HSE

Health and Safety Executive

Nuclear Safety Newsletter

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Contents

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General issues

Overview

The period has been one of increasing pace of change in an industry faced with more competition, where it is even more important to maintain a sharp focus on delivering high levels of nuclear safety. We are satisfied that, in general, the nuclear power licensees continue to maintain such a focus, although the impact of the Nuclear Decommissioning Authority (NDA) strategy on Magnox Electric will continue to require careful attention. We are working to secure an improved safety culture at Sellafield – noting that the licensee pleaded guilty recently to the charges we instigated as a result of the completion of our investigation of the circumstances around last year's incident at THORP. There have been incidents at Dounreay that have given rise to some concern, and we have brought to the attention of UKAEA senior management some concerns we have about the process they have instigated to restructure the company. Our relationship with MoD and the licensees for their nuclear sites has continued to develop in a positive direction and we are continuing to gain benefit from joined up working with the MoD internal nuclear regulator. We have also addressed various strategic issues over the period: pushed ahead with the revision of our Safety Assessment Principles (SAPs); contributed to HSE's development of a response to the Energy Minister's request for expert advice to assist in the Energy Review; and welcomed an independent review of our regulatory approach by an International Atomic Energy Agency (IAEA) led team.

Nuclear Decommissioning Authority (NDA)

We have continued to work closely with the NDA. Regular contact has been maintained at both senior and working levels. This has been fruitful in developing compatible positions on a variety of issues and in ensuring that nuclear site licensees are not exposed to conflicting requirements.

Site visits

The Chief Inspector has continued with his programme of site visits. Over the period covered by this report Dr Weightman visited: Amersham – 15 March; AWE sites – 19/20 April; Faslane and Coulport – 1/2 June (with HSE Deputy CEO, Justin McCracken); and Heysham – 1/2 and 20/21 June. These visits have again been invaluable in obtaining, at first hand, an impression of the efforts being made to maintain and improve health and safety standards, the impact of our regulatory activities, the people and plant on the nuclear sites, and an opportunity to talk to site safety representatives and managers about their concerns and issues.

Working with other regulators

We have continued to work closely with other regulators, in particular with the Environment Agency (EA) and Office for Civil Nuclear Security (OCNS).

Stakeholder interactions

During this period we have benefited from further stakeholder input into our development of the revised Safety Assessment Principles, in particular by seeking views on a draft revised document on our website. Additionally, we held a stakeholder workshop to develop a better understanding of others' views on the issues associated with 'pre-licensing' of new nuclear reactors, and sought views on these issues again through our website. This was helpful in informing the development of the HSE expert report to the Energy Minister. We have also met twice with representatives of non-governmental organisations (NGOs) to both provide information on the work of NSD and to gain an insight into their views on various issues.

The Chief Inspector appeared as a witness in front of two Parliamentary Select Committees during the period of this report. On 15 March 2006 he attended a House of Lords Select Committee to provide advice on the proposed EC Nuclear Package, explaining HSE's concerns from a nuclear regulatory perspective. More recently, on 13 June 2006, he appeared before the House of Commons Trade and Industry Committee to answer questions related to the nuclear new build in the context of the Government's Energy Review.

Energy Review

NSD provided a major input into HSE's response to the Energy Minister's request for expert advice on the risks associated with possible future energy developments, especially in considering pre-licensing assessments of new designs of nuclear reactors. The report is available on the HSE website. A step wise approach to pre-licensing is proposed that involves applicants putting their safety cases in the public domain, subject to security and commercial considerations, and NII taking into account any comments from the public in coming to its regulatory decision.

British Energy (BE) sites

Dungeness B

During the recent period of operation the station safety performance has been satisfactory. No events above zero on the International Nuclear Event Scale (INES) have occurred. The emergency arrangements were successfully demonstrated at the recent Level 1 exercise (below).

At the time of writing both reactors are shut down. Reactor 21 is shut down for approximately 11 weeks. This is a planned periodic shutdown that is required by the Nuclear Site Licence Conditions at least every three years. Planned work included essential maintenance such as inspection of the graphite core, the concrete pressure vessel and steel pressure boundary components; and replacement of obsolete control and instrumentation (C&I) equipment. As up to 1000 contractor staff can be involved on site, conventional safety also receives close attention and British Energy put much effort into ensuring good standards are maintained throughout the shutdown. Reactor 22 is shut down for refuelling and is scheduled to be shut down for approximately two weeks.

Level 1 Emergency Exercise 'LUXEMBORG' was held in 8 March 2006 and was witnessed by a team from NII. The exercise was judged to be an adequate demonstration of the emergency arrangements produced by the Station under Licence Condition 11, and we noted an improvement in performance in a number of aspects.

Hartlepool

Reactor 1 remained out of service until April 2006, due to the earlier turbine generator fault. Reactor 2 operated at nominal full power throughout the period.

During February, the Station identified a concern regarding corrosion of a large number of cable tray supports in turbine hall tunnels. These cable trays support cables for safety related equipment. NII was concerned that there was insufficient rigour in some aspects of the proposed justification and the Station effectively addressed the issue by repairing all the affected supports, thereby restoring the original design intent. NII will continue to ensure that a more effective maintenance regime for passive equipment is adopted in future.

A re-demonstration exercise was held in March, as a result of a need to demonstrate improved arrangements for command and control in the emergency control centre that was identified during the scheduled annual exercise in 2005. There were still deficiencies in this aspect, and BE agreed to write to NII with proposed improvements ahead of a further re-demonstration before the end of June 2006.

