.

HSE is the UK Competent Authority for the Nuclear Reactors (Environmental Impact Assessment for Decommissioning) Regulations 1999. As part of our duties under this Act, we have had a number of stakeholder interactions as part of the consultation process on the decommissioning proposals put forward by the licensee. On 25 March 2009, HSE granted a Consent for Wylfa to start decommissioning operations. It should be noted, however, that the licensee has not yet started the decommissioning process. We are continuing to engage with the licensee to assess proposals to extend the operational life of the power station beyond 31 December 2010. There are a number of workstreams in progress which include assessment of the licensee's safety case, arrangements for defueling, and compliance with NDA's Magnox Operating Programme (MOP).

A three-day co-ordinated inspection involving a number of our inspectors was completed in October to examine local arrangements for timely delivery of NDA's MOP. We noted that preparatory work was in hand and welcomed a number of initiatives to improve the site's readiness for defuelling operations. Advice was given on the need to ensure appropriate contingencies were identified and put in place. It was agreed that we would continue to monitor progress at Wylfa during 2009.

The licensee reported that a leak of clean carbon dioxide had occurred from a pressurised tank on 7 October resulting in slightly elevated gas concentrations both on and off site. Station personnel were fully accounted for and on-site access restrictions were temporarily put in place while corrective measures were taken by the licensee. There was no threat to reactor safety or public safety. Our follow-up concluded that the licensee's response was appropriate.

A Level 1 emergency exercise was held on 7 January 2009 to demonstrate the adequacy of emergency arrangements at Wylfa. We identified a number of issues especially the unacceptable length of time taken to recover casualties from the reactor

building. We have asked the licensee to repeat the exercise to fully demonstrate its arrangements.

We are monitoring the licensee's proposals to accelerate the programme for removal of damaged fuel from one of the Wylfa dry store cells. This work is proceeding safely and is expected to be completed at the end of 2009.

We carried out an inspection, assisted by specialists from a contractor, to examine the arrangements for maintenance of safety-related structures at Wylfa site. A number of good maintenance practices were observed and it was concluded that in general the condition of civil structures was good. Advice was given relating to the need to consider long-term environmental challenges to concrete structural members.

Decommissioning/defuelling power reactors

Berkeley

Magnox South Limited has notified us of a proposal to reduce the manning levels at Berkeley to minimum. We have specified that this change is submitted to us and not implemented without our agreement.

Safety performance at Berkeley in the reporting period has been acceptable and no events have been rated above 0 on the INES scale.

Bradwell

Work has continued on decommissioning the ponds complex. The licensee is trialling four methods of decontaminating the pond walls before draining. We inspected the ponds work and noted that the licensee was currently improving their process for controlling the work. No issues were found; however, a further inspection will be conducted when these improvements are in place.

The Low Level Waste Management Facility is now undergoing a period of inactive commissioning following construction.

There have been no significant events during this reporting period, and none above INES Level 0.

Calder Hall

Calder Hall used to stand apart from the Sellafield site because it is a reactor site, and as such it managed its own emergency response in a similar manner to other reactor sites. As part of the transition process to incorporate Calder Hall into Magnox Reprocessing, now that it is shut down and waiting for defueling, Sellafield agreed to demonstrate that Magnox Reprocessing has adequate arrangements to deal with an emergency situation at Calder Hall. We observed an exercise to demonstrate these arrangements on 13 January 2009. Although Sellafield Ltd coped with the scenario, there were some shortfalls in the arrangements and their implementation and we welcomed Sellafield's response that it was not satisfied with its own performance and that it would offer another demonstration after making improvements.

Chapelcross

We reported in the last newsletter that, in July 2008, we issued a licence instrument agreeing to the start of defuelling of Reactor 1. Shortly after starting defuelling the site found fuel that was stuck in the core. The stuck element machine had been built to cater for this, but had to be commissioned to release the fuel. The movement of this fuel off site has been slow due to issues elsewhere within the nuclear industry. This led to two delays to the movement of filled fuel flasks across the country. Consequently only a small number of fuel elements in the reactor cores have so far been despatched to Sellafield. Preparations to start defuelling the other three reactors are continuing.

Chapelcross Level 1 Emergency Exercise 'India' was held in April 2008 and did not provide an adequate demonstration of the emergency arrangements due to problems with the site's mustering system. As a result we placed a number of requirements on the site, which have now all been satisfactorily completed. One of these was for a further demonstration of the site's arrangements. We witnessed Level 1 Emergency Exercise 'Julie' in October 2008 and concluded that this did provide an adequate demonstration of the site's arrangements.

The site is required to undertake a Periodic Safety Review (PSR) of its safety case every ten years. The licensee should have submitted a PSR to us in March 2008, but, with our agreement, this was delayed until November 2008. Our decision date on the adequacy of the PSR and the proposed improvements will now be November 2009.

Dungeness A

The defuelling of Dungeness A has progressed slowly due to operational issues at the Sellafield evaporator plant and fuel flask embargos. The site made good progress on renewing the weather envelope of the reactors and securing essential electrical supplies.

Dungeness A did not provide an adequate demonstration of its emergency arrangements and will repeat the demonstration in 2009. The reasons for not accepting the exercise as an adequate demonstration were emergency access issues and emergency team personal safety.

Safety performance at Dungeness A in the reporting period has been acceptable and no events have been rated above 0 on the INES scale.

Hinkley Point A

There has been one significant incident during the period when a de-cabling team accidentally cut into a live electrical cable that was thought to be dead. No one was injured in this non-nuclear accident but we investigated the circumstances around this incident to determine if there were any endemic procedural failures. We identified a number of failings and the licensee developed a satisfactory improvement programme. The licensee has since conducted a number of safety stand-downs to disseminate the lessons learnt around the site; these lessons have also been communicated throughout Magnox South and North sites.

The licensee is currently preparing a safety case to support removal of the final fuel fragments from the ponds. This case will support recommissioning a limited section of the fuel route on both reactors. The licensee is continuing with size reduction of contaminated skips before shipment to the USA for re-melting.

Hunterston A

The largest remaining nuclear inventory on site is in the fuel element debris vaults. A project is underway to empty the vaults and we are monitoring progress. We visited the manufacturer's works to see the handling equipment that will process the waste before its encapsulation and storage on site.

We inspected implementation of the site's arrangements for maintenance including that carried out on cranes. The inspection revealed that some of the maintenance had not been completed correctly. While this did not significantly affect safety, the licensee had failed to comply with its maintenance arrangements made under the site licence. The licensee assessed the event and declared it as INES Level 1. We required the licensee to undertake a thorough review of all maintenance completed in the previous 12 months to ensure that there were no further instances of incomplete maintenance.

The site's annual review of safety was held at the end of January. This did not identify any significant issues but we did identify areas that would need particular attention at future reviews.

Sizewell A

We have approved a revised emergency plan to bring into operation a new Emergency Control Centre and Access Control Point.

Safety performance over the period has been acceptable and no events have been rated above 0 on the INES scale.

Trawsfynydd

We inspected the adequacy of the site's arrangements for maintaining civil structures. We investigated the maintenance schedule elements that are relevant to civil structures, and then inspected a sample of structures on site to observe the general quality of maintenance work. We found that, historically, the arrangements had not been adequate, but that the licensee was aware of this and had made substantial recent progress to improve arrangements. Age-related degradation was noted on some of the structures and this was being addressed by the licensee. One issue that arose was that the link between the nuclear safety requirement of civil structures and relevant safety cases required better definition.

Decommissioning, waste retrieval and conditioning activities are progressing for both solid and liquid intermediate level waste. Civil enabling work continues on the north fuel element debris project. The licensee is currently commissioning a facility for processing fuel element debris from the south vaults. We inspected this plant and issued a license instrument to allow further active commissioning of the facility incorporating safety improvements to the process.

There have been no significant events over this reporting period, and none above INES Level 0.

Nuclear fuel cycle facilities – Sellafield Ltd

Sellafield transition

The successful bidder that resulted from the NDA competitive tender process for the parent body organisation (PBO) role for Sellafield Ltd was Nuclear Management Partners Ltd (NMPL), a partnership between URS Washington, AMEC and AREVA. Share transfer to the new PBO for Sellafield Ltd was completed on 24 November and the transition led to the appointment of a new Sellafield Executive made up of secondees from the PBO.

