



HM NUCLEAR INSTALLATIONS INSPECTORATE
BNGSL SELLAFIELD AND DRIGG, AND UKAEA WINDSCALE
WEST CUMBRIA SITES STAKEHOLDER GROUP
QUARTERLY REPORT FOR 1 JULY TO 31 SEPTEMBER 2006

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 86 visits to the Sellafield, Calder Hall, Windscale and Drigg sites during the quarter. This involved a total of 253.5 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

Justin McCracken and Giles Denham Visit to Sellafield

A very successful visit to the Sellafield site by Justin McCracken, Deputy Chief Executive HSE Operations, and Giles Denham, Director HSE Policy, was hosted by the NII Sellafield Site Inspection Team. The event was established to allow Mr McCracken and Mr Denham to accompany members of the inspection team in inspections of key facilities to a) meet the team, b) observe the interaction of NII and BNGSL during visits, c) hear directly from the inspectors what were the success points and the key issues for their plants, d) to meet safety reps and e) to have the opportunity to communicate directly with the BNGSL Board members. Mr McCracken expressed his view that, while noting the considerable challenge facing BNGSL, it was pleasing to see the improvement to plant and attitude since his previous visits during his time with EA.

Safety Committee Changes.

NII gave formal approval to the new structure for BNGSL's Nuclear Safety Committee. NII believes that the changes will provide a better platform to cope with its assessment of the impact of the significant changes expected during the coming years.

2.1.1 Site Wide Review

The Site Wide Review has been renamed the Sellafield Corporate Intervention Strategy (SCIS). Members of the SCIS Team gave a presentation to Sellafield Senior Managers where information on the planned interventions was provided. The Team emphasised NSD's wish to work with BNGSL on the project, with the aim of achieving sustained improvements in managing for safety and safety culture. BNGSL welcomed the initiative and looked forward to working with NSD. Interventions are planned to commence later this year.

2.2 INCIDENTS

2.2.1

The site inspector carried out an initial investigation of an incident - a tank was found to have floated due to water ingress into the tank cell. The investigation revealed examples of poor standards of asset care for this plant area. Whilst the plant area in question has a relatively low safety significance, the issues raised as a result of the incident may have implications for BNGSL's safety management system in general and

for asset care in particular. The site inspector and his counterpart at EA produced a joint letter expressing concern, and further joint inspection on HALES asset care has been planned for November 2006.

2.2.2 Fuel Handling Plant (FHP) Elevated Aerial Discharges

BNGSL reported to NII in August that there had been a gradual unexplained increase in aerial discharges over recent months from FHP and it was likely that the plant limit for caesium-137 would be breached. BNGSL recently completed its statutory measurements and confirmed that the FHP 12 month rolling discharge for caesium-137 to the end of August was 305 megabecquerels which was in excess of the 300 megabecquerel plant limit. It should be noted that the FHP plant limits are a small percentage of the overall site limits and at the current levels the increased discharges have little impact on worker and public doses. The maximum radiation dose to a member of the public that could occur as a result of the discharge made at the plant limit for the FHP for a full 12 month period is less than 0.2 microsieverts.

BNGSL's investigation into the reasons for the increased discharges have so far been inconclusive but detailed work is ongoing. NII is working closely with the Environment Agency to monitor BNGSL's ongoing investigations. The Environment Agency is the lead regulator for off-site discharges.

2.3 MAGNOX REPROCESSING OPERATIONS

2.3.1 Reprocessing Operations

NII continues to monitor BNGSL's progress in making improvements to the safe systems of work process in Magnox Reprocessing plants.

2.3.2 Fuel Handling Plant (FHP)

Slow progress is being made with the processing of corroded fuel due to increased fuel handling and plant operability problems. BNGSL consider that it is unlikely to be able to meet the annual corroded fuel reprocessing target and a more realistic target will be proposed. NII is encouraging BNGSL to investigate all the options to increase the corroded fuel reprocessing rate.

