



**HM NUCLEAR INSTALLATIONS INSPECTORATE**  
**SELLAFIELD, CALDER HALL, UKAEA WINDSCALE AND LOW LEVEL WASTE**  
**REPOSITORY**

**WEST CUMBRIA SITES STAKEHOLDER GROUP**

**QUARTERLY REPORT FOR 1 OCTOBER TO 31 DECEMBER 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 Sellafield, Calder Hall, UKAEA Windscale and the Low Level Waste Repository.

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"

<b>1</b>	<b>INTRODUCTION</b>
<p>NII Inspectors made a total of 91 visits to the Sellafield, Calder Hall, Windscale and Low Level Waste Repository sites during the quarter. This involved a total of 348.5 days on site (see Table 1 for details). The more significant issues identified during these inspections are summarised below.</p>	
<b>2</b>	<b>SELLAFIELD LTD</b>
<b>2.1</b>	<b>GENERAL SITE MATTERS</b>
<b>2.1.1</b>	<b>Review Close-out of NII 1999 Team Inspection of Control &amp; Supervision at Sellafield</b>
<p>In 1999, HSE (NII) undertook a 'team inspection (TI) of the control and supervision of operations at BNFL's Sellafield site' (known as the 1999 NII Team Inspection). 28 Recommendations ensued, which were formally closed out by April 2003. During 2007, NII and Sellafield Ltd (SL) considered that it was important to evaluate the outcomes of what was a considerable amount of work for both the site and NII, 5 years on from formal close-out. NII held discussions with SL and agreed a programme of work, to establish the post close out status of the Recommendations. It was acknowledged that implementation of the recommendations had resulted in considerable improvements to the site safety and operational arrangements. The intention was to determine whether changes to the Sellafield arrangements, in response to the 1999 Team Inspection Recommendations were embedded into normal Sellafield operations. A programme of work for SL was agreed, which included reviewing the outcomes of each of the recommendations. This initial work was delivered to time and is being assessed by NII, after which, further close-out discussions will be held and any future work considered.</p>	
<b>2.1.2</b>	<b>Sellafield Corporate Intervention Strategy (SCIS) Project</b>
<p>NII has conducted a review of the SCIS project to date. It was considered that the initiative was very worthwhile in that it has established the degree of focus on health and safety at senior level within the Site License Company. NII is relatively satisfied that there has been buy in at the highest levels at Sellafield however, to take the work forward to the next phase, looking at the links between senior and operational management levels, it was considered that NII itself needs to clarify the lines of accountability and governance for the regulatory interventions. To this end, the option of a Corporate Inspector is being considered for Division 2, whose role it will be to further develop and take forward this regulatory work stream.</p> <p>A pilot set of Safety Performance Indicators (SPI's) has been agreed with Sellafield Ltd. The licensee is currently working towards provision of the relevant data, which will be trialled over the coming months. NII interventions will continue in this area to ensure a suitable and sufficient range of nuclear safety performance indicators are developed for the Sellafield site, which become embedded in the licensee's organisation such that they are used effectively by Sellafield Ltd management to measure and monitor nuclear safety performance and which become integrated into their safety management approach.</p>	