We have completed a number of activities to gain assurance regarding the transition to the new PBO. Latterly these included direct engagement with the prospective NMPL secondees to provide them with an insight into current regulatory issues and a review of the Management of Change (MoC) submission from the licensee, as required by Licence Condition 36. We were satisfied that the MoC submission demonstrated a considered approach and provided an acceptable justification for transition and licence instruments were issued for Sellafield and Windscale on the 20 November to allow the transition to take place.

Since the share transfer date we have continued to monitor the impact of the parent body transition through all levels of the licensee's organisation. It is our view that the initial phase of transition has had a positive effect on the site with regards to improved focus on safety. The Sellafield workforce appears enthusiastic regarding the transition and is supportive in wanting to deliver improvements; this should further serve to enhance safety on the Sellafield site.

Over the last few months Sellafield Ltd has employed a range of expert teams on the site called the Partner-assess-innovate-sustain (PAIS) teams. They have been tasked with reviewing the organisational structure and processes on site, with the goal of bringing good practice to the site in a wide range of areas and topics. We have actively sought to engage with the PAIS teams to ensure that regulatory issues are captured in subsequent recommendations and actions, with the aim of applying regulatory leverage at the most appropriate point and to the best effect.

We are conscious that the major impact of the transition has yet to be felt. The impact of the PAIS teams through the expert teams' recommendations on the licensee's organisation is likely to be far reaching, and we will continue to focus its efforts on the developments on site in these areas to ensure that safety is enhanced.

Life Time Plan

Sellafield Ltd, NDA and the various regulatory bodies continue to engage on the topic of the Life Time Plan and funding. The regulatory expectations have been made very clear to the licensee and NDA regarding the content of the plan as it is developed and NII's basic requirement continues to be the justification of ongoing safety on the licensed site.

Life Time Plan 09 for the site has recently been received by the regulators and timescales for major projects were projected to slip, in some instances by significant periods; this is particularly so in the legacy ponds and silos area. As a result of our regulatory influence, Sellafield Ltd has initiated a fundamental review of its high-hazard projects to fully examine the impact of the revised programmes. If the impact assessments indicate that the plan could lead to a position where an adequate justification of safety is not practical then the project strategy will be reviewed, remedial measures agreed and a revised plan produced.

Intermediate level waste specifications

We wrote to Sellafield Ltd in late 2008 regarding the delays in major work streams and hazard reduction projects in the legacy

ponds and silos area at Sellafield, and the potential non-compliance by the required date with the existing specifications we have in place that require the recovery and passivation of the waste contained therein. We stated that protracted delays are unacceptable and highlighted the regulatory implications of failure to meet the requirements of the specifications. We requested that Sellafield demonstrate they have done everything so far as is reasonably practicable to achieve compliance with the specifications. We have received an interim response from the licensee, but the majority of the information required to answer our queries will be submitted later in 2009.

Emergency preparedness

We have commented in the past about the degree of challenge presented by scenarios the licensee has developed to drive the Level 1 emergency exercises at Sellafield. A team of our inspectors observed Level 1 Emergency Exercise 'Heron' on 27 November 2008 to assess the Sellafield Ltd response under the emergency plan to an incident associated within Sellafield High Level Waste Plants (HLWP). The inspectors who observed the emergency exercise recognised that the level of challenge from the HLWP scenario was significant and placed a great deal of demand on many areas of the Sellafield response organisation, which can take credit for successfully dealing with one of the more onerous exercise scenarios adopted by the licensee.

As a result of regulatory pressure, the licensee is currently revisiting its forward programme of Level 1 exercises, with a view to ensuring that plants which represent the more significant hazards and risk on the site are proportionately represented.

We have asked the licensee to progress the implementation of integrated emergency arrangements for the Windscale and Sellafield sites via a single emergency plan. We have agreed with Sellafield Ltd that this should be completed in a controlled manner at the earliest opportunity; our expectation is that Sellafield Ltd will be in a position to start implementing the integrated emergency arrangements and emergency plan in the near future.

Sellafield contamination incidents

A number of events have occurred at Sellafield over the last few months involving minor leaks from pipes and ducts on the site that have led to instances of ground contamination. These have not resulted in releases off site but they do demonstrate areas for improvement by the licensee. We have asked Sellafield Ltd to review the events, to establish whether there are any common cause issues, to ensure it is able to address them and to prevent further reoccurrences. Some of these events stimulated international interest from Ireland and Norway. We have actively engaged with representatives from these countries to provide them with details of the events.

Site-wide Sellafield interventions

We continue to progress site-wide interventions at Sellafield in areas where we believe regulatory effort should be targeted:

- We have issues about inconsistency in operational practice on the site for some time and we have influenced Sellafield Ltd to initiate a programme of work under the banner of 'Conduct of Operations', which the licensee is hoping to use to establishing Sellafield as the world benchmark for good practice in Conduct of Operations.
- Inspections of Sellafield Ltd's arrangements for the management and control of contractors working on the licensed site revealed a number of areas for improvement including control and supervision arrangements, communications and dose management.
- An inspection of Operational Experience Feedback has revealed improvements are necessary in a number of areas to ensure that data is analysed appropriately, repeat events avoided, good practice recognised and lessons from events at other sites reviewed.
- Work involving NII, the Environment Agency, the licensee and NDA has led to a document being developed by Sellafield Ltd which aims to define the principles behind good asset care that the site will adopt and which may eventually be shared with the wider UK nuclear industry.
- The conduct of maintenance is being pursued with Sellafield Ltd to ensure a consistent approach to maintenance of safety-related plant on the site and our efforts will continue in this area for sometime in the future.

Sellafield decontamination facilities

The availability of adequate facilities for the decontamination of plant, equipment and material is an important issue for the site, to ensure that it is able to deal with the volumes of contaminated items that are generated as a result of its activities and avert the need to store increased volumes of contaminated items. We have expressed disappointment to Sellafield Ltd regarding the lack of an overall site strategy for the provision of decontamination facilities. We believe the issue needs to be addressed as a priority and we are now actively pressing the licensee to ensure a strategy is developed.

Infrastructure – plant services and site services

We have discussed the introduction of a new management organisation and potential further organisational/operational changes associated with the National Nuclear Laboratory operations on the Sellafield site. The Analytical Services Laboratories provide a support service role to operations across the whole Sellafield site. However this is an 'old' facility and although there are a significant number of ongoing improvements, we have engaged with Sellafield Ltd to ensure that a strategy is developed and funded to maintain or replace the Analytical Services facilities. A number of events have been followed up with Sellafield Ltd including a minor deflagration event at the Analytical Services Laboratories and the loss of compressed air supply to the site. We consider that Sellafield Ltd undertook appropriate immediate action following these events.

Magnox reprocessing operations

During late 2008 there were planned outages at several plants in this operations unit to allow an extensive programme of inspection and maintenance. As in previous outages, we inspected and assessed some of the work, either because of its hazard potential or because of its importance if the plants are to fulfil their task of completing the reprocessing of the UK's Magnox fuel. The plants returned to normal operations in January.

For the fuel handling plant we have continued to assess the licensee's safety case for safety systems that prevent exposure of workers to high dose rates, and to press for improvements to some of those systems. Our assessment of the integrity of the fuel storage ponds in that building also continues.

In January a small leak of radioactively contaminated water from a ventilation condensate line was repaired. The leak occurred well within the site boundary and there was no potential for contamination beyond the site boundary. No emergency measures were necessary although access to the immediate area of the leak was restricted. The event was of minor safety significance, with no implications for other sites; no workers were affected. No immediate regulatory action was judged necessary, but as a number of deficiencies have been revealed the Environment Agency and HSE are working together to investigate the incident and consider regulatory action.

Plutonium finishing and storage (PF&S)

The Stores Inventory Retrieval Project (SIRP) has experienced delays since March 2008 following the identification of a fault scenario that had not been considered during production of the safety case. This omission was addressed and additional engineered interlocks were installed on equipment involved in the transfer process. SIRP operations restarted in late January 2009.

