



HM NUCLEAR INSTALLATIONS INSPECTORATE
BNGSL SELLAFIELD AND DRIGG, AND UKAEA WINDSCALE
WEST CUMBRIA SITES STAKEHOLDER GROUP
QUARTERLY REPORT FOR 1 APRIL TO 30 JUNE 2007

FOREWORD

This report is issued as part of the Health and Safety Executive's commitment to make information about inspection and regulatory activities relating to the above sites available to the public. It is for distribution to members of the West Cumbria Sites Stakeholder Group (WCSSG) and covers activities associated with the regulation of safety at BNGSL Sellafield and Drigg, and UKAEA Windscale.

These reports are distributed quarterly and will be available on the Internet. Site Inspectors of HM Nuclear Installations Inspectorate (NII) attend WCSSG meetings and will be happy to respond to any questions raised there. Any other person wishing to inquire about matters covered by this report should contact HSE, Nuclear Safety Directorate Information Centre on 0151 951 4103.

This report will be put onto the HSE Website at

<http://www.hse.gov/nsd/nsdhome.htm> under "Local Liaison Committee Reports"

1	INTRODUCTION
	NII Inspectors made a total of 69 visits to the Sellafield, Calder Hall, Windscale and Drigg sites during the quarter. This involved a total of 236 days on site (see Table 1 for details). The more significant issues identified during these inspections are summarised below.
2	BNGSL SELLAFIELD
2.1	GENERAL SITE MATTERS
2.1.1	Sellafield Corporate Intervention Strategy (SCIS) Project
	Work on the SCIS project continued despite resource difficulties. Informative interviews with BNGSL senior managers took place as part of the safety culture and leadership intervention. Progress was also made on other interventions including competence management, Key Safety Performance Indicators and organizational infrastructure.
2.1.2	Sellafield Safety Representatives
	As part of the work to build upon good practice developed on other nuclear installations, the setting up an annual Site Safety Day, supported by NII and FOD, was proposed at the Site Safety Representatives Forum. The proposal was warmly received and the Forum agreed to offer some suggestions regarding attendees.
2.2	INCIDENTS
2.3	MAGNOX REPROCESSING OPERATIONS
2.4	THORP OPERATIONS
2.4.1	THORP Restart
	The remaining tank of plutonium nitrate, left from earlier reprocessing operations, was processed during the quarter. Evaporator problems in the Highly Active Liquid Evaporation and Storage (HALES) plant continued during the quarter, however a Licence Instrument was issued in May to permit the limited use of evaporator C to process high-level liquid waste from THORP. This allowed the reprocessing of dissolved fuel to restart on 1 July and the shearing of fuel to restart on 4 July.
2.4.2	Multi-Element Bottle Export Facility (MEBXF)
	MEB decontamination problems continued to delay the start of active commissioning of the MEBXF. BNGSL worked on the development of short term proposals that utilise existing facilities to decontaminate MEBs, with the aim of providing a separate decontamination facility in the longer term. The proposals are planned to be submitted during the next quarter.
2.4.3	AGR Fuel In Receipt & Storage Ponds
	BNGSL confirmed that the pond roof damage in 2005 was believed to have led to increased impurity levels within the pond water, which in turn had led to some fuel pin failures within the ponds. Priority is therefore being given to failed fuel and the restart

of fuel shearing will comprise 33te of suspect fuel. Measures were put in hand to contain the activity resulting from failed fuel, and options were being developed for the removal of the activity. BNGSL is continuing to keep NII and EA apprised of the situation. The need to develop an Oxide Operating Programme, to deal with the long-term management of all oxide fuel, was being pursued by BNGSL.

2.5 HIGH ACTIVE LIQUOR WASTE PLANTS

2.5.1 HALES: Matters of strategic regulatory concern

In previous reports to the WCSSG, NII recorded that strategically significant concerns associated with HALES had been raised in relation to the integrity of evaporators and HASTs, and to staffing levels in HALES. NII has continued to press for improvements. These matters are covered elsewhere in this report.