2.4 THORP OPERATIONS

2.4.1 THORP RESTART

NSD has been working closely with BNGSL on bringing forward the date for the THORP restart. An accelerated programme, which is very challenging for NSD and relies heavily upon BNGSL delivering information of the required quality on time, has been put in place. Additional resource has been obtained and some work in NSD has been reallocated to meet the challenge.

The accelerated programme has been agreed with BNGSL. Readiness inspections have begun, and target dates have been agreed with BNGSL for a final close out inspection and associated start up meetings.

2.5 HIGH ACTIVE LIQUOR WASTE PLANTS

2.5.1 HAL Stocks

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 WVP coupled with the extended outage at THORP has meant that HAL stocks are currently at their lowest levels since the Specification was issued and well below that required by the Specification. Consequently NII is content that BNGSL has kept within the requirements of 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.

2.5.2 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 components are approaching the end of their design lives.

NII continues to maintain close liaison with BNGSL with regard to evaporator corrosion inspections, and on the preparation by BNGSL of a safety case for the continued operation of Evaporator A beyond September 2006. There is considerable effort being expended by BNGSL to inspect for corrosion. The results to date point to corrosion rates being greater than had been originally estimated from simulated corrosion studies, particularly for Thorp liquors. The information received continues to reinforce the need for new evaporative capacity as soon as reasonably practicable.

NII undertook an inspection of Evaporator A operations in anticipation of the receipt of the safety case for continued operation of Evap A. The outcome was generally satisfactory and issues raised will be fed into the assessment of the safety case for continued operation. NII completed its review of this safety case during the quarter and formally agreed to continued operation of Evaporator A. The agreement was subject to commitments given by BNGSL including the need to carry out further inspections and is valid up to and including 13th December 2006.

NII 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. NII, along with the Environment Agency and the Nuclear Decommissioning Authority, have continued the regular dialogue with BNGSL in respect of this project. BNGSL presented proposals for excavation and we discussed the means to ensure the safety of existing buildings, notably B215. NII considers that there is enough uncertainty in the ongoing operation of the existing evaporators that it would be prudent to consider building a second new evaporator (Evaporator E).

2.5.3 Highly Active Storage Tanks (HAST)

Testing has continued on a number of HAST cooling components. Six HAST cooling coils has been reclassified from “healthy” to “suspect”, bringing the total number of “suspect” coils to eight. As a result, NII has revised its statistical analysis of HAST coil failure rates and concludes that, although the total number of “suspect” coils is broadly in line with expectations, their distribution between HASTs is a cause for concern: coil failures in the later HASTs appear to be more prevalent and occurring sooner than in the earlier HASTs. Hence NII’s analysis suggests that the most recently constructed HASTs have potentially shorter remaining lives than had been assumed.

NII met BNGSL to discuss these findings. We agreed that the findings should be subject to confirmation by suitably qualified and experienced persons and BNGSL has set this in motion. If NII’s findings are correct, BNGSL will need to plan for the early loss of some HASTs. BNGSL is reviewing its HALES operational strategy to accommodate this. Discussions continue and the outcome will be reported to the WCSSG.

Meanwhile, discussions are ongoing on a proposal to apply a corrosion inhibitor (nitrate) to HAST cooling water and to introduce additional engineered barriers to further protect against any release of radioactivity via the HAST cooling water system arising from cooling component failures. There is little doubt that action needs to be taken because otherwise the cooling margin will steadily deteriorate. As it is not yet clear that deploying a corrosion inhibitor is the optimum strategy, alternative mitigating strategies are being sought from BNGSL.

2.5.4 Windscale Vitrification Plant (WVP)

Production of vitrified waste containers was reported to be slightly behind target due mainly to unplanned outages on all three lines. Similarly the numbers of containers to store is lower than planned.

NII met BNGSL to discuss the completion of shield door modifications. NII sought to accelerate the programme of work.