During the previous reporting period, we completed an inspection on the licensee's implementation of the PF&S Continued Operation Safety Report (COSR) which had fallen significantly behind programme. Sellafield Ltd wrote to ND at the end of August 2008, justifying the delays to the COSR implementation programme and committing to a detailed, resourced and achievable programme for completion of outstanding recommendations. We carried out an inspection in January 2009, the outcome of which was satisfactory. We recommended that the COSR be closed out with the exception of civil improvements. The licensee stated that it would aim to fast-track completion of the strategy for civil engineering improvements and to develop work programmes for their implementation, so that civil engineering improvements might be dealt with as a project outside the COSR. The COSR was closed.

Sellafield MOX plant (SMP)

NII is due to start assessing the first in a series of submissions from the licensee that will scope a number of modifications to the plant to allow it to finish the latest

fuel campaign. The work will culminate in a final submission from the licensee this summer, which will look to enable the site to commission the SMP export route and allow the export of fuel to its customer.

Highly active liquor (HAL) stocks

We have completed the latest (2008) biennial review of HAL stocks and our proposals regarding refinements to the monitoring arrangements are currently being discussed with Sellafield Ltd.

Highly active storage tanks (HASTs)

Sellafield Ltd's recent inspections of HAST thermocouple pockets have indicated that the rate of corrosion in the HASTs is significantly lower than in the evaporators. Sellafield Ltd has attributed this to the inhibiting effect of nitrogen oxides that are present in stored HAL but not under the conditions found during processing in the evaporators. These findings will be used to inform the assessment of the risk from process side corrosion under normal and elevated temperature storage conditions. The deterioration of the HASTs from the progress of waterside corrosion has continued but there is no evidence that its rate has increased over the last six months.

Two incidents are currently being investigated. The first, on 1 April 2009, related to the loss of cooling water to the highly active storage tanks and evaporators. This arose as a result of the cooling water draining out of the cooling circuit through an open valve that should have been closed. Sellafield restored the cooling water within 4.5 hours. There was no radioactivity release and no one was injured. The plant remained well within the safe operating envelope, boiling of the high active liquors would not have started until more than a day after complete loss of cooling water to the highest rated tanks. Nevertheless this is a significant event and we are undertaking a formal investigation; it is noted in this October 2008–March 2009 report because of this.

The second investigation followed the discovery that the cooling water flow to HAST 9 jacket had been isolated for some considerable time. Cooling water continued to be supplied to the tank cooling coils. Investigations continue on the significance of this event.

Highly active evaporators

All three evaporators within the Highly Active Liquor Evaporation and Storage plant (HALES), referred to as Evaporators A, B and C, are currently permissioned to evaporate highly active raffinate produced during reprocessing and to process effluent from the waste vitrification plant. In recent months, Evaporator B has been processing Magnox raffinates while Evaporator C has been on oxide duty.

We have continued to engage Sellafield Ltd on the provision of new evaporative capacity and we are working closely with Sellafield Ltd, the Environment Agency and NDA on opportunities to accelerate Evaporator D while ensuring that the safety of design and construction is not compromised. The assessments of the pre-construction safety case for Evaporator D are progressing. Groundworks for Evaporator D are completed and work on the base is expected to start by mid-2009.

HALES overdue plant maintenance schedule items

On 28 November 2007 NII was informed that a significant number of activities on the plant maintenance schedule for HALES were overdue. Some had been overdue over an extended time period.

NII has finished its formal investigation and reporting of the incident and has conveyed to Sellafield Ltd the outcome of our work and requested action against a number of recommendations. It is our opinion that the HALES overdue maintenance incident was caused by the failure of the teams within HALES to undertake examination, inspection, maintenance and testing of the HALES facility in a timely manner. The reasons for this were that there was a lack of experienced engineers and the teams were poorly managed and under resourced. In early February NII issued a specification under Licence Condition 6(5) placing a duty on Sellafield Ltd to submit to HSE a biannual report of maintenance delivery. Meanwhile NII continues to engage with Sellafield Ltd on the development and implementation of its improvement plan.

Waste vitrification plant (WVP)

A significant event occurred on WVP Line 3 when shield doors moved in an unexpected manner. This event has led to an in-depth investigation into the systems associated with shield

doors on this and other plants and it is likely to be some time before Line 3 recommences normal operations.

Residue export facility (REF)

REF is currently progressing stage 2 of the active commissioning process involving the inspection cell, buffer storage and the flasking area. The final stages of commissioning will involve the activities associated with the movement of transport flasks loaded with product containers out of the REF building and eventually to their final overseas destinations.

REF commissioning has been interrupted by two significant events. In one of these, the hoist associated with the transfer of product flasks from REF to the vitrification product store incurred a fault that led to a product container being trapped inside the transfer flask. In the other event, faults were identified in the response of gamma monitors in the inspection/buffer store area. We are currently continuing our inspection of both these events and assessing Sellafield Ltd's recovery proposals.

Waste treatment complex

Stage 2 of the maintainability and operability trials continues as part of the phased restart following the major injury accident to a worker in October 2006. The number of drum compactions per shift has increased as part of establishing the optimum throughput balancing operability and maintenance consistent with maintaining good safety standards. The submission of a safety case to progress to stage 3 of the trials has been delayed and is now anticipated later in 2009. Sellafield Ltd has upgraded the assay suite to broaden the feed envelope and increase the numbers and types of drums which can be handled by the plant.

Plutonium contaminated material (PCM) stores

Sellafield Ltd has continued to plan the safe recovery of the leaking stillage identified in one store. This should not only resolve the risks from the leaking stillage but also provide useful information on the practicalities of handling such situations. Such information will assist in considering the implementation of improvements to the containment of all the stillages as an interim measure pending the provision of safe passive storage, as required by our specification.

We assessed and agreed Sellafield Ltd's safety case for the provision of drum stillages in Engineered Drum Store 3 (EDS3). These will increase the capacity of EDS3, and improve the storage method for PCM drums.

Following the incident in store EDS1 involving an aerial release of plutonium from a leaking drum, Sellafield Ltd have introduced a series of process improvements to prevent a recurrence.

Thermal Oxide Reprocessing Plant (THORP) Operating Unit

Shearing operations

Sellafield Ltd resumed a campaign of fuel shearing in early October and completed the work in early November. The sheared fuel was dissolved and held in buffer tanks awaiting the resumption of reprocessing. Sellafield Ltd resumed fuel shearing in mid-January and continued intermittently until the end of the period.

Reprocessing operations

The reprocessing plant remained shutdown until mid-January as work continued on the replacement and commissioning of the medium active salt-free evaporator (MASFE). The active commissioning of MASFE started in mid-January and this allowed the restart of the reprocessing plant. However, the restart was curtailed because of problems with chiller units on the plant. The latter problems were resolved and reprocessing began in mid-March and continued for the rest of the period.

Plutonium operations

The processing of plutonium nitrate liquor, held in tanks from a previous reprocessing campaign, was suspended until mid-January due to sealing problems. These problems were rectified and around four tanks of the nitrate had been processed at the end of the period.

Sellafield Ltd continued to make improvements to deal with potential fires leading to nuclear events, and we discussed future improvements to the site-wide process for dealing with such fires. Sellafield Ltd also introduced additional nuclear safety-related controls on the ventilation system.

Pond operations
The caesium removal skip continued to reduce caesium levels within the receipt and storage ponds. The caesium arose from advanced gas-cooled reactor (AGR) fuel failures resulting from the ingress of chloride that occurred after a roof failure in 2005. However, in October high levels of chloride were again reported. On investigation Sellafield Ltd discovered additional leakage paths for chloride ingress. These paths were removed by Sellafield Ltd

In November, after consultation with us, the Environmental Agency issued a temporary variation notice to raise the permitted discharges of caesium for six months. This allowed greater purging of the ponds to reduce chloride levels. As well as reducing caesium and chloride levels, purging also caused a drop in pond water and concrete temperatures which increased pond leakage rates to the sumps designed to accept this. The increased leakage rates were not unexpected. We are investigating this, together with other matters related to the integrity of pond structures.

Sellafield Ltd continued to look into various options to deal with AGR fuel corrosion. We are monitoring progress on dealing with these options.