2.5.2 HLWP Annual Review of Safety, 28 June

NII participated in the HLWP Annual Review of Safety. This was an effective meeting characterised by open and honest debate. NII welcomed the progress in a number of areas during 2006/07. But we questioned the continued lack of resources across HLWP and the licensee was actioned to respond to NII. NII also questioned the lack of focus applied by HLWP in several areas (notably emergency arrangements and fire safety) which were revealed through planned NII inspections, and said that the licensee should undertake its own proactive challenges to identify areas of management weakness.

2.5.3 HLWP emergency arrangements

An inspection for compliance with Licence Condition 11 (Emergency Arrangements) revealed that the resources applied to HLWP emergency arrangements and the management focus afforded by HLWP to this topic are not fully adequate. NII expressed concern given the fact that HALES represents the reference accident for the Sellafield site. The licensee accepted the criticism and will consider means of strengthening the management of emergency arrangements and will convey these to NII.

2.5.4 Highly Active Liquor evaporative capacity

There are currently three evaporators within HALES (referred to as Evaporators A, B and C). They are used to evaporate High Active (HA) raffinate produced during reprocessing and to process effluent from WVP. Once concentrated through evaporation, the raffinate is called Highly Active Liquor (HAL). HAL is stored in the HALES facility prior to feeding to WVP for vitrification, which immobilises the waste for long term storage and eventual disposal. The status of the evaporators (as of July 2007) is:

- Evaporator A: Evaporator A suffered a suspected failed coil on 20 June 2007. The evaporator is currently shutdown and undergoing a structured testing programme, and modifications are underway with a view to providing operational capacity towards the end of 2007.
- Evaporator B: This was shut down in December 2004 following activity breakthrough. There is an ongoing project to inspect, assess and modify

evaporator B that will lead to a revised safety case to justify operation in 2008, and good progress is being made.

- Evaporator C: NII assessed a revised safety case proposal for its operation to allow liquors from THORP to be processed through this evaporator. The liquors are from the THORP Feed Clarification Cell (FCC) event plus liquors from a small amount of shearing used to dilute the FCC liquors. NII agreement was given on 8 June 2007. The proposal was later revised to allow Evaporator C to be used also on Magnox liquors and WVP effluents, due to the failure of a coil on Evaporator A.

The position on evaporative capacity is evolving quickly and it is not possible at present to be certain as to the implications. At present SL have not provided a justification for the further use of Evaporator C on additional THORP liquors.

The increase in the numbers of experienced engineers working on the evaporator recovery programme has helped maintain progress in, for example, the rate and quality of safety case production, and the developments of new techniques for the non-destructive testing of evaporator heating/cooling components.

NII continues to engage SL on the provision of new evaporative capacity. Groundworks for Evaporator D are well advanced, and NII anticipates receiving the pre-construction safety case for Evaporator D in October 2007. NII is working closely with SL, the Environment Agency and the Nuclear Decommissioning Authority on opportunities to accelerate Evaporator D whilst ensuring that the safety of design and construction is not compromised. SL is also considering the need for further evaporative capacity (Evaporator E).

2.5.5	HAL Stocks
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SL 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, supported by our inspection activities, are used by NII to judge whether SL continues to meet the HAL Specification (Licence Instrument No 343) issued in 2001. The Specification provides a limit on the amount of HAL that can be stored at any time and promotes HAL stocks reduction. Satisfactory performance of WVP, the extended outage at THORP and recent problems with the HALES evaporators have meant that HAL stocks are currently well below the levels required by the Specification. Consequently NII is content that SL has kept within the requirements of the Specification.

NII's 2006 Biennial Review of the HAL Stocks Specification is now complete and a statement was attached to the previous WCSSG report. Among other things, the Review recommends tightening the Specification to lock-in gains arising from the THORP outage. Work is now ongoing to implement the Review Recommendations, which will lead to the Specification being re-issued. In the meantime NII will continue to regulate the HAL stocks according to the existing Specification.

2.5.6	Highly Active Storage Tanks (HAST)
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Previous WCSSG reports have indicated that HAST cooling components have suffered over the years from corrosion. A number of cooling coils have been declared failed. A failure causes a breakthrough of activity into the cooling water circuits which can lead to a radioactive release if not properly managed. HAST cooling coil failure rates and the location of recent failed coils has led to uncertainties over the ability of the newer HASTs to service the needs of the HAL stocks strategy. If the plant starts to deteriorate more quickly, then the ability of HALEs to receive raffinates will be prejudiced (with knock-on consequences).