Heysham 1

Heysham 1 has completed two refuelling campaigns in recent months, which included the completion of all scheduled tasks associated with the boiler closure unit (BCU) structural integrity safety case. The Station is scheduled to complete outstanding BCU work during a third refuel outage in August 2006.

Away from the outages, Reactor 1 was tripped manually at the end of March 2006 due to a main boiler feed pump problem. Otherwise the reactors have provided continuous generation. However, both reactors have operated at reduced load for short periods due to quadrants trips. On return to service following the recent refuel outage, R1 B1 quadrant developed a minor boiler tube leak. The reactor continues to operate at reduced load and awaits the release of the resources currently engaged on other work before shutting down for repairs.

Heysham 2

Heysham 2 continues to operate safely and in compliance with its operating limits and conditions. During the period of this report there was a short planned outage of one week to repair turbine control cabling, this was successfully managed and the Station took the chance to effect other minor remedial work while Reactor 7 was shut down. The Station successfully demonstrated its emergency preparedness arrangements to NII in an out of normal hours Level 1 exercise in May 2006.

Hinkley Point B

During the period covered by this report the Station has generally operated steadily. There was an unplanned trip of a reactor in June 2006 owing to a transformer failure. Reactor 4 also experienced a boiler tube leak in May 2006, which necessitated a short shutdown to enable repairs. There have been no reported events above a rating of 1 on the INES scale.

A series of uncontrolled releases of clean carbon dioxide gas occurred in January 2006. British Energy has taken appropriate corrective short-term action, plus a carbon dioxide storage plant improvement programme for the longer term.

NII granted Consent to the lease of land on Hinkley Point B site to the NDA. The land is for the temporary storage of clean spoil generated from groundwork associated with the construction of the Hinkley Point A Intermediate Level Waste Store.

Hunterston B

During the reporting period Reactors 3 and 4 have operated at nominal full load, with no events reported above a rating of unity on the INES scale.

The Station has constructed a new access control point (ACP) facility on the site, which was successfully operated during the 2005 Level 1 exercise. However, command and control performance in the new facility during exercise Skye in March was not judged to be at an adequate standard, and a further demonstration is to be provided in June 2006.

There is evidence of a leaking fuel element in Reactor 3, but so far the leakage has been too small to enable the affected stringer to be identified. A case for taking the reactor into air for man access during the forthcoming outage will be required, if the stringer is not located and removed.

Sizewell B

Sizewell B has operated continuously since its return to power following its seventh refuelling outage in May 2005. There have been two events rated 1 on the INES scale during this reporting period. One was a failure to carry out environmental monitoring of the gaseous discharge route for a number of days. The second event was the inappropriate storage of loose items in the seismically qualified emergency charging pump room, that could result in the pump being damaged by these items during a seismic event. This was a repeat event and the INES rating was increased from zero to 1. The Station has implemented improved arrangements and expectations for the management of loose items in seismically qualified area; these are challenging existing behaviours and resulting in improved safety in these areas.

Progress with the Reactor Pressure Vessel replacement head is on target to meet the planned change during refuelling outage 8 in late 2006. During refuelling outage 8 the Station also plans to replace the fuel-handling machine within the containment cavity to bring it up to a more modern design standard.

Torness

During the recent period of operation, no faults have occurred that have presented a significant challenge to the design basis for the Station and its safety case, and no events have been reported above a rating of 1 on the INES scale.

During the current period NII has set up a team to follow up an event that resulted in a 60 MW (th) unplanned power increase on reactor 2 at Torness during the night shift of 30 December 2005. Operators responded to the event by taking action to exercise proper control of core reactivity levels. NII requested British Energy to provide details of the corrective measures they proposed to address the areas for improvement identified from their investigations into the event. Both the Station and the company carried out investigations, and these identified the benefit of improvements to the training of operators across the company, covering reactivity fundamentals. British Energy is developing a programme of remedial work to fully address the findings from the investigations. NII is reviewing its proposals, and will be carrying out further inspections as appropriate.

Magnox Electric sites

Berkeley

The main decommissioning projects on site are Active Waste Vault Retrieval, Caesium Removal Plant and the Shielded Area. These are progressing satisfactorily. Construction of an intermediate level waste (ILW) store in the circulator hall area has been stopped by the Site Manager in response to concerns with engineering aspects of the design and insufficient storage capacity.

Preparations continue for partial de-licensing with a planned date of 31 December 2006. NDA have written to BIL Solutions to inform them that BIL will have to demonstrate that they will be a viable, stand-alone business if they are to lease the buildings that they currently occupy, and that they will continue to operate after de-licensing. BNG (who own BIL) are considering their position and may decide to cease BIL operations and withdraw from that line of business. BIL Solutions provide key ADS and nuclear instrument re-calibration services to the UK nuclear industry and the level of service that they provide might not easily be replaced in the short term.

Bradwell

Both reactor cores and dry fuel routes are now verified as being defuelled. Approximately eighteen road transport flasks worth of fuel remain in the cooling pond. Current plans are to remove all fuel from site by the end of August 2006. NII site inspectors will undertake an inspection to verify that all fuel has been removed from site before permissioning the move over to full decommissioning management arrangements. The site inspector has revealed fundamental deficiencies with the LC26 control of contractor arrangements. These findings have resulted in a high profile site management response at Bradwell and also at other Magnox decommissioning sites.

Chapelcross

Improvements were made to the arrangements for preserving documentation, associated with demonstrating compliance with the licence conditions, and NII was able to approve a relaxation to the normal preservation period of 30 years for some of these records.