During late September inspections of the receipt and storage ponds were undertaken with Sellafield Ltd against the WENRA Safety Reference Levels for waste and spent fuel storage. A submission based on this work was produced by us as part of the UK 2008 contribution to WENRA on spent fuel storage. The submission was very favourably received later in the year by WENRA.

Multi-element Bottle Export Facility
Active commissioning of the facility continued; however, Sellafield Ltd found higher than expected residual activity within the multi-element bottles (MEBs). Sellafield Ltd therefore needed to extend commissioning to determine the safe operating envelop for MEB removal. In late December Sellafield Ltd applied to extend active commissioning from using 50 to 150 MEBs. We processed this application and granted an extension in mid-January.

Other THORP matters
THORP Operating Unit staff recognise that improvements are needed to ensure the timely completion of investigations following events. Improvements are in hand and we are monitoring progress. The reporting culture continues to improve and the fundamental requirements are in place. Sellafield Ltd has also agreed to introduce improved arrangements covering the reporting of events, particularly to us, and to implement these improvements quickly.

The nomination of a lead manager for emergency arrangements to progress good practice across the Operating Unit was a welcome improvement, as was the reintroduction of training on use of breathing apparatus for operational staff. Sellafield Ltd agreed to consider the introduction of nuclear controls on the availability of communications equipment needed for nuclear emergencies. We will monitor progress.

Sellafield Ltd – Windscale

We are continuing discussions with Sellafield Ltd Windscale regarding further integration of the Windscale site into the main Sellafield Site. We continue to monitor progress on the decommissioning project work at Piles 1 and 2, Windscale Advanced Gas Reactor (WAGR) and B14. Sellafield Ltd Windscale is currently engaged in the final stages of the WAGR reactor vessel removal and the project to remove the Pile 1 west air inlet duct has begun. We continue to monitor progress on the extensive programme of improvement projects within the active handling facility at Windscale. We have reviewed a number of 'unusual occurrence reports' relating to the active handling facility operations with Sellafield Ltd Windscale, including the discovery of a 'non-compliant' source within a waste basket, and a possible 'breach' of an operating rule at Cave 5. We consider that Sellafield Ltd Windscale undertook adequate immediate actions following these occurrences and has completed thorough investigations.

Sellafield Ltd – Capenhurst

The overall safety performance of the site remains good.

Our interventions have continued to focus on ensuring that the structure and resources available to the licensee remain adequate to ensure nuclear site licence compliance as the hazard on the site reduces, and on the desirability of early disposition and 'deconversion' of legacy uranium hexafluoride ('Hex Tails') to the less potentially hazardous oxide form of uranium.

The licensee has continued to make generally good progress with site-wide decommissioning and solid radioactive waste disposals, together with the recycling of non-radioactive decommissioning materials.

A containerised low-level solid radioactive waste road shipment, en-route from the site to the low-level waste repository at Drigg, was involved in a road traffic event on the nearby A41 in January. The 'third-height' ISO container, containing solid low-level radioactive waste, was being transported when the rear bogie became detached from the trailer, the end of which dropped onto the road. The waste container remained locked to the trailer. There was no leakage of radioactive material. Some shortfalls were later identified in the control of the securing of the two parts of the (extendable) trailer. We liaised with Cheshire Constabulary and the Department for Transport in responding to this event. We assessed the licensee's prompt investigation, together with their wider review of transportation issues, and concluded that this had been rigorous and wide-ranging, with lessons having been learned and widely promulgated.

We witnessed an emergency exercise in November and deemed this to be an adequate demonstration of the licensee's emergency arrangements. Effective co-operation was demonstrated between Sellafield Ltd (Capenhurst) and Urenco UK Ltd.

The continuing exemplary work of the safety representatives at the site and their proactive 'Safety First' programme was supported by our participation at a well-attended site event in March. The safety representatives' work promotes a generally strong safety culture at the site.

Other nuclear fuel cycle facilities

Urenco UK Limited – Capenhurst

The overall safety performance of the site remains good.

Our interventions have continued to focus on the need to permission the licensee's commercial activities, ensure that the structure and resources available to the licensee remain adequate and permission arrangements for the safe storage and timely 'deconversion' of the 'Hex Tails'.

In February we provided further advice to the licensee regarding regulatory requirements for the proposed construction of a Tails management facility. This is planned to be built and operated by Urenco ChemPlants Limited to reduce the inventory of Hex Tails. We are assessing the initial safety case for this plant.

We continue to press the licensee to justify proposed reductions in the workforce. The scope of the workforce reductions has recently been reduced from the initially proposed 20% to 12% by the end of 2010.

In February 2009 we issued two Consents relating to proposals to lease to Urenco UK Limited two areas of land owned by NDA and licensed to Sellafield Ltd (Capenhurst). This will pave the way for the two sites to be relicensed later in 2009, enabling Urenco UK Limited to incorporate these two leased areas of land, together with six areas of land similarly leased in September 2008, into the Urenco UK Limited licensed site.

Springfields Fuels Limited

The overall safety performance of the site remains good.

Our interventions have continued to focus on the need to facilitate the treatment of uranic residues, thereby reducing stocks of potentially mobile waste, and on the project inspection of any new facilities for the manufacture of fuel associated with any potential reactor new build programme.

Inspection has confirmed that the licensee has made steady progress in transferring drums of uranic residues to internal storage and in re-drumming a number of deteriorating drums.

We have completed the assessment of the site's Control of Major Accident Hazards (COMAH) report with an acceptable outcome. The assessment has informed the planning of some of our future site inspection activities.

The Director of HSE's Field Operations Directorate delivered a well-received presentation to the licensee in February, explaining aspects of the chemical process safety lessons learned from the investigation into the Buncefield oil depot explosions and fire of December 2005.

Nuclear research facilities

Dounreay Site Restoration Ltd (DSRL)

Dounreay Fast Reactor
The active commissioning programme of the NaK (sodium–potassium) disposal plant was disrupted due to minor leakages. At our request, the licensee undertook an engineering review of the ion exchange plant and later made modifications to the plant that we and SEPA found appropriate. We were content for active commissioning to restart in February 2009 subject to further modifications to be carried out during the commissioning programme.

An incident concerning upgrades to the Goliath crane in the sphere was investigated. During an inspection carried out on behalf of DSRL, it was found that a 'dead man's handle' was disconnected. We wrote to DSRL requiring improvements to the control system and to site arrangements for control of contractors. DSRL acted to improve these issues.

Prototype Fast Reactor
We discussed with DSRL how they intend to remove the sodium remaining in the reactor vessel. We are examining the safety case for this process and will permission the remaining sodium residue removal when we are satisfied that the most appropriate methods have been adopted by DSRL.

Import Export Facility (IEF)
In November 2008 we gave our agreement to the start of routine operation of the new IEF at Dounreay. The operation of IEF will facilitate the transfer of solid intermediate-level radioactive waste from existing older waste stores on the site to a new waste store. This will allow the old stores to be emptied and eventually decommissioned. The IEF will also allow cemented waste from historical fuel reprocessing contracts to be returned to foreign customers. The construction and operation of the IEF was the United Kingdom Atomic Energy Authority's (UKAEA – now DSRL) response to recommendation number 74 of the HSE/SEPA 1998 Dounreay Audit.

Liquid waste transfer
In November we gave agreement to the transfer of radioactive liquid waste from building D1234 to the radioactive liquor store D1208. The transfer of this waste is an important step in decommissioning D1234 and its associated facilities.

Plutonium moderated assembly (PUMA) cell
Early in 2009 one of the significant nuclear facilities on the Dounreay, the PUMA cell, was demolished. This followed a six-year project to strip out the interior fixtures and fittings and clean up the building structure. The PUMA cell was built in the 1950s and used for experimental work on plutonium and uranium materials. It ceased operations in 1963. The safe decommissioning of the PUMA cell represents a significant achievement in the processes of hazard reduction and restoration of the site.

Fuel cycle area (FCA) ventilation system replacement project
Work is underway to replace the ventilation system in the FCA. The existing stack was built in the 1950s and is being replaced by two smaller stacks. One stack will be situated in the north of the FCA, in close proximity to the existing stack, and the other in the south of the FCA. Both the new stacks were erected in March 2009.