BNGSL’s proposal to complete the WVP Lines 1 & 2 work by summer 2007 is acceptable to NII. BNGSL propose completing the work during planned outages in late 2006 and 2007. NII would have preferred earlier completion, but we recognised that the use of planned shutdowns avoids the loss of container production that would occur with having to declare unplanned shutdowns. Hence NII was content with this proposal. This position has been confirmed via an exchange of correspondence.

The site inspector carried out an inspection of WVP Lines 1, 2 and 3. Although in general the plant condition as sampled was considered to be adequate, there is room for improvement in several areas. For example: the condition of non-routine areas; the continued extensive use of scaffolding; the accumulation of redundant equipment which should be disposed of quickly; ad hoc storage of plant items. The temporary use of the VPS charge face as a lay-down area for equipment is unacceptable and BNGSL took immediate action to clear the charge face.

2.5.5 HALES Alarm Management

NII wrote to BNGSL to confirm the findings and recommendations arising from NII inspections of alarm management at the HALES Control Room. HALES is a very high hazard plant that has a significant future life. It is therefore the expectation of NII that the management of hazards within the plant (including the engineering of and the response to process alarms) should, so far as is reasonably practicable, meet the requirement of 'good practice' as a minimum, and that further measures to reduce risk should be actively sought.

NII welcomed the implementation of revised Sellafield procedures which have raised the profile and importance of alarms and has resulted in significant improvements. Arrangements for the maintenance and proof testing of safety instrumentation were also observed to be being actively improved, and there is clearly local management commitment to these initiatives. However, the management arrangements for the maintenance and operational control of important alarms need to be improved, and this will require additional staff.

We concluded that the provisions for process alarms within B215 and the associated HALES buildings should be subject to a thorough fundamental alarm management review against modern standards, with the intention of providing integrated alarm systems that meet, as a minimum, the requirements of 'good practice' in terms of ergonomics, alarm management and plant engineering, and which should take account of obsolescence issues.

NII will be meeting BNGSL to discuss the response to our letter.

2.5.6 HLWP fire safety inspection

The site inspector and the HSE Fire Surveyor carried out an inspection for compliance with the Fire Certificate. The inspection identified numerous shortfalls with respect to Fire Certificate compliance. Only WVP Line 3 appears to be compliant, although we noted some degradation indicating that the poor standards tolerated elsewhere are starting to migrate. BNGSL should have identified all of the issues through routine inspections by competent persons, and overall the management of fire safety needs to improve. BNGSL accepted the points raised and there is likely to be a rapid improvement of the hardware. But a more significant concern is the need to improve the safety culture such that high standards are maintained. HSE has conveyed the findings of this inspection to BNGSL requesting, amongst other things, a survey of fire doors and emergency lighting. A follow-up inspection will be carried out in December 2006.

2.5.7 Residue Export Facility

The project is progressing well. Construction is all but complete and inactive commissioning is proceeding in stages. NII continues to engage regularly with BNGSL on regulatory issues in advance of the start of active commissioning early in 2007. These 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 BNGSL to learn from a number of minor conventional safety incidents and to improve safety awareness.

2.6 MOX OPERATIONS

2.7 WASTE TREATMENT & DECOMMISSIONING

2.7.1 Contaminated Land & Groundwater Management

BNGSL continues to establish its contaminated land project infrastructure. It is disappointing that placing the main resource contract has been delayed by some months. The NII/EA joint regulatory task team is monitoring progress against a short term programme of deliverables and continues to press for the start of early remediation where this is practicable.

2.8 LEGACY PONDS & SILOS

2.8.1 Magnox Swarf Storage Silos and Pile Fuel Cladding Silos

Progress continues with the programme of plant safety enhancements and preparations for waste retrieval for the Magnox Swarf Storage Silos. NII has recently given permission for operation of the new West End Crane to enable more flexible working on the plant. If waste remediation is to remain on target progress needs to be made with construction of the supporting waste treatment plant. Satisfactory progress is being made on the preparations for remediation of the Pile Fuel Cladding Silos with the recent start of early foundations work for the new retrievals building.