Progress continued to be made on removing radioactive waste that had accumulated on the site, and on the provision of a radioactive waste processing facility. Progress was also made on introducing a new suite of documentation covering the management of radioactive waste. Modification work continued on the upgrading of the fuel route discharges machines and associated plant, and our assessment work on related matters continued. Hold points for the project, the passing of which will require permission from NII, were agreed. Expectations, regarding the state of the plant and the readiness before inactive system commissioning begins, were also agreed.

NII witnessed the Level 1 Demonstration Emergency Exercise and concluded that it provided an adequate demonstration of the licensee's arrangements.

Dungeness A

The Station is approaching end of life; power generation will cease in December 2006. In preparation for defuelling following shutdown, NII is inspecting the Station's Post Operational Safety Case, revised emergency arrangements and decommissioning arrangements for the Station. NII has consulted stakeholders over Dungeness A's decommissioning plans as required by the Nuclear Reactors (Environmental Impact Assessment for Decommissioning) Regulations 1999. NII is now considering the responses to that consultation and will issue a decision shortly.

Meanwhile, a second failure of rod control electrical equipment has focused attention on the management of ageing plant in this final operational phase. NII is also mindful of the proposed reorganisation of the licensee and is undertaking an extensive inspection of Magnox Electric's management of organisational change.

Hinkley Point A

Hinkley Point A's 2005 periodic safety review (PSR) was submitted in autumn 2004. The PSR was found to be adequate. A list of improvement activities stemming from the PSR has been identified and a timetable developed to deliver these.

Hunterston A

A major feature of the Station's performance was the commendable record of 53 months without a lost time accident. The site has increased personnel by 6% and has indicated an intention to increase these numbers by a further 30% by the end of the calendar year, a prudent measure in the light of future proposals to accelerate decommissioning and restructure Magnox Electric.

Oldbury

Reactor 1 has continued to operate as normal. Magnox Electric continues working on providing a full technical justification for returning Reactor 2 to service. Much of the supporting information is now in place, but some key materials testing data is still to be obtained to demonstrate that the graphite retains sufficient strength to perform its safety function during the proposed period of operation.

In tandem with the above work, the company is inspecting additional channels within the Reactor 2 core. At the time of writing, 1054 channels in the most affected parts of the core have been viewed and no defects of safety significance have been seen. About 250 remain to be inspected.

The company is planning to submit its justification for the return of Reactor 2 to service to its Nuclear Safety Committee in the latter part of July 2006, and to the NII soon thereafter. While the Inspectorate has been kept informed of progress in key areas, we will have to consider key aspects of the case before considering issuing consent to allow the reactor operations to restart.

The company continues to investigate the feasibility of alternative avenues for demonstrating the safety of operations at higher graphite weight loss. The Inspectorate is being kept informed of progress in the meantime, but no detailed safety proposals have yet been prepared.

There remains no reason to be concerned about the operation of Reactor 1 up to the agreed weight loss limit. The reactor will start its statutory maintenance outage at the start of September before this limit is reached. NII consent will be required before it can be returned to service for the next period of operation.

Sizewell A

During the recent period of operation the station safety performance has been satisfactory. No events above zero on the INES scale have occurred. The power station has now been given HSE consent to decommission under the Nuclear Reactors (Environmental Impact Assessment for Decommissioning) Regulations. The site is currently preparing for defuelling and decommissioning activities following the cessation of electricity generation on 31 December 2006, however, NII assessment of the post operation and defuelling safety case is not yet complete.

Trawsfynydd

Decommissioning, waste retrieval and conditioning activities continue to progress. A fourth box of fuel element debris has been filled and grouted. The boiler-lifting rig is being moved and to date three boilers have had their height reduced. The removed sections have been cut and lowered for emplacement into storage positions. This work is a pre-requisite to enable the reduction in height of the reactor buildings for eventual cladding prior to entering the site safestore period.

Wylfa

Both reactors have continued to operate safely. There were no reported events above a rating of zero on the INES scale. Reactor 2 at Wylfa commenced a periodic shutdown on 7 April 2006. The outage programme included completing PSR carry over work and, as for Reactor 1 in 2005, enhanced graphite inspection and sampling. Following a successful reactor start-up meeting NII is satisfied that, subject to completion of agreed actions, an acceptable position for start up can be reached.

Magnox has made good progress towards clearing its PSR follow up work programme and, in line with NII expectations, remains on schedule for this to be satisfactorily complete by the end of September 2006. NII specialists visited the Station while continuing to closely progress issues associated with fire risk assessment, control and instrumentation, seismicity, and flask handling.

The primary flask filling area was taken out of service following failure of the manipulator tongs used to remotely pick up and load irradiated fuel into fuel transport flasks. At the time of the failure 22 elements were already loaded into a flask. The Station's response to the problem was good and conservative. The tongs were recovered and the partially filled flask safely transported to Sellafield. Options for providing improved design safeguards were established and once complete the plant will return to service.

NII is satisfied with the safety case for continuing to operate Reactor 1 with four boiler support bracket tie rods that were installed during the 2005 Reactor 1 biennial outage with an incorrect materials properties specification. It still needs to reach agreement on the way forward to permit this reactor to return to service at the completion of its biennial outage in 2007.

Nuclear fuel cycle facilities

Sellafield – General

Sellafield visit: The Chief Executive and Deputy Chief Executive (Policy) of HSE visited the Sellafield site on Wednesday 22 March 2006. They met with the BNGSL management, led by Mr Barry Snelson and the BNG Chief Executive Lawry Haynes. They viewed a number of plants. Some of those viewed were current operational plant and some were plant under remediation. The purpose of the visit was to allow the HSE team to understand the complexity of the plant NII regulate and the nature and complexity of the issues that are considered. It allowed the HSE senior team to hear the opinions and concerns of BNG and BNGSL directly. The HSE senior team found the visit very informative.