Contaminated land strategy
In February 2009 we, along with other regulators, discussed proposals for a revision to the Dounreay Contaminated Land Strategy with DSRL. The strategy sets down the proposals for the characterisation, remediation and restoration of contaminated land at Dounreay. While a number of points of detail were raised there was broad agreement with the revised strategy.

RSRL (Harwell and Winfrith)
NII's regulatory work over this period concentrated on the project to relicence the Harwell and Winfrith sites from UKAEA Ltd to Research Sites Restoration Ltd (RSRL). This project was successfully completed on 2 February 2009 following a period of shadow working. In the course of this work, the licensee improved their arrangements for compliance with a number of licence conditions. Areas of regulatory interest included management of organisational change, decommissioning, emergency arrangements, marking the site boundary and aspects relating to plant/

process control, including maintenance and engineering capability. RSRL's arrangements in these and other areas were considered adequate at the time of relicensing, commensurate with the limited scope of decommissioning programmes and the increased emphasis on care and maintenance, and will remain issues of regulatory interest in the coming year. Safety performance was discussed at the annual review of safety and the environment which was held in March and considered acceptable, with improvements having been achieved in a number of areas.

G E Healthcare sites

G E Healthcare operates three nuclear licensed sites at Amersham (Grove Centre), Cardiff (Maynard Centre) and Harwell. We have previously provided specialist advice as part of our 2008/09 intervention to review safety case production processes (Licence Condition 14) across three different nuclear licensed sites. We discussed this in detail with the licensee towards the end of the period and concluded that they had made good progress in implementing improvements, applicable to all three of their sites, in line with our advice.

As previously reported, G E Healthcare has decided to withdraw from radiochemical operations at the Maynard Centre, ceasing production by the end of 2009. The site will remain in use as a centre for development and production of non-radioactive innovative products. Over the coming year or so they expect to apply to NII for large areas of the site to be delicensed following decontamination where necessary. An extensive programme of monitoring will be performed by specialists from the Health Protection Agency to support this application. It is anticipated that only a few facilities associated with waste storage would remain on the licensed site, with arrangements for licence compliance being scaled down accordingly. We have provided specialist advice on regulatory expectations for the delicensing/ relicensing process. We have held constructive meetings with site management and safety representatives to discuss the possible impact of the announcement on safety performance.

One of the two G E Healthcare licensed areas at Harwell was relicensed to RSRL, by mutual agreement, with effect from 2 February as part of the wider Harwell/Winfrith relicensing process. Repackaging of sea disposal drums and work with sealed sources continues on the remaining licensed site.

Imperial College Reactor Centre (Ascot)

The future of the site remains uncertain at the time of writing. We have sought to ensure that the site remains safe in its current shut-down configuration, with sufficient resource and trained staff to support emergency arrangements, defuelling and subsequent decommissioning operations should this be required. The licensee is drawing up a lifetime plan, to support possible designation by NDA, and is completing the periodic review of safety.

Low-level Waste Repository Ltd

Staff at the Low-level Waste Repository Ltd (LLWR) site at Drigg held their annual demonstration of emergency arrangements and their safety review meeting, both of which gave confidence in their control of safety.

There were a few events involving damage to air-fed suits. Staff who were wearing them at the time were not contaminated, but work with air-fed suits was stopped temporarily while investigations were carried out with the manufacturers. The learning points from these problems are being promulgated to other users.

Some minor administrative errors also occurred during transfers of radioactive materials between LLWR and Sellafield sites. As a result, a joint LLWR/Sellafield investigation team was established, which has identified a need for some improvements. One of these involved a worker who contaminated his hand and one of his work gloves but did not find out until the following day. Thorough checks were carried out at Sellafield site, LLWR, and on the worker's property to find the source and to ensure that it had not been spread anywhere else. The dose received by the worker was very low.

Studsvik Metals Recycling Facility

As mentioned in earlier newsletters, Studsvik's new Metals Recycling Facility, which became a licensed nuclear site in February 2008, is rapidly approaching going into full operation

with radioactive materials. Until now, HSE has been acting mainly in its advisory role, although some permissioning activities have taken place in preparation for assessing the operational safety report and the arrangements required by the nuclear site licence.

Defence nuclear sites

Devonport

Since the acquisition of Devonport Royal Dockyard Limited (DRDL) by Babcock International Group PLC, we have continued to engage with the Babcock Marine Board (incorporating the DRDL Board) to discuss the implications for the company of holding a site licence. We remain confident that nuclear safety-related activities taking place at the site remain secure through the licensee's existing arrangements. DRDL has indicated that it intends to reduce its workforce and has informed us that as a result of the workforce reduction, there will be a number of change proposals that will require regulatory attention. We have received a number of proposals and have discussed these with DRDL. We have also undertaken an on-site inspection of DRDL's arrangements and intervened with DRDL to ensure its management of change proposals have taken account of regulatory expectations.

Following our intervention in 2005, DRDL implemented improvements to the safety culture for work on the licensed site. This was implemented through a major initiative led by senior site personnel through a safety culture improvement team. The DRDL Board has recognised the need to refresh the process and has appointed a senior manager to take the lead. We welcome this commitment to continued improvement in the site safety culture.

We continue to monitor the Ministry of Defence's (MoD's) progress towards implementation of the strategy for dealing with laid-up submarines at Devonport through the Future Nuclear Facilities project. The project includes a replacement reactor access house for removing fuel from the reactor, an updated operational safety case and other safety improvements. A major milestone has been completed with the removal of the Submarine Refit Complex (SRC) refuelling crane. This marks a significant reduction in the threat to the hazard potential of the facility and is an enabler towards fleet-time docking submarine maintenance work transferring from 10 dock to the SRC. DRDL is in the process of submitting its revised safety justification to enable fleet-time dockings in the SRC. This justification will require DRDL to obtain a licence instrument from us before proceeding. DRDL has now ceased using 10 dock for nuclear work.

Following investigations, we continue to seek improvements to the arrangements used on the site to control work being undertaken and the reporting and investigation of incidents on site. We have been discussing with DRDL how feedback from these investigations and incidents is reflected in revised working arrangements.

Rosyth

The work at Rosyth Royal Dockyard Limited (RRDL) to decommission the majority of the facilities used for nuclear activities (RD83 Project) continues to progress safely and ahead of programme. It is anticipated that two of the three parts of the site will be offered for delicensing during 2010. We have continued with a programme to analyse confirmatory ground samples on the two decommissioning areas. These have confirmed that the site restoration work is progressing as planned. As noted in the previous reports, work has been undertaken by RRDL to establish the disposal route for resin wastes stored on the third part of the site. A number of options are viable and MoD is currently refining its proposals and gaining internal sanction before agreeing the way forward. However, the refinement process has not proceeded in a timely manner and so the proposals may not be available for sanction during the next MoD budget cycle. We will continue to work with all key stakeholders to ensure that the site is decommissioned and de-licensed in a timely manner.

Barrow

The principal focus of inspections at Barrow during the first part of 2009 has been to determine BAE Systems Marine Ltd's readiness in terms of plant, people and process for power range testing on HMS *Astute*, the first Astute Class submarine. Power range testing is the final stage of commissioning the reactor systems, including the lead up to the first criticality and subsequent full

power operations. Together with DNSR, a series of inspections have been carried out which included reviewing the site's performance against a range of licence and authorisation conditions and close-out of issues raised during our safety case assessment process. A key part of the inspections has been building confidence in the site's arrangements for determining its own readiness and for ensuring that the commissioning operations will be carried out such that the potential hazards are properly managed and controlled.

Regular updates have been received on progress towards improving the site's learning from experience systems. Significant progress has been evident over recent months with the key elements of a working system now in place. In the coming months we will be looking to ensure that these improvements become embedded and are sustained so that the nuclear safety and business benefits can be realised.

NII and DNSR assessed the site Emergency Exercise 'INDIGO 08' in November 2008. While the exercise overall was considered to be a satisfactory demonstration of the site's emergency arrangements, we required the site to re-demonstrate some elements of their plan. This was done in the first quarter of 2009, to the satisfaction of both regulators.

Derby

In 2008 an incident occurred where some radioactive material was released in the locality of a glove box. Consequently, we issued an improvement notice to Rolls Royce Marine Power Operations Ltd (RRMPOL), which contained a schedule of required improvements. We have confirmed during March 2009 that RRMPOL have complied satisfactorily with the requirements of the notice. The lessons learned are now being applied across the remainder of RRMPOL's manufacturing and Neptune licensed sites.