SL's present contingency plan is a project to dose the cooling water circuits with nitrates as a way of stopping, or at least reducing the rate of, corrosion failures. At present NII has a number of outstanding concerns connected with nitrate dosing. One of the options to insure against these problems would be to build smaller, inherently safer replacement HASTs. In order for these to be effective on sensible timescales, work needs to start as soon as possible. NII wishes to see new HAST designs developed to a stage where their viability could be judged alongside other options under consideration. SL is in the process of evaluating the need for replacement HASTs as part of its response to the Recommendations of NII's 2006 Biennial Review of the HAL Stocks Specification.

2.5.7	HALES housekeeping
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Both NII and Sellafield Limited regard the standard of housekeeping on nuclear plants to be an indicator of organisational health. For this reason, NII inspectors routinely monitor housekeeping standards during plant inspection visits.

NII has noted poor housekeeping standards across HALEs on a number of visits and concerns have been expressed to Sellafield Limited. In particular NII found that routine plant walkdowns by licensee staff were not fully effective. As a result the licensee instigated a system of weekly inspections, properly recorded and actioned. This, coupled with renewed work on human performance and conduct of operations, is already starting to raise standards.

2.5.8	Waste Vitrification Plant
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All three lines were in outage at the start of April which lasted until early May. Since then, both Line 1 and Line 2 have performed well through the quarter. Problems with the glass frit feed system on Line 3 affected HAL feed reducing the number of containers produced in the quarter. There have been no significant effects on HAL stocks reduction.

WVP continues to experience difficulties with the processing of radioactive waste from the breakdown cells, after a period of an improved performance. These cells hold a significant amount of waste that originates largely from failed vitrification components removed during vitrification line rebuilds. If waste volumes accumulate to an extent that further rebuilds are not possible then it may become difficult to maintain progress with vitrification, which in turn could have consequences for HAL stocks reduction.

NII carried out an inspection of WVP radwaste management on 9 May. We expressed concern that Sellafield Limited could not demonstrate complete control of the waste because of the absence of a detailed waste inventory. We consider that Sellafield Limited should increase the focus applied to radwaste management to

minimise so far as is reasonably practicable the amount of radwaste held in the breakdown cells. However, NII recognises the efforts that are being applied to clear radwaste from operational cells, and we do understand the operational constraints within WVP which mean that radwaste management cannot always be top priority.

An inspection of the transport of this waste from WVP to MBGWS will take place in July 2007, after which NII will convey the findings of both inspections formally to Sellafield Limited. The outcome will be reported to the WCSSG.

2.5.9 WVP SQEPs and DAPs inspection

An inspection of WVP was undertaken for compliance with Licence Conditions 10 (Training) and 12 (Duly Authorised and other Suitable Qualified and Experienced Persons). The purpose of LC 10 is to ensure that all those people who have responsibility for an action which may affect safety are adequately trained for that purpose. And the purpose of LC 12 is to ensure that only suitably qualified and experienced persons (SQEPs) perform duties which may affect safety, and LC12 also makes provision for appointing as “duly authorised persons” (DAPs) those persons carrying out and directly supervising specified operations of the highest safety significance.

It was clear that there has been substantial progress on the training of WVP manufacturing staff. However, NII concluded that the training arrangements for engineering staff needed to be developed. The licensee should explain in a local document the way that the Sellafield site procedures for DAPs & SQEPs are implemented in WVP. We had concerns that the use of systems within WVP for monitoring training/SQEP status appeared to duplicate those within the corporate system. The Site Inspector will be writing to WVP with the findings in due course.

2.5.10 Residue Export Facility (REF)

REF is progressing reasonably well though it is running slightly behind programme. Inactive commissioning is proceeding in stages. NII continues to maintain regular contact on this strategically important project in advance of the start of active commissioning in 2007. Regulatory issues include the necessary interfaces with other facilities at Sellafield to ensure the safe and timely export overseas of containers of high level waste (in accordance with government policy on waste substitution). Standards of housekeeping and health and safety on REF remain generally good, although efforts continue to be made by SL to learn from a number of minor conventional safety incidents and to improve safety awareness. A request for agreement to active commissioning is expected to be submitted to NII in September 2007.