Improvement Notice issued: The failure of the Wastwater pipe on the East pipe bridge between Discharge Pond No 2 and the Settling Tank on the Sellafield site (discovered on 29 November 2005) was caused by neglect of inspection and maintenance of the pipe itself, and the pipe hangers connecting it to the supporting structure. BNGSL's investigation report says that there had been 'unacceptable deterioration of redundant and inactive services within the Legacy Ponds and Silos area...' and that 'the scope and implementation of the EIM&T (Examination,

Inspection, Maintenance and Test) regimes is inadequate'. This is clear non-compliance with LC28(1) and an Improvement Notice has been issued requiring the licensee to remedy the situation.

Contaminated land: British Nuclear Group Sellafield Ltd (BNGSL) continues to establish its contaminated land project team, including the necessary supply chain requirements, to address this long-standing regulatory concern at Sellafield. NII have established with EA a joint regulatory task team to monitor and influence short-term deliverables such as improvements to current site practices, programmes for further data gathering, optioneering studies and medium/long term strategies.

Sellafield integrated waste strategy (IWS): The production of the first Sellafield IWS continues. The licensee has had difficulties in maintaining progress against a very demanding deadline of 1 June 2006 for response to a requirement within the current Environment Agency (EA) discharge authorisation. The difficulties included scoping the final deliverable and the methods that will be used to achieve it in the time available. The requirement had been set before the full scope of the Sellafield IWS was known. The target for issue was revised to 30 June and this has been met.

An IWS draws together all the waste challenges (active and Inactive), the aims and objectives to improve the problems and the context for the treatment processes for a complex site. For Sellafield this is in excess of 800 different waste types.

Sellafield – events

THORP – Feed clarification cell leak: HSE brought a criminal prosecution against BNGSL in connection with this incident. The prosecution follows a detailed investigation by HSE's Nuclear Installations Inspectorate. Summonses were served alleging that BNGSL breached three conditions attached to the Sellafield site licence granted under the Nuclear Installations Act 1965 (as amended). BNGSL pleaded guilty at Whitehaven Magistrates Court and the case has now been referred to the Crown Court for sentencing.

Analytical Services – Contamination event: In October 2005, two contract joiners working in a former plutonium laboratory in the Analytical Services Building, during the removal of part of the skirting board, two installed air samplers in the lab went into alarm with high α activity. The final internal dose estimate for one of the joiners was 15.8 mSv which gave a cumulative dose for the calendar year of ~17 mSv. The site inspector and a radiological protection (RP) specialist inspector carried out a follow-up inspection which identified concerns over the operation of the work control system, hazard identification, Local Rules, the actions that were undertaken following the event, and the ADS internal dosimetry regime. NII detailed the concerns to BNGSL, and have requested an early response to the issues, which has now been received. Further action is being considered.

High level waste plants (HLWP) – high active storage tanks HAST 21 Incident, 4 December 2005: An incident occurred in the highly active liquor evaporation and storage (HALES) facility, during routine operations to sample highly active liquor, high levels of radiation were detected in the working area.

NII has received BNGSL's investigation report reflecting a thorough assessment of the incident. NII has concluded its own investigation and has confirmed the findings to BNGSL:

- BNGSL's actions in response to the incident were exemplary.
- NII accepts that the root cause of the incident was sample system line blockages and flow restrictions caused by HAST 21 basal solids.
- The most significant finding was the failure to learn from previous similar sampling incidents. NII is carrying out inspections to determine whether the improvements recommended by BNGSL will deliver a suitable system for learning from experience.
- The incident calls into question the safety of HAST sampling. NII has already considered and accepted BNGSL proposals to sample from HAST 18 (December 2005) and HAST 19 (March 2006). In both cases our acceptance was on the basis of safety improvements. NII is unlikely to accept future sampling proposals unless they include the fitting of engineered physical isolation on all relevant sample lines.

Sellafield – Operations

HLWP - HAL Stocks Specification

BNGSL continues to provide NII with monthly reports summarising the quantities of highly active liquor (HAL) contained in the highly active storage tanks (HASTs). These figures are used by NII to judge whether BNGSL continues to meet the HAL Specification issued in 2000, which provides a limit on the amount of HAL that can be stored at any time and promotes HAL stocks reduction. Continued good performance of the waste vitrification plant (WVP) during 2005/06, coupled with the extended outage at THORP, has meant that HAL stocks are currently at their lowest levels since the Specification was issued and are well below that required by the Specification.

NII will review the Specification during 2006 and, if it appears necessary in the interests of safety, we will change it in the light of our accumulated experience and BNGSL's forward predictions of future HAL generation and WVP performance.

Highly active liquor evaporative capacity

There is an ongoing need for facilities to allow evaporation of highly active raffinates and effluents and, on the basis of current plans, this need will continue in support of site clean-up long after reprocessing operations at Sellafield cease. NII is concerned that the existing evaporators may be removed from service before completing the currently projected lifetime needs because the heating/cooling coils are approaching the end of their design lives. NII therefore strongly supports the project that is underway to build a new highly active evaporator (Evaporator D) and considers that this is fully justified on safety grounds.

Legacy ponds and silos

Ponds: BNGSL successfully retrieved items of ILW from Discharge Pond No 2. Recent setbacks in the design and build process of key plant to sludge removal and disappointing sludge removal trials have led to BNGSL undertaking a comprehensive review of their strategy. Their aim is to identify how best to put the programme back on track.

Silos: On the Wet Silos, progress continues with the programme of plant safety enhancements and preparations for waste retrieval. Decisions on a number of key issues are required to be taken this year if progress is to be maintained. We await with interest the outcome of the liquor activity removal trials at SIXEP.