In line with our Integrated Intervention Strategy, we have continued early engagement with this licensee on the regeneration project for their nuclear fuel production plant. The next stage of the project will be the issue of a pre-construction safety and environmental report, which is now expected later in 2009. We will be ensuring that any significant delay, which might require continuing use of existing facilities, will result in the Periodic Review of Safety process being appropriately applied in accordance with site Licence Condition 15 requirements.

Atomic Weapons Establishment (AWE)

In accordance with our Integrated Intervention Strategy, we continue to have early engagement with the licensee on significant projects to help minimise future potential regulatory risk. We have recently provided further input to MoD and AWE in respect of proposals for new facilities at the Aldermaston and Burghfield Sites. In particular, on 2 March 2009, we issued a new nuclear site licence for AWE Burghfield in response to an application from AWE for an increase in the area of the nuclear licensed site. We support the extension of the nuclear licensed site to develop a new assembly/disassembly facility as the long-term solution for the safe processing of nuclear warheads. We will continue to engage with the licensee to ensure that the risks from the operations will be reduced to as low as reasonably practicable (ALARP) through improvements to existing facilities and, in due course, the provision of a new facility meeting modern standards.

We continue to monitor the licensee's progress towards delivering safety improvement and risk reduction measures across both the Aldermaston and Burghfield sites, within the nuclear and explosives safety improvement programme. The scope of the programme was reviewed and updated during the period and we are satisfied with progress to date. As part of this work, we are continuing to assess a number of Periodic Review of Safety submissions relating to facilities across both sites.

As part of our regulatory intervention strategy, we have in place a number of permissioning hold points at both sites, and have issued further licence instruments during the period providing our agreement to certain activities. The strategy employed at Burghfield has been to provide agreement to limited, continued use of the current processing facilities for weapons assembly/disassembly in accordance with our permissioning approach. This strategy has had positive results in securing delivery of identified improvements to an agreed programme. We believe progress has been made to such an extent that we can now move away from this regime, allowing Burghfield to resume routine operations within the envelope of the operational safety case without the need to apply for our agreement to certain activities.

During the reporting period, British Nuclear Fuels Ltd (BNFL) agreed to the sale of its one-third shareholding in AWE Management Limited (AWEML) to the Jacobs Engineering Group. AWEML owns the licensee company AWE plc. Although MoD owns the Aldermaston and Burghfield sites, AWE plc, as the nuclear licensee, operates both sites on its behalf. The previous ownership of AWEML, which was set up in 2000, was equally shared between BNFL, Serco and Lockheed Martin. MoD will retain ultimate control of the company by the provision of one special share held by the Secretary of State for Defence.

As part of our routine site inspection activities at the Aldermaston and Burghfield sites, we have been kept updated about the transfer of BNFL's one-third shareholding in AWEML. We are content that AWE plc has undertaken a proportionate organisational change justification, in accordance with its Licence Condition 36 arrangements, in relation to the expected changes in AWEML. As a follow up to the proposed change of ownership we will continue to monitor the performance of AWEML and AWE plc to ensure nuclear site licensing and safety responsibilities continue to be a priority and are discharged in line with regulatory expectations.

Following our issue of an improvement notice in April 2008, we have engaged with AWE to secure improvements in AWE's Licence Condition 23 and 24 arrangements dealing with criticality control. The notice required improvements to a number of key processes by January 2009. We received notification from AWE on 18 December 2008 stating that it considered that requirements of the improvement notice had been met. Based upon a number of specific inspections we confirmed to AWE that we were satisfied that they had demonstrated adequate compliance with the requirements of the improvement notice, which allowed it to be closed. AWE's arrangements within this area now compare well with the guidance to achieve modern standards, which is currently being reviewed following our Licence Condition 23 benchmarking inspections in 2007/08.

The Aldermaston annual demonstration emergency exercise was held during this period. Overall, we considered the exercise to be an adequate demonstration of AWE's emergency arrangements in response to the postulated event at the Aldermaston site and a number of areas of good performance were noted. However, in line with a culture of seeking continuous improvement, AWE agreed to review its site mustering arrangements, complete improvements to an emergency reception centre and provide us with a forward action programme.

We have developed our strategy in the regulation of AWE's decommissioning activities on the AWE nuclear licensed sites of Aldermaston and Burghfield. The previous strategy required AWE to produce plans for decommissioning activities on their sites, which were then formally approved. However, this approach was judged to be unsuitable in practice for such operations, as it is recognised that to secure high standards of nuclear safety during decommissioning and react to unforeseen circumstances, changes to programmes may be necessary. Our revised strategy, which brings AWE into line with the regulatory approach adopted at some other nuclear licensed sites, involves the formal Approval of AWE's arrangements for the production, review and implementation of the decommissioning plans. This approach will enable AWE to manage its decommissioning activities while maintaining a strong regulatory oversight ensuring that changes to decommissioning key event timescales are agreed. To move over to this more appropriate permissioning regime we issued a licence instrument withdrawing Approval of the existing decommissioning programmes at the Aldermaston site. We also issued licence instruments to Aldermaston and Burghfield approving the appropriate section of the licensee's decommissioning arrangements.

As a non-statutory consultee, we provide advice to local authorities with regard to planning applications in the vicinity of the Aldermaston and Burghfield sites. In March we met with Basingstoke and Deane Borough Council and a property developer to discuss a proposal for the development of a site close to the Aldermaston nuclear site boundary. We reaffirmed our position to advise against this proposal in recognition of the size of the proposed residential development and its close proximity to the site. This position is consistent with advice we have

provided previously and is based on our current understanding and assessment of the off-site risks presented within AWE's safety analysis.

AWE is currently reviewing its safety analysis presented in compliance with the Radiation (Emergency Preparedness and Public Information) Regulations (REPPIR). AWE's revised REPPIR assessment may allow us to adopt a graded approach in our consideration of proposed developments within the safeguarding and detailed emergency planning zones.

Both sites attract a high level of Freedom of Information requests, many relating to regulation of AWE, to which we continue to respond accordingly. We seek to make appropriate information available to the public and other interested parties in relation to operations at the Aldermaston and Burghfield sites. Additionally, we have given a general presentation on 'Regulating the Hazards of the Nuclear Industry' to members of nuclear awareness groups and the Nuclear Information Service at Reading Civic Centre.

We discussed the site's efforts to improve safety culture and attended the Incident and Injury Free (IIF) orientation training. This focuses on setting expectations from the workforce in terms of expected behaviours and the support that they can expect from their managers. An important part is the expectation that they will challenge unsafe behaviours in others and should expect to be challenged if they are doing unsafe acts. It is also about being proactive and asking questions about potential risks and how to mitigate them and about an attitude of choosing to follow safety rules rather than having to. This was balanced by the support that can be expected from managers (particularly that they will be supported if they stop work due to a genuine safety concern). We considered the standard of delivery and the safety messages in the IIF orientation course to be very good. Provided the levels of commitment in evidence are sustained, then there should be a positive impact on behaviours on the site and hence on nuclear safety performance.

HM Naval Bases (HMNBs)

A joint NII/DNSR team assessed the demonstration emergency exercise 'Sheetbend 2008', which was a Level 1 (MoD Grade C) exercise based on a propulsion accident scenario at Coulport. The site's emergency arrangements were considered to be adequately demonstrated, albeit with some improvements required in casualty handling and evacuation. It was particularly pleasing that the site's own internal assessment team captured all the major points identified by the regulatory team and was at least as critical in identifying improvement points.

A joint NII/DNSR/SEPA inspection of radioactive waste management was carried out. The inspection team closely examined the conclusions and recommendations of the best practicable means (BPM) study which has recently been completed at HMNB Clyde. This provides a thorough and credible analysis of the present arrangements for the management of radioactive waste arising from naval nuclear propulsion programme activities at HMNB Clyde and concludes that the base is not currently employing BPM. Recommendations have been made for bringing the arrangements up to a BPM standard. The regulators intend to monitor the implementation of these recommendations with a follow-up inspection later in 2009.