2.8.2 Legacy Ponds

NII have recently issued a Licence Instrument to BNGSL for Installation of the Gantry Refurbishment System on to Magnox Storage Pond. Installation is planned for October 2006, but depends on suitable weather conditions.

NII granted a Licence Instrument to BNGSL for installation of a local effluent treatment plant (LETP) in the Piles Storage pond. The LETP will reduce dose levels for operators at the facility and reduce radioactive discharges. The installation has since been completed successfully.

2.9 SITE & PLANT SERVICES, INCLUDING RESEARCH & DEVELOPMENT

2.9.1 Analytical Services

In October, two contract joiners were working in a former plutonium-handling laboratory, and during removal of part of the skirting board, the 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 year to date (YTD) dose of ~17 mSv. The Site Inspector and an 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 Approved Dosimetry Service (ADS) internal dosimetry regime. Initial use of HSE's Enforcement Management Model (EMM) indicates that some form of regulatory action is required. NII detailed the concerns to BNGSL, who have provided a response to the issues. Regulatory action is being considered.

BNGSL gave an update on the status of the review of the safety case for the Analytical Services Laboratories. The final submission date has breached the T - 9 months from decision date that requires NII's agreement to the delays. Initial use of the EMM indicates that some form of regulatory action is required. The Head of Analytical Services has provided updated programmes for the submission and implementation of the revised safety case. Evidence has been provided to explain the delay to the safety case submission and to detail the measures taken to ensure that the submission and implementation will be completed to the revised target dates. NII are considering what regulatory action to take.

Meetings were held with Infrastructure and Plant Services management to discuss the future strategies for Analytical Services. The potential short-term outcomes from the delayed revision of the safety case and their impact on the use of the Analytical Services Building were discussed, including recommendations for refurbishment of the ventilation systems and the radioactive materials storage arrangements. Plant Services management have set a team up to produce a medium-term strategy for the Laboratories, and have confirmed that this strategy will be produced in early 2007. BNGSL have presented the long-term strategy alternatives for Analytical Services to the NDA, with a range of options for consideration.

2.9.2 Active Area Services

A presentation was given to NII to explain the current site strategy for decontamination as an update on the presentation given in August 2005. The main themes of the presentation were current position of the existing Decontamination Centre (DC), proposals on future decontamination facilities and possible succession, and radioactive waste management - the decontamination stage.

The current position is as follows:

- the DC carries out a programme of routine work decontaminating filters & castles etc
- the Effluent Plant Maintenance Facility (EPMF) has been identified as a possible successor to the existing decontamination with a proposal to integrate current activities into the EPMF
- the EPMF facilities have been surveyed, and enhanced decontamination facilities are required eg washdown cell etc
- it was identified that funding for EPMF could be available from operating unit funds for the disposal of operational wastes

Decontamination strategy:

- a detailed assessment has been carried out of cells across the site to determine which would be suitable for in-situ or ex-situ decontamination. It was found that less than 10% of cells would benefit from in-situ decontamination, and that previously the benefits of in situ decontamination had been overstated

Waste treatment

- the basic process is type sorting & segregation followed by decontamination followed by waste reduction

Several different options are being considered including decontamination then smelting of metal wastes.

2.10 EFFLUENT & ENCAPSULATION

3 CALDER HALL

4 UKAEA WINDSCALE

4.1 B13

4.1.1 Improvement Notices

The two Improvement Notices that were served on UKAEA and Nexia Solutions for operations in B13 had a scheduled date for compliance of 30th November; this was extended to 1st September 2006. Both Notices are now formally closed.

4.1.2 Operational Safety Case

The present safety case for B13 expires at the end of December 2006. UKAEA has discussed a way forward with both NII and its Nuclear Safety Committee. The present Care and Maintenance Safety Case has been modified to allow specific operations from the new OSC to be carried out, but specifically embargoed other operations. NII is satisfied that the same specific operations and embargoes can, via a new modification, be transferred to the new OSC and hence allow its adoption. Other operations, and removal of embargoes, would be controlled as necessary with further modifications. All modifications will be controlled by arrangements made under the

Nuclear Site Licence conditions and be subject to agreement where appropriate.