For the Dry Silos, BNGSL have provided a Safety Case Strategy Overview Report (SCOSR) outlining the overall project strategy and identifying related safety case submissions. Associated regulatory review points for the project have been agreed by NII. Progress continues with installing the new Argon Inerting System, along with other plant safety enhancements and preparations for waste retrieval.

Reprocessing plant

Magnox: Following the extended shutdown last year, reprocessing operations restarted in November 2005. Reprocessing progress was slow to the end of the 2005/06 financial year due to plant downtime in Magnox Reprocessing and associated plant, and this led to corroded fuel being dealt with at a lower rate than originally planned. NII has reinforced the importance of processing corroded fuel in accordance with the Magnox Operating Programme (MOP).

Following detailed inspections NII required BNGSL to make improvements to the implementation of the safe systems of work process and has encouraged BNGSL to continue to make improvements in the area of behavioural safety and safety culture.

THORP – Return to service: Following the THORP Feed Clarification Cell (FCC) incident that occurred in April 2005 and the successful recovery of the leaked liquor in June 2005, preparations are now ongoing to return the THORP plant to a state that would enable a full plant restart, subject to NII consent.

A revised safety case for the FCC has been prepared and, following internal and external review, has been submitted to NII for examination. Some revision to the THORP Chemical Plants Safety Case is in process, and in total there are a number of regulatory hold points, which will culminate in a Consent to allow the recommencement of shearing operations. BNGSL is

currently also addressing some 49 recommendations arising out of NII's investigation of the incident.

Prior to restart, NII will be carrying out readiness inspections to ensure embedding of revised processes and to confirm improvements are both in place and functioning.

Plutonium Finishing and Storage (PF&S): On 10 October 2005 NII issued BNGSL with Consent under LC31 (2) to restart feeds to the conditioning vessels of Finishing Line 5 at Sellafield. This consent was subject to 13 commitments from BNGSL to address safety-related issues arising from NII's assessment of their submission for restart of the plant. At the end of March, only four of these commitments remained outstanding. All but one of these commitments is progressing on time. The commitment to provide a permanent neutron monitoring system, which is essential to ensure plant risks are tolerable and as low as reasonably practicable (ALARP) with respect to fissile powder and liquor accumulations, remains outstanding. The delay has arisen due to poor assumptions in equipment availability and transferability of other systems in use for similar purposes on other Sellafield plant. Recognising the significance of this system, an additional commitment given by BNGSL in support of restart of the plant was to develop and implement an interim neutron monitoring system until the permanent system is designed, installed and commissioned. Following inspection of arrangements and discussions with PF&S staff and NII's criticality specialist, it is judged that the interim neutron monitoring system is providing an improvement to safety within B299, and that BNGSL's approach to developing and implementing this system is adequate and sufficient to substantiate continued operation until the delivery of the permanent neutron monitoring system in January 2007.

B241 Floc Retrieval Plant: Operations have been suspended since mid July 2005 because of problems with part of the engineered pumped recirculation system, called 'spillbacks', in the Buffer Storage Tank that maintains the floc in suspension. Leaks had developed on the rotating couplings of the three 'spillbacks', which have led to liquor accumulating in the sumps of the secondary containment. Modifications to the spillback cabinets on the Buffer tank to allow visual inspection for leaks have now been completed. BNGSL have also developed revised operating instructions for the spillbacks to improve the inspection and monitoring regime. Following a joint inspection between NII and EA, NII have given Agreement to an extension of active commissioning of B241, thus enabling BNGSL to recommence resuspension of the buffer tank and continue with the reduction of the hazard within B241.

Waste vitrification plant (WVP): BNGSL continued to record good rates of vitrified container production during the quarter. BNGSL is actively pursuing further improvements in throughput and discussions are continuing on proposed improvements to the container production processes.

Residue export facility (REF): The construction of REF adjacent to the Vitrified Product Store is part of a wider project to manage the safe transfer of a number of containers of high-level waste to overseas customers of BNGSL. The transfer is associated with government policy on waste substitution (refer to Cm 2919, Review of Radioactive Waste Management Policy, July 1995).

The project is progressing well with all major plant and equipment installed, and inactive commissioning has started. NII is engaging regularly with BNGSL on regulatory issues in advance of the start of active commissioning early in 2007.

Drigg

In line with NDA's draft strategy to complete the low-level waste repository LLWR at Drigg, BNGSL held an industry day in April 2006 to brief around 100 organisations about the process and requirements for a Site Licence Company for the LLWR that is separate from the Sellafield organisation. NII is now closely involved in the separation programme, which is following a tight timetable that seeks relicensing by the beginning of December 2006.

Springfields Fuels Limited

Management of Change Proposals for Decoupling: A meeting has been held with SFL to discuss the Management of Change (MoC) proposal covering the decoupling of SFL from the BNFL Structure and certain aspects of the sale

of Westinghouse to Toshiba. SFL has now completed their review of the existing interactions with BNGSL, BE etc who will be affected by the decoupling/sale and have identified a number of areas where new contracts will be required.

BNGSL – Capenhurst

NII participated in the licensee's evening public 'Open Forum' Local Stakeholder Group Meeting in Capenhurst & Ledsham Village Hall. This proved to be a lively meeting, with active participation from the public, and a wide range of questions being raised, including about the impact of the (low) radioactive discharges from the site on the local population.

Viewed overall, this was considered to be a constructive, open LSG meeting, where members of the public were able to express their perceived concerns to the licensee, NDA, EA and NII. Information provided at the meeting should help to alleviate some of the perceived concerns.