Naval Reactor Test Establishment Vulcan

We, together with DNSR, inspected a small-scale emergency exercise intended to demonstrate the performance and procedures of the Emergency Radiological Incident Centre (ERIC). This service is provided by the adjacent Dounreay Site Restoration Limited site and was not considered to be adequately demonstrated during the 'Lonestar 08' exercise in June 2008 as procedures were not followed in full. On this occasion, the ERIC procedures were followed and performance was considered to be satisfactory.

A joint inspection was also carried out with DNSR to look at the safety culture improvement programme ('First Thoughts') that the site is implementing. Improving safety culture is a long-term process and the site recognises that momentum needs to be maintained. However, it was pleasing to note that practical improvements are already evident.

A joint inspection was carried out with DNSR to look at the site's incident reporting systems and trending of events and incidents. We saw evidence that these systems were in place and being

used appropriately, including provision of feedback to those who raise safety improvement reports. There was good emphasis on the closure of actions raised from events and incidents and very few remained open.

Nuclear new build

Timescale for Generic Design Assessment (GDA)

General progress remains satisfactory towards a June 2011 completion date for GDA of the two designs currently being assessed, the AP1000 and EPR, and also for the update (Step 3) report being issued in November this year. Resource shortage remains a potential threat to satisfactory progress, and mitigation measures are being implemented. However, recruitment and retention results over the last year are encouraging. With continued attention to this, the remaining required deployment of staff to new build will be possible and, with applying best practice project management principles to the generic design assessment work, we are confident that NII resources will not be a limiting factor in the completion to time of a satisfactory GDA.

Extensive interchange with the Requesting Parties, potential licence applicants, overseas regulators and other stakeholders continues.

Programme

It is anticipated that Step 3 Reports will be published on 27 November 2009 and Step 4 Reports in June 2011. Comprehensive updates on the programme, including key near-term milestones, and potential project issues that threaten the programme can be found at: www.hse.gov.uk/newreactors/quarterly-updates.htm.

This data will be developed further into a plan better reflecting regulator, government and industry milestones.

Requesting Party interactions

Effective, regular and routine interactions with EDF/AREVA and Westinghouse have continued to take place. Technical meetings are a mix between those held in the UK and those in France or the USA. These require careful planning by both the Requesting Parties and ourselves to get the maximum benefit from the long-distance travelling involved.

We held our first meeting with EDF (as a potential licensee) on 26 February, and further meetings are planned over the coming months. EDF produced a draft programme for the construction of its first reactor in the UK, aimed at having it ready for operation before the end of 2017. For this to be achieved, EDF will need to submit an application for a nuclear site licence in parallel to the GDA process, as well as starting the early procurement of key pieces of equipment ahead of GDA completion. This will have significant resource implications for the regulatory authorities. Both ND and the Environment Agency are considering how these can be accommodated.

We have had a recent discussion with General Electric–Hitachi in which they confirmed that they wish to keep the assessment of their design, the Economic Simplified Boiling Water Reactor (ESBWR), temporarily suspended from the GDA process.

GDA 'confirmation' outcome

During the GDA process a number of questions have already arisen, and will inevitably continue to arise. These are called technical queries (TQs), and there is a formal procedure in place for both raising and clearing them. The precise number at any one time is less important than the quality of the response and the response time, as these can affect our ability to efficiently and effectively carry out our assessment. There have been significant delays in some of the Requesting Parties' responses. For GDA to meet its targets, the full proactive engagement of the Requesting Parties will be required.

One difference introduced by GDA, when compared with previous assessment regimes, is that NII and the Environment Agency will issue a 'confirmation certificate' or a 'statement of acceptability' at the end of their assessments. Both regulators therefore need to have an assurance that the design and safety case are sufficiently advanced and frozen to form a sound basis on which to issue these documents.

The present position is that neither design is complete, which makes our assessment more difficult. The greater the shortfall in the content and clarity of the information submitted by the Requesting Parties, the more difficult our assessment becomes, with a greater chance of TQs being elevated to become more serious 'regulatory observations' or 'regulatory issues'. This in turn is likely to lead to more areas being excluded from the GDA confirmation (using what are presently called 'exclusions'), and the less meaningful the GDA confirmation will become as a means of providing design assurance. Our intention is that there should be as few exclusions as possible, but as many as necessary, and with none due to GDA assessment resource constraints.

We recognise that it is very important that there is a robust process for managing and closing any exclusions which remain beyond the Step 4 report, as we want to reduce the regulatory uncertainty for the Requesting Parties, Government decision-makers and potential licensees during the nuclear site licensing assessment process. We also wish to reduce the possibility of licensing timescales being extended significantly. We will shortly be publishing guidance on this topic.

Resources

The NII team for GDA is currently around 80% staffed, with the Environment Agency at full complement. The NII position has improved during early 2009 through a combination of recruitment and internal staff moves, although a careful balance has been required between placing new and experienced inspectors in the GDA team. NII recruitment campaigns have met with some success with revised salaries, and the signalling of new working locations in Cheltenham and London. This should, we hope, attract an increased number of new recruits, which will help the GDA programme. The position was encouraging as of August 2009 (see staffing information in the 'General and policy issues' section of this newsletter). The GDA resource plan is based on successful recruitment allowing staff in NII with the necessary skills and experience to be in place and engaged in GDA activity by December 2009. The aim is to provide a stable and properly resourced team through to June 2011 and beyond if necessary.

The overall target of completing a substantial GDA assessment by June 2011 remains a challenge, but we remain confident it can be achieved given the progress now being made on the recruitment/redeployment of staff.

Technical issues

As is normal for this kind of project, many technical issues are being progressed. Significant among them are:

- the architecture of the control and instrumentation system;
- the level of information available on spent fuel and radwaste;
- pressure boundary component integrity validation;
- protection against internal hazards (eg fire);
- safety classification of systems;
- reliability claims made in the safety analysis.

Use of technical contractors and working with overseas regulators

Following an international (EU) tendering exercise, a wide-ranging technical support framework has been put in place by NII. Under this framework, 31 preferred contractors have been chosen to support GDA and other NII assessment activities. The first eight technical support contracts, with a value of £1.3 million, have now been placed for GDA-related work. These will help accelerate our technical assessment but regulatory judgements remain the responsibility of NII.

We are also working with overseas regulators, particularly those in the USA, France and Finland, with whom, over many years, there has been good and close liaison. The two designs now being assessed emanate from the USA and France respectively. In the last quarter the interactions have primarily been on the topics of pressure vessel integrity, and control and instrumentation.

We will take into account relevant overseas regulators' assessments where these can provide additional assurance to our own assessment work. Input from technical support contractors is treated similarly. To explain our strategy we have published *New nuclear power stations Generic Design Assessment: Strategy for working with overseas regulators* on our website. However, the GDA decisions will be made on the basis of NII's UK regulatory

assessment, which will then be taken forward into the detailed site-specific phase. Any nuclear site licences will continue to be issued by NII on the basis of its own judgement.

Stakeholder engagement

A wide range of stakeholders are interested in GDA, and interaction with them is important. In March we relaunched the Joint Regulators' 'New Reactors' website (which had 1500 hits on the first day) and sent an e-Bulletin to over 2000 people who have registered their interest. We have also attended several site stakeholder group meetings around the country, and plan to hold further meetings with non-governmental organisations.

Security issues

The Office for Civil Nuclear Security (OCNS), which is part of ND, is responsible for approving security arrangements within the industry and enforcing compliance. OCNS staff are an integral part of the joint GDA team. There is a need for balance between maximising public openness and protecting sensitive information, which we are managing. Resolution of some issues around this topic is ongoing, and is delaying our progress in some areas of the GDA project. Mitigation action is underway to improve the situation. Progress towards developing conceptual security plans for the two designs continues and will be delivered within the GDA assessment window.

Planning for site licensing/interaction with future operators

Before construction of nuclear power stations begins, a nuclear site licence and various environmental permits are required. NII and the Environment Agency have been engaging with potential future operators for around two years now to help them understand the requirements of the licensing and permitting process. On 13 May we will host a seminar for Requesting Parties and potential reactor licensees (this being a follow-up to a similarly targeted seminar held last year). In addition, EDF has signed an 'Agreement' with ND so that we can start giving them formal advice on their preparations for site licensing – the Environment Agency is pursuing a similar agreement.