2.6 MOX OPERATIONS

2.6.1 Sellafield MOX Plant (SMP) Commissioning and Operation

A new site inspector for SMP has been appointed in anticipation of the pending retirement of the current inspector. Activities for this quarter have therefore been dominated by introductory site visits for familiarisation of the new Inspector and handover activities between the outgoing and incoming inspectors.

Permissioning of the Category B PMP's in support of the campaign change to the

second campaign of producing fuel is proceeding and no issues serious enough to prevent permissioning have arisen to date. Permissioning is expected to be completed late June / July 2007.

The current Licensing period, for active commissioning of SMP, ends with the completion of the current campaign of fuel manufacture and meetings were held with SMP senior management to discuss the future permissioning of the facility and the strategy for granting of Consent To Operate. Discussions are continuing.

2.6.2 Contamination Event

The NII investigation into the contamination event that occurred on 10/1/07 in SMP was completed. A meeting was held with SMP managers to discuss the way forward and a letter formalising the position was sent to BNGSL. NII will monitor BNGSL's progress in rectifying deficiencies revealed by the event.

2.7 WASTE TREATMENT & DECOMMISSIONING

2.8 LEGACY PONDS & SILOS

2.9 SITE & PLANT SERVICES, INCLUDING RESEARCH & DEVELOPMENT

2.9.1 Analytical Services strategy regulation

A meeting was held with Plant Services management to discuss the regulation of future strategies for Analytical Services. The main points of the Analytical Services strategy paper that BNGSL presented to the previous meeting on 20th February were discussed. BNGSL confirmed that funding is included in the 2007/08 LTP for the implementation of the Analytical Services revised safety case, and further funding is incorporated into the LTP for lab decommissioning. There is also financial support in the LTP for the refurbishment of up to 10 labs over the next few years. A programme has been produced for the total re-roofing of the Analytical Services building over the next 5 years.

BNGSL have presented the Analytical Services strategy paper to NDA, who have challenged the current strategy of a replacement facility for the Analytical Services building by 2020 by asking if a replacement could not be built sooner. BNGSL are awaiting further feedback from NDA. Although the profile of samples requiring analysis will change from predominantly routine HA and MA operational samples, to mainly LA samples from remediation and cleanup operations after 2020, there will be a requirement to analyse MA samples throughout the predicted lifetime of the site.

BNGSL presented the strategy for the implementation of the Analytical Services revised safety case, and proposed that the second-cycle safety case revision may not be required in 2016. The live safety case will be kept updated, with the baseline safety case documents being updated as changes are required, rather than documents being attached to the safety case. A similar approach is apparently being trialled by the safety case owner for HLWP. NII asked BNGSL to consider how the live safety case update strategy would be incorporated into the Analytical Services arrangements so that it would operate even if key personnel, such as the Head of Analytical Services, were to change. It was suggested that BNGSL submit proposals to map out the medium and long term strategies, with one for the period 2010 to 2020, and one for 2020 onwards. These proposals will be discussed at the next Analytical Services

strategy meeting.

2.9.2 Sealine pipebridge event

During the afternoon of Tuesday 24th April, a Sir Robert McAlpine operative was using a diamond drill in a vertical position to remove concrete shielding adjacent to sealine 3 on the sealine pipebridge. His arm became entangled in the drill extension piece. It is not clear at present how and why this happened. Two other Sir Robert McAlpine operatives working close by (they did not see the incident occur) stopped the drill by disconnecting its power supply, sent other workers to raise the alarm and released the man's arm from the drill. This area is classed as a C2 area and is, in effect, in the Separation Area.

Sellafield emergency services attended site and monitored the injured man until the Cumbria ambulance service arrived and took him to West Cumberland Hospital. He had compound fractures to his left arm and some tissue damage. All refurbishment work on the site was temporarily suspended pending a review. A Board of Inquiry has been initiated.