URENCO – Capenhurst

Tails Management Facility (TMF): NII has issued to UCL Acknowledgements for the Preliminary Safety Reports covering the Deconversion Plant and the Oxide Store, which form part of the proposed TMF at Capenhurst. UCL plan to construct the TMF by 2012 to deconvert Hex tails held on the UCL site and at its sister plants in Germany and the Netherlands. NII has indicated to UCL that NII intends to examine the Pre-commencement Safety Report.

Nuclear research sites

UKAEA

Dounreay

Lifetime Plan: UKAEA and NII are considering altering the approved arrangements for changes to Dounreay Site Remediation Plan Milestones. The arrangements would instead be applied to corresponding Lifetime Plan milestones. This will reduce the burden of monitoring two, sometimes differing, programmes.

New Dounreay LLW Repository: This repository will be for disposal of Dounreay wastes. Further definition will be needed to identify whether low specific activity (LSA) scale already stored on the site or from elsewhere in the Highland Region will be accepted.

UKAEA is considering applying for a new Disposal Authorisation before the site licence condition (SLC) is set up which could cover the repository as well as the existing site. Transfer of such an Authorisation is only possible for a nuclear licensed site (Energy Act 2004, s16A). HSE has not yet decided whether to press for the Dounreay licence to cover the new LLW facility.

D1204 Contamination Incident: NII had been notified of this incident in January 2006 and had asked the site for information relating to training of the individuals involved, operating instructions, risk assessment and supervision. UKAEA agreed to provide this information by early February, but it was early March before it was made available.

While the radiological consequences of this event were not serious, NII expressed concern on the underlying causes to this event.

The root causes of the incident appear to relate to deficiencies in control and supervision, training, operating instructions, risk assessment and radiation monitoring arrangements, ie similar to the underlying causes for previous events at the site such as the Dounreay Cementation Plant raffinate spillage and the Pulsed Column Laboratory contamination events.

NII has requested milestones for the completion of behavioural safety training across the site, implementation of the enhanced work control system, and the production of the Dounreay code of conduct for operations.

Winfrith

AEAT preparations are in hand for the sale of Waste Management Technology Limited (WMTL) shares, which will mark the final stage of the associated Aries project. A Cat B Management of Change proposal has been prepared by AEAT and submitted through the UKAEA modifications system. Examination of the document has revealed no matters of concern but outstanding confirmatory information relevant to the sale is still awaited from both AEAT and UKAEA.

Five consents were granted for the assignment of leases from AEAT to WMTL, and so AEAT no longer has a presence on the Winfrith site. AEAT has continued to press its case for clarification of whether or not WMTL's future operations constitute prescribed activities, to the extent that it has held meetings on the subject with NII at Harwell and separately with the Chief Inspector in Redgrave Court.

Windscale

B13: NII has been very critical about the achievability of the engineering improvement plan. The plan provided had no resource identified against tasks, and many of the interactions with NII were missing. A simple assessment of NII resource to deal with the Category B submissions shows very large, probably unacceptable peaks of resource. NDA is aware that in its current form the plan is not acceptable to NII.

GE Healthcare Ltd

The Chief Inspector met the licensee's board, among other things to reinforce NII's messages on the need for the safety implications of the 2004 takeover of the licensee to be properly managed. He was also able to make a short visit to the Grove Centre.

Imperial College Reactor Centre

To help develop its strategy for the eventual decommissioning of the Consort Reactor, Imperial College has appointed UKAEA under a consultancy contract. UKAEA will help develop an approach to decommissioning and produce the appropriate high-level planning documentation required at this first stage.

Defence facility regulation

Nuclear submarine-related sites – General

Overall, the safety performance at the defence facilities inspected by the Division continues to be satisfactory with a range of issues being followed up as part of routine regulatory business. The sites are the Atomic Weapons Establishments at Aldermaston and Burghfield, Devonport (Devonport Royal Dockyard Ltd – DRDL), Barrow (BAE Systems Marine – BAESM), Rolls Royce Derby (Rolls Royce Marine Power Operations Ltd – RRMPOL), Clyde Naval Base, Rosyth Royal Dockyard Ltd (RRDL) and the Shore Test Facility at Dounreay.

Intervention strategies across the sector have been developed jointly with MoD's Defence Nuclear Safety Regulator (DNSR) for those activities and facilities that may affect safety, and which are of mutual interest to NII and DNSR. This strategy aims to make the most effective use of NII and DNSR resources through a process of joined up working and complementary regulation to ensure that intervention activities are proportionate and appropriately targeted.

Barrow

With our support and guidance, BAESM is restructuring the content and presentation of its Nuclear Site Safety Justification. In doing so, the licensee is moving from an approach that attempts to justify the facility as a whole, to one of targeting the areas of most serious risks and least well-controlled hazards. This has significantly reduced the number of safety submissions requiring regulatory attention and will allow a more proportionate and appropriate use of licensee and regulatory resource.

BAESM has embarked on a three-year strategy to improve its quality management systems, and is considering the options for developing a more positive safety culture. We have informed BAESM that we will support the Company in the development and implementation of these initiatives by proactively monitoring and inspecting progress, and offering advice and guidance when relevant and appropriate.