<b>2.1.3</b>	<b>Emergency Exercise</b>
<p>Level 1 Emergency Exercise “Goshawk” was carried out on the 21<sup>st</sup> November 2007 to demonstrate Sellafield Limited’s (SL) response, under the Emergency Plan, to an incident associated with the Fuel Handling Plant. The scenario was realistic and challenging and it was considered by NII to be a well prepared test of Sellafield Ltd’s Emergency Response. It was judged to be an acceptable demonstration of the sites emergency preparedness, with particularly strong performances in the SECC and ICC. However, NII did raise concerns in how scenario changes are transmitted and we have asked Sellafield Limited to consider how to improve the way that scenario changes are managed and communicated. NII also indicated the need to review the layout of the ACP to improve its operability and effectiveness and we noted the absence of command and control competencies at the ACP.</p>	
<b>2.1.4</b>	<b>Asset Care</b>
<p>In the past NII has raised concerns over the management of ageing assets across the site. The Sellafield Ltd Production Operations Directorate has undertaken a review of the Asset Management arrangements and has developed an Asset Management Strategy aimed at bringing about improvement and in particular implementing, over the coming years an asset management system which aligns to national and international standards. NII will be developing the topic of asset care as a major intervention over the next 12 to 18 months.</p>	
<b>2.1.5</b>	<b>PCM</b>
<p>ND has had a very positive response from Sellafield over regulatory concerns regarding the progress that was being made to improve the safety of PCM on the Sellafield Site. Key documentation provided by the Sellafield Solid Waste Group further builds and expands on the principles embodied within the Outline PCM Strategy (this Strategy was previously agreed with the NII by Licence Instrument No 19 in 2003). ND has agreed that this key documentation effectively forms part of the adequate Arrangements for PCM Storage Operations under Licence Condition 4. By consolidating progress against the drivers for relevant parts of ILW Specification No 324 and expanding proposals and concepts of Good Practice to meet part b) of ILW Specification No 326, the Site will be well placed to satisfy extant Legal Requirements. The PCM Operations Strategy documentation is regarded as firmly constituting Good Practice; it is a major safety ‘watershed’ on the Sellafield site and reflects the hard work carried out by the Sellafield Team over the last 7 years.</p>	
<b>2.2</b>	<b>INCIDENTS</b>
<b>2.2.1</b>	<b>HALES Overdue Plant Maintenance Schedule items</b>
<p>On 28 November 2007 NII was informed that a significant number of activities on the Plant Maintenance Schedule (PMS) for HALES were overdue. Some had been overdue over an extended time period.</p> <p>NII asked the licensee to justify urgently the continued safe operation of HALES and especially the continued safe operation of Evaporator C. A satisfactory response was received. As a further precaution NII has indicated that it will not permission any revised safety justifications for enhanced evaporator application until both licensee and NII investigations are adequately completed and improvement plans are put in</p>	

place. No equipment failures have been identified during subsequent completion of maintenance.

Revised working arrangements were introduced which restored compliance with the PMS by mid December. Nevertheless the cause of the event requires thorough investigation to prevent a recurrence and NII has initiated a formal investigation in accordance with HSE's Enforcement Management Model.

For information, the requirement for a PMS forms part of Nuclear Site Licence Condition 28 (Examination, Inspection, Maintenance and Testing (EIM&T)). The purpose of LC28 is to ensure that all plant that may affect safety, as identified in the safety case, receives regular and systematic examination, inspection, maintenance and testing by and under the control of suitably qualified and experienced persons and in accordance with arrangements made and implemented by the site. The purpose of this EIM&T is to ensure the plant remains capable of performing the function required by the safety case assumptions, with the required level of reliability. LC28(4) requires the preparation of a PMS; LC28(6)(c) requires that every EIM&T of a plant or any part thereof is carried out within the intervals specified in the PMS.

<b>2.3</b>	<b>MAGNOX REPROCESSING OPERATIONS</b>
------------	---------------------------------------

<b>2.3.1</b>	<b>General</b>
--------------	----------------

NII carried inspections in Fuel Handling Plant and Reprocessing at the end of the quarter to understand the reality of asset management out on plant. We found that improvement of the asset management process was in its early stages of development. However, we were pleased to see that procedures were developing and that good progress was being made to identify the key safety and production issues. We saw clear evidence in asset improvements made to increase plant reliability but we noted that in general there appeared to only be sufficient resource for immediate safety/environmental improvements. Overall, we concluded that there remains a significant challenge in developing, implementing and embedding an asset management system which meets relevant national/international standards.

We encouraged Sellafield Ltd to continue the asset management and care programme, and in our view, adequate funds and resource committed now are a worthwhile investment when considered in the context of the safety, environmental and cost implications of failing to complete the Magnox Operating Programme.

<b>2.3.2</b>	<b>Fuel Handling Plant</b>
--------------	----------------------------

The pond water activity level is currently steady and Sellafield Ltd is continuing to carry out work in an effort to reduce the activity level. NII is continuing to meet with Sellafield Ltd to discuss the technical issues and to monitor progress in this important area.