The FOD, Carlisle office was contacted, and briefed on the details of the event. The S&PS inspector and one of the FOD inspectors have attended site to gather information. It has been agreed that FOD will investigate the conventional safety aspects of the event, and ND will examine BNGSL's supervision of the contractor.

2.10 EFFLUENT & ENCAPSULATION

3 CALDER HALL

4 UKAEA WINDSCALE

4.1 Site Transition/Relicensing

NII Inspectors have had a number of meetings with the UKAEA/Sellafield Ltd project team on the work to allow the transition of licensee for the Windscale site from UKAEA to Sellafield Ltd. The issue of a new licence for the Windscale site is planned for April 2008.

4.2 Piles Project - Pile 2 Isotope removal

NII has issued an agreement allowing UKAEA to remove the remaining Isotope cartridges from two channels within Pile 2. The removal of the isotope cartridges has now been completed by the project team.

4.3 Emergency Arrangements

NII has issued an approval for the revised Windscale Emergency Plan. The arrangements within the plan have not been changed significantly. The changes being largely concerned with updating the communication information within the plan to reflect for example, changes in organisational structures and names etc.

4.4 Site Inspector Handover

During the reporting period there has been a change in the NII Site Inspector for the Windscale Site. Consequently there have been a number of familiarisation visits and

discussions during this period to facilitate the handover between NII Site Inspectors.

5	Drigg
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HM NUCLEAR INSTALLATIONS INSPECTORATE

TABLE 1

**QUARTERLY RETURNS FOR
SELLAFIELD, CALDER HALL, DRIGG AND WINDSCALE**

DURING THE QUARTER

1 APRIL TO 30 JUNE 2007

	BNGSL SELLAFIELD ¹	BNGSL CALDER HALL ²	BNGSL DRIGG	UKAEA WINDSCALE
NUMBER OF VISITS	61	2	3	3
INSPECTION DAYS ON SITE	213.5	6.5	4.5	11.5
ENFORCEMENT ACTIONS ³	0	0	0	0
Incidents in the quarter likely to be published in HSE's quarterly "Statement of Nuclear Incidents at Nuclear Installations"	0	0	0	0
CONSENTS, APPROVALS	0	0	0	1
LICENCE INSTRUMENTS	1	0	0	2

¹ The figures shown for BNGSL Sellafield are those for BNGSL's chemical plants. They do not include figures for the plants within the Electricity Generation Group (see note 2 below)

² The figures shown for BNGSL Calder Hall are those for the plants on the Sellafield site operated by (or for) the Electricity Generation group, primarily Calder Hall nuclear power plant.

³ An enforcement action may be a Direction issued by HSE under the nuclear site licence, an Improvement Notice, or a Prohibition Notice, or the laying of information in pursuit of a prosecution.

TABLE 2

**APPROVALS, CONSENTS, DIRECTIONS AND WITHDRAWALS
ISSUED DURING THE QUARTER**

1 APRIL TO 30 JUNE 2007

Date	Type	Ref. No.	Description
BNGSL DRIGG Nuclear Site Licence no. 29A			
BNGSL Sellafield (and Calder Works) – Nuclear Site Licence no. 31G			
BNGSL Windscale – Nuclear Site Licence no. 46B			
June 07	Approval	530	Windscale Approval hereby approves the following alteration or amendment to part of the arrangements for dealing with any accident or emergency on site

TABLE 3

LICENCE INSTRUMENTS ISSUED DURING THE QUARTER

1 APRIL TO 30 JUNE 2007

Date	Type	Ref. No.	Description
BNGSL DRIGG Nuclear Site Licence no. 29A			
BNGSL Sellafield (and Calder Works) – Nuclear Site Licence no. 31G			
08/06/07	Agreement	645	Agreement to commence mod to an existing plant - operation of evaporator 'c' under the revised safety case (pmp hales /07/473)
UKAEA WINDSCALE – Nuclear Site Licence no. 46B			
10/05/07	Agreement	527	Agreement to Inactive Commissioning for Receipt and Processing of B29 Fuel in B13 - 12 February 2007
May 07	Specification	529	Specification under LC 25(4) Movement of HASS sources