Devonport

In order to help secure a number of nuclear safety improvements to the processes and facilities at Devonport, a number of regulatory hold points have been agreed and are being used to permission key activities in the 'Staged Improvement Plan'. The latest regulatory hold points that have been agreed are:

- Agreement for the Long Overhaul Period with Refuel (LOP(R)) of the second in class Trident Submarine, HMS Victorious, is being carried out in 9 Dock.
- Agreement to allow the reactor pressure vessel main seal membrane to be cut and commencement of the defuel/refuel activity. It followed our assessment of safety improvements made to the reactor access house crane including a number of human performance related aspects.
- Agreement that was issued allowing a core boronation modification to be implemented and commissioned for HMS Triumph in 14 Dock. The core boronation process took place in mid-March 2006 and represents a significant improvement to nuclear safety and a consistent approach across the Devonport dock facilities for the LOP(R) process. This safeguard ensures that the core exhibits a margin to criticality in line with internationally accepted standards, and represents a significant regulatory achievement as the issue has been pursued for a considerable period.

Redundant Submarines: We have continued to monitor MoD's progress towards implementation of the strategy for dealing with laid up submarines at Devonport prior to the commencement of decommissioning. During the period a further redundant submarine (HMS Spartan) arrived at Devonport for storage prior to commencement of the Defuel, De-equip and Lay-up Preparations (DDLP). To comply with Government policy, MoD is required to defuel the redundant submarines that have left naval service, as soon as reasonably practicable. As the current DDLP facilities are coming to the end of their operational life, the NII gave notice to the licensee and MoD that no further DDLPs were to be carried out at Devonport until the installation of new facilities, to bring about a low-level defuelling route, was complete. A number of the improvements are still to be delivered including removal of the refuelling crane and installation of a new reactor access house. The current programme suggests that the new facilities can be completed by 2012 and we are pressing for an improvement to this timescale. Until the new facilities are brought into service we are satisfied that, subject to satisfactory monitoring arrangements, the redundant submarines can be safely stored in a fuelled state.

Rosyth

Work has commenced on the RD83 project to decommission the majority of areas used for nuclear activities on site. Discussions have commenced on the timescale for decommissioning the remaining areas not covered by the RD83 project with a view to being in a position to delicense the site at a date earlier than previously anticipated.

Southampton Z-Berth

The Southampton Off Site emergency arrangements (SOTONSAFE) were tested for the first time during exercise 'Foxwater 06' in February. Inspectors from NII and DNSR observed the exercise, which was considered to be a successful test of the off site emergency arrangements in accordance with regulation 10(1) of the Radiation (Emergency Preparedness and Public Information) Regulations 2001 (REPPIR).

Atomic Weapons Establishment (AWE)

AWE work will increase as a consequence of the £1.05 bn extra funding over three years that MoD declared in July 2005. This work is associated with safety cases for replacement facilities and modernisation of existing facilities to maintain the existing stockpile of nuclear warheads safely and efficiently.

NII has now developed its Integrated Intervention Strategy for AWE. A key part of this strategy is to continue to have early engagement with the licensee on significant projects in order to ensure NII's regulatory expectations are factored in early in

decision making and thereby minimise regulatory risk. NII has also developed a number of proactive projects as part of this strategy including:

- to provide advice to AWE to help develop 'Right-First-Time' safety cases; and
- to satisfy NII that AWE, with its considerable expansion of work, changes in its business focus, and increased use of contractors, will continue to retain the level of control required of a nuclear licensee.

These projects are on top of NII's continuing normal day-to-day regulatory activities.

NII is also continuing to develop its arrangements for interacting with a range of stakeholders, including MoD and other regulators, as part of its strategy. AWE has announced that it is developing a Staged Improvement Plan with a view to reducing risk across the sites, and NII will be working with all stakeholders on its development and implementation.

Security informed nuclear safety issues

We are continuing to work closely with our OCNS colleagues on security informed nuclear safety matters. Our advice has resulted in a number of changes to existing facilities and to proposed projects.

NSD issues

Organisation/Resources

As of 1 June 2006, NSD has 162 inspectors in post. This is short of resources required for predicted future work (excluding any new nuclear build work) and has impacted on strategic and assessment work given that we have maintained priority to site inspection work. However, as this continues, pressures are now showing here as well.

NSD management continue to reprioritise work to ensure that safety significant tasks are covered. This necessitates the postponement/deferral of longer-term strategic work (eg as happened with the SAPs Review Project).

Project to update the NII Safety Assessment Principles (SAPs)

The SAPs public consultation ended at the beginning of June 2006. 46 external responses were received, with nearly 200 pages of comments in total. Each of these comments will be reviewed and appropriately actioned.

The set questions have provided some useful results. Most respondents found the SAPs clear and those that did not have given useful suggestions of how to make further improvements. Overwhelmingly, respondents agreed with the use of IAEA safety standards to benchmark the SAPs. Most found the style and depth matched the technical complexity, but the consultation has shown a need for more explanation in some areas. There is some doubt about whether the SAPs have changed the safety standard NSD applies, but there was reasonable agreement that the SAPs are fit for both existing and new facilities.

The SAP Project Board will now take the information and use it to revise the SAPs, with a view to having a final version ready in the autumn of 2006.

For more information about SAPs, visit NSD's web pages on: www.hse.gov.uk/nuclear/saps/index.htm

International

Joint Convention Review Meeting

During the latter part of June an NSD team – augmented by retired inspectors, along with representatives of the environment agencies, NDA and industry – assisted the lead government department (DEFRA) in representing the UK at the Joint Convention Review Meeting. This convention covers the safety of radioactive waste and spent fuel. It requires every three years a report on the UK's compliance with the articles of the convention, which is subject to written and oral peer review by other states, with the aim of identifying good practices and areas where improvements should be considered. The UK's report was well received, as was the presentation and answers to questions on our day at the Review Meeting. The NSD team was warmly congratulated by DEFRA both for its excellent work in producing the report and for the input during the Review Meeting.