4.1.3 B13 Events.

Since the closing of the Improvement Notices a further similar event has occurred involving an empty transport flask. NII is considering the level of regulatory action using the HSE Enforcement Management Model.

4.2 Emergency Exercises

No Exercise has been observed this quarter.

4.3 Leases

Building B546.1 is occupied by the BNGSL demolition group, and previously NII had been informed that BNGSL would vacate this building, and that no further NII involvement would be necessary. This has recently changed. A different group from BNGSL now wishes to use this area for a similar purpose but an extension to the planning permission is needed. Meanwhile NII is reviewing the information need to support a new application for a Consent under Licence Condition 3. NII has suggested that the application is treated in two parts; one for the office accommodation; the second as a variation covering the operational areas. This would allow BNGSL better flexibility in using this area.

Buildings B12 and B14. The arrangement that permits Nexia Solutions to occupy and use parts of B12 and B14 expires at the end of June 2007. UKAEA has informed NII of two variations to the arrangement. These will be processed as soon as possible.

BNGSL has contacted the Windscale Site Inspector to discuss the possibility of building a new block for office accommodation and change rooms on the Windscale site. A meeting with the regulators has been arranged.

5 Drigg

5.1 LLWR at Drigg

NII's inspection programme aimed at ensuring that a stand-alone Site Licence Company can operate independently of the Sellafield organisation is underway continues and a readiness inspection before "shadow working" is planned. Shadow working should provide firm evidence that the SLC has adequate capability as a pre-condition to re-licensing.

HM NUCLEAR INSTALLATIONS INSPECTORATE

TABLE 1

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

DURING THE QUARTER

1 JULY TO 31 SEPTEMBER 2006

	BNGSL SELLAFIELD ¹	BNGSL CALDER HALL ²	BNGSL DRIGG	UKAEA WINDSCALE
NUMBER OF VISITS	72	2	5	7
INSPECTION DAYS ON SITE	231.5	0	7	15
ENFORCEMENT ACTIONS ³	1	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	0
LICENCE INSTRUMENTS	11	0	1	0

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 JULY TO 31 SEPTEMBER 2006

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			

TABLE 3**LICENCE INSTRUMENTS ISSUED DURING THE QUARTER****1 JULY TO 31 SEPTEMBER 2006**

Date	Type	Ref. No.	Description
BNGSL DRIGG Nuclear Site Licence no. 29A			
25/08/06	Agreement	500	Agreement to change PSR programme delivery date for the overarching site safety report for the LLWR at Drigg
BNGSL Sellafield (and Calder Works) – Nuclear Site Licence no. 31G			
9/06	Agreement	612	Agreement to overarching management of change assessment for management restructuring
28/09/06	Agreement	619	Agreement to change PSR programme delivery dates for the B299 LTPR Submission
9/06	Acknowledgement	610	Acknowledgement of receipt of documentation for decommissioning of waste retrieval project cp04 work
18/09/06	Acknowledgement	618	Acknowledgement of SMP modification proposal to address new fault sequences in PWR fuel assembly cavern
13/09/06	Agreement	615	Agreement to arrangements of radiological safety assessment of breakthrough of HAL into Evaporator A cooling water circuits
13/09/06	Acknowledgement	609	Acknowledgement of further document submission operation of the new west end crane
23/08/06	Acknowledgement	608	Acknowledgement of receipt of safety documentation for modification to an existing plant – PMP 1200/599
21/08/06	Acknowledgement	607	Acknowledgement of receipt of safety documentation for modification to an existing plant – PMP 1000/349P
11/08/06	Agreement	606	Agreement to commence implementation of PMP number 1000/345P
8/06	Acknowledgement	605	Acknowledgement of PMP/B33/133(06) – Magazine store commissioning, filling, operation and safety case implementation
28/07/06	Agreement	597	Agreement to commence modification to an existing plant: PMP HE00/153P
UKAEA WINDSCALE – Nuclear Site Licence no. 46B			