We have also been engaging in discussions with industry to help us develop additional guidance about the interface between the end of GDA and the site licensing process, including the definition, content and clearance arrangements for the GDA exclusions mentioned earlier.

International

European Union – European Nuclear Safety Regulators Group (ENSREG)

The European High Level Group on Nuclear Safety and Waste Management (ENSREG, formerly the High Level Group) was created with the aim of maintaining and further improving the safety of nuclear installations, the safety of the management of spent fuel and radioactive waste, and the financing of the decommissioning of nuclear installations and safety of the management of spent fuel and radioactive waste.

The Group has met eight times since the inaugural meeting in October 2007 to develop its terms of reference and work programme. On 30 May 2008 the Group agreed the work programmes for the three subgroups on: improving nuclear safety; radioactive waste management and decommissioning; and transparency. Our Chief Inspector, Mike Weightman, was elected one of two Group vice-chairmen and is chairing the subgroup on improving nuclear safety arrangements. Although just outside the reporting period, it is relevant to add that the last meeting, on 15 April 2009, reviewed the progress of each of the subgroups in the ENSREG work programme and prepared a report for submission to the European Parliament and to the Council of the European Union in July 2009.

Further information on the work of ENSREG can be found at http://ec.europa.eu/energy/nuclear/ensreg/ensreg_en.htm.

Western European Nuclear Regulators' Association (WENRA)

WENRA is a non-governmental organisation comprised of the heads and senior staff members of nuclear regulatory

authorities of European countries with nuclear power plants. The main objectives of WENRA are to assist in the continuous improvement in nuclear safety, to provide an independent capability to examine nuclear safety in applicant countries and to be a network of chief nuclear safety regulators in Europe, exchanging experience and discussing significant safety issues. The Chief Inspector attends the twice-yearly plenary meetings, and other ND staff attend the working groups. Two plenary meeting were held in the reporting period. The incorporation of the Reactor Harmonisation Working Group (RHWG) reference levels into UK regulatory requirements is now complete. Implementation at existing UK power stations is considered to be at a high level and sample inspections are planned to confirm the position. RHWG has been tasked to identify quantitative safety goals for new reactors and is expected to produce a final report for the Autumn 2009 WENRA plenary.

International Nuclear Regulators Association (INRA)

INRA was formed in 1997 with the aim of providing a forum for a small group of senior regulators from developed nuclear nations to discuss issues of mutual interest. INRA members are the chief nuclear regulators of Canada, France, Germany, Japan, Spain, Sweden, the USA, South Korea and the United Kingdom. South Korea is the current chair of the meetings that are held twice a year. INRA aims to promote a frank and open exchange of information and views, members learning lessons from each other's experiences, with an aim to seek international consensus on approaches to nuclear safety regulation. The INRA network complements other international exchange arrangements between regulators, and has proved useful in learning from nuclear events in various countries.

International Atomic Energy Agency (IAEA) – Integrated Regulatory Review Service (IRRS)

As a contribution to the 2006 Energy Review the UK Government invited IAEA to undertake an IRRS mission to review HSE/ND. The mission took place in April 2006. The main purpose of that mission was to review our readiness to regulate any new reactor designs in advance of any specific proposals for new build and to identify areas for enhancement to the UK nuclear safety regulatory regime through the exchange of experience with IAEA experts. IAEA assembled a very experienced team of senior regulators.

The 2006 IRRS mission reported to the UK Government making recommendations where IAEA considered there were areas for improvement in the way we regulate. The mission also identified 14 good practices that are to be commended to other regulatory bodies by IAEA. Work began and still continues in addressing the IAEA's recommendations.

The second of the series of four missions will take place in October 2009. The preparatory meeting for this mission was held in February 2009, where the scope and mission dates were agreed with IAEA. In preparation, we have performed a self-assessment against the existing IAEA standards for nuclear regulators. This exercise is almost concluded and will form part of the advance reference material provided to IAEA to help it prepare for the mission. This is timely in that it coincides with the intended transition of ND into a statutory corporation.

The IAEA team membership is not yet known, other than the team leader, who will be Mr W Borchardt, currently Executive Director of Operations for the Nuclear Regulatory Commission in the USA. The IAEA team will comprise around ten people and it is likely that a number of the other 2006 team members will participate in the 2009 mission to ensure a degree of continuity.

Convention on Nuclear Safety

The UK report to the three-yearly Convention on Nuclear Safety is produced by NII on behalf of the DECC, the lead government department. The latest review meeting of the contracting parties to the Convention was held in April 2008 and the next is in April 2011. The UK report from 2008, responses to questions arising, and the UK presentation are all publicly available on the HSE website.

Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management

The UK report to the three-yearly Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management (Joint Convention) is produced by NII on behalf of DECC, the lead government department. The next review meeting of the contracting parties to the Joint Convention will be in May 2009. The UK report was submitted ahead of the 11 October 2008 deadline. A ND project team, supported by external contractors and inputs from government departments, agencies, regulators and licensees, has been formed to review other countries' national reports and to respond to questions on the UK national report. The Chief Inspector, Mike Weightman, will lead the UK team at the review meeting. The UK report, responses to questions arising, and the UK presentation will all be publicly available on the HSE website after the review meeting.

Freedom of Information Act 2000 (FOI)

The Freedom of Information Act 2000 and the Environmental Information Regulations 2004 (FOI/EIR) place duties on public authorities to provide information on their activities to requesters. During the period of this report there were 25 FOI requests, 28 items of correspondence from Members of Parliament and 143 general correspondence requests.

Overall, ND has received 226 requests for information under the provisions of FOI/EIR since this legislation was introduced. 219 of these have been satisfactorily closed and the remainder are being progressed.

Fourteen internal reviews have taken place, with the original decisions to withhold upheld. There are no active internal reviews or appeals for ND registered with the Information Commissioner. ND is dealing with an increasing number of complex requests; this has meant that on occasion the deadlines have had to be extended to enable the public interest test to be undertaken. Details of the information that has been released under FOI/EIR can be found at: **www.hse.gov.uk/foi/latest.htm.**

Information on the work of ND can be found at **www.hse.gov.uk/nuclear** and the HSE/Environment Agency Joint Programme Office site for new reactor build/generic design assessment at: **www.hse.gov.uk/newreactors**.

On these sites you can also register for our e-bulletins to receive periodic updates.

FOI/EIR requests relating to the work of HSE's Nuclear Directorate should be sent to:

Mike Jennions
Building 4N.1
Redgrave Court
Merton Road, Bootle
Merseyside, L20 7HS

or via email to:
NDenquiries@hse.gsi.gov.uk

Further information

HSE priced and free publications can be viewed online or ordered from www.hse.gov.uk or contact HSE Books, PO Box 1999, Sudbury, Suffolk CO10 2WA Tel: 01787 881165 Fax: 01787 313995. HSE priced publications are also available from bookshops.

For information about health and safety ring HSE's Infoline Tel: 0845 345 0055 Fax: 0845 408 9566 Textphone: 0845 408 9577 e-mail: hse.infoline@natbrit.com or write to HSE Information Services, Caerphilly Business Park, Caerphilly CF83 3GG.

HSE's quarterly statement of nuclear incidents at nuclear installations can be obtained from www.hse.gov.uk/nuclear/quarterly-stat/index.htm or from HSE, Nuclear Directorate, CASE team, Building 4N2, Redgrave Court, Merton Road, Bootle, Merseyside, L20 7HS Tel: 0151 951 3484.

This document is available web only at: **www.hse.gov.uk/nuclear/newsletters.htm.**

Feedback – your views wanted

The Editor welcomes your views about the newsletter or the work of the Nuclear Directorate. While we do not undertake to publish individual letters, comments about the scope and depth of coverage will help us assess the impact of the newsletter and ensure that it remains relevant and informative. Feedback – positive or negative – is therefore particularly welcomed, as are suggestions for improvements that would better meet your needs whatever your background or particular interests.

Please send any comments to: Chris Snaith, HSE, Nuclear Directorate, Building 4N.2, Redgrave Court, Merton Road, Bootle, Merseyside, L20 7HS or email: **NDenquiries@hse.gsi.gov.uk.**

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