International Atomic Energy Agency (IAEA) Safety Standards

NSD has continued to contribute at various levels in the development of revised or new standards. Of particular note has been the development of overarching 'Fundamental Principles' that are intended to cover nuclear safety, sealed source safety, radioactive waste safety, radiological safety, nuclear transport safety, etc. We were successful at the Commission for Safety Standards meeting in refocusing one of the proposed Fundamental Principles around 'Leadership and Management For Safety' rather than a more restricted proposed principle that focused more on management of safety through QA systems.

IAEA International Regulatory Review

A high-level team of overseas nuclear regulators, led by the IAEA, provided an independent review of our regulation of existing nuclear power plants and our readiness to regulate and license new designs of reactors. This was in the context of there not having been any new build of reactors in the UK since the 1980s.

The report of the IAEA mission has been published on the HSE website. The team identified a number of good practices within NSD and with the UK regulatory system and these will be publicised worldwide for the benefit of other countries. These good practices included:

the mature and transparent regulatory system and the advanced review process;
highly trained, expert and experienced staff; and
a flexible regulatory regime that sets clear expectations for the licensees and permits NSD to make decisions on well-justified technical grounds.

The IAEA team also identified a number of suggestions and recommendations for improvement. These included:

- to establish an appropriate budget and staffing levels to accomplish all assigned work;
- to improve the independent capability for safety analysis in specific areas; and
- to improve operating experience feedback assessments and follow up corrective actions.

The team also provided advice on the approach to regulating proposals for new nuclear reactors, which was taken into account in developing the proposals for pre-licensing arrangements, now published in our response to the Energy Review. The full report can be viewed at: www.hse.gov.uk/nuclear/regulatoryreview/index.htm

Nuclear Energy Agency/Organisation for Economic Co-operation and Development

Work has continued to gear our research efforts through the NEA's Committee on the Safety of Nuclear Installations, and to seek ways to improve our regulation of the nuclear industry through the NEA's Committee on Nuclear Regulatory Activities and its working groups. This latter committee involves nuclear regulatory authorities from OECD countries working together to learn from each other and to address emerging issues.

We have continued to keep a watching brief on the international efforts to development a more collaborative approach to regulating new nuclear reactor designs. The NEA provides a secretariat function for this work.

The European Council Working Party on Nuclear Safety (WPNS)

In 2004, the European Council asked the EURATOM Community to undertake an extensive consultation with stakeholders before any EURATOM legal instruments are developed on nuclear safety and safe management of spent fuel and radioactive waste. WPNS was given this task, which was divided into three areas: nuclear safety; spent fuel and waste management; and financing decommissioning.

All the work is due to be finished by the end of 2006. The work on nuclear safety has shown the value of the international collaboration that is already undertaken, but also indicated areas where there may be extra benefit if EURATOM Member States work more closely with one another – for example, so that the Community has greater influence in improving nuclear safety in Member States and gains more from the outputs of various international organisations like the IAEA, WENRA, and the OECD's NEA. The work on spent fuel and waste management is less well developed, but should be ready by the end of the year. Finally, the work on financial aspects is due to be completed in the autumn.

Western Nuclear Regulators Association (WENRA)

Work is continuing to ensure NSD assessment work reflects the WENRA reference levels. These reference levels have been agreed as appropriate for operating nuclear power stations by the EURATOM, enlargement countries and Switzerland's nuclear safety regulators. The reference levels were out for public consultation until the beginning of June 2006 and will be revised to reflect the comments received. NSD is committed to apply these assessment reference levels and hence ensure they are met at UK nuclear power stations. Various approaches are being considered to ensure this is done efficiently and effectively.

Freedom of Information (FOI)

The Freedom of Information Act came into force on 1 January 2005, and placed a duty on public authorities to provide information on their activities to enquirers. NSD have received **107** requests for information under the provisions of FOI - **104** of which have been satisfactorily closed. **Five** appeals have taken place, with the original decisions to withhold upheld. There is currently one appeal on an active case. There are no current appeals for NSD registered with the Information Commissioner. NSD has received some complex requests, which have needed the deadlines to be extended to enable the public interest test to be undertaken.

Information on the work of NSD can be found at: www.hse.gov.uk/nuclear/index.htm

Freedom of Information enquiries relating to the work of HSE's Nuclear Safety Directorate should be sent to:

Michael Jennions
Building 4N.1
Redgrave Court
Merton Road
L20 7HS

Via e-mail to:
NSDenquiries@hse.gsi.gov.uk

Further information

HSE produces a wide range of documents. Some are available as printed publications, both priced and free, and others are only accessible via the HSE website: **www.hse.gov.uk**.

HSE priced and free publications are available by mail order from HSE Books, PO Box 1999, Sudbury, Suffolk CO10 2WA Tel: 01787 881165 Fax 01787 313995, Website www.hsebooks.co.uk (HSE priced publications are also available from bookshops and free leaflets can be downloaded from HSE's website: www.hse.gov.uk).

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

Single copies of HSE's Quarterly statement of nuclear incidents at nuclear installations can be obtained free from the NII Information Centre, HSE, Building 4S.G, Room 011, Redgrave Court, Merton Road, Bootle, Merseyside, L20 7HS, Tel: 0151 951 4103.

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

Your views

The Editor welcomes your views about the newsletter or the work of NSD. While we do not undertake to publish individual letters, comments about the scope and depth of coverage will help us in assessing the impact of the newsletter and to ensure that it remains relevant and informative. Please send any comments you may have to Paul Jones, Building 4N.1, Redgrave Court, Merton Road, Bootle, Merseyside, L20 7HS or e-mail: **paul.jones@hse.gsi.gov.uk**.

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