Following a site inspection NII raised concerns regarding the management of waste in some plant areas. A letter was sent at the end of the quarter requiring Sellafield Ltd to put forward a programme for effectively managing the waste.

<b>2.3.3</b>	<b>Magnox Reprocessing Operations</b>
--------------	---------------------------------------

NII continues to meet regularly with other principal stakeholders to discuss the key issues surrounding the reprocessing of fuel in accordance with the Magnox Operating Programme.

The reprocessing plant major outage was originally planned for January 2008 but Sellafield Ltd has put forward a case acceptable to NII to defer the outage until September 2008. Following the outage Sellafield Ltd will require NII Consent to restart the reprocessing plant.

#### **2.3.4 | Magnox Product Finishing and Storage Facility (Magnox PF&S)**

During December 2007 PF&S experienced a number of delays to operation. The first of these was the discovery of inconsistencies between actual safety mechanism responses and that expected from the safety case for part of the product finishing process. Consequently, Sellafield Ltd shutdown product finishing operations while the plant was modified to meet the requirements of the safety case. NII is monitoring Sellafield Ltd's progress in this area. Following this an unrelated blockage was discovered in part of the product finishing process that will require an extended period of shutdown to resolve. PF&S is not expected to return to operation until late February 2008 at the earliest.

The permanent neutron monitoring system, which will improve defence in depth measures against inadvertent accumulation of fissile material, has now been installed and is expected to undergo commissioning and benchmarking tests against the interim monitoring arrangements to establish trip limits during the next quarter. When these tests have been successfully completed the system will be connected to the plant and run in parallel with the interim arrangements. Sellafield Ltd intends to meet with NII towards the end of the next quarter to discuss the findings of their commissioning and benchmarking tests.

NII's investigation of the contamination event in the Central Waste Handling Facility continues. The final dose estimates for the two contractors exposed to ionising radiation have been confirmed to be less than the statutory limit.

### **2.4 | THORP OPERATIONS**

#### **2.4.1 | THORP Restart**

At the end of the previous quarter it was reported the dissolved fuel produced from shearing 33 te AGR suspect fuel, and diluted recovered liquor from the leak, had been shared between the three HEP/SEP buffer tanks to produce a blend suitable for reprocessing. The reprocessing of the dissolved fuel and recovered liquor was started and completed in November.

In early December SL applied to process liquors that would result from the shearing and reprocessing of 300 te fuel planned by SL, utilising evaporator C in HALES. The application is being processed, however recent problems associated with overdue maintenance on safety critical plant within HALES are likely to cause some delay.

#### **2.4.2 | Multi-Element Bottle Export Facility (MEBXF)**

The application by SL to commence the active commissioning of the multi-element

bottle (MEB) export facility was processed during the quarter. A Licence Instrument (LI) was issued in October that permitted the use of up to 50 MEBs to actively commission the MEBXF and active commissioning began in December. At the end of December 2 MEBs had been decontaminated and transferred to the MEBXF and were awaiting export to the MEB interim store.

**2.4.3 Replacement of Medium Active Salt Free Evaporator**

During the previous quarter NII questioned the low category allocated to the SL proposals for the replacement of the medium active salt free evaporator, which is suffering from corrosion. The proposals involve the use of a very large crane in the vicinity of safety critical plant to lift the new evaporator and associated equipment into position. SL continued to argue that the categorisation was appropriate, and so NII issued a Specification in October requiring SL to seek the advice of the Nuclear Safety Committee (NSC) on the proposals. The proposals, which were given a higher category and improved, were cleared by the NSC in November. SL applied for agreement to carry out the proposals in early December and a LI was subsequently issued giving this agreement. 7 of the 12 major lifts had been completed at the end of the year. The site categorisation process for plant modifications is being reviewed by SL.

**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. Matters related to evaporators and HASTs are covered in more detail below. As regards staffing levels, NII has continued to press for improvements through regular discussions with Sellafield Limited senior management, and NII expects to see Licensee improvement proposals later in 2008. These discussions have included the development of an improved governance framework, organisational structure, and oversight arrangements.

**2.5.2 Highly Active Liquor evaporative capacity**

There are three evaporators within HALES (referred to as Evaporators A, B and C), which 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 December 2007) is:

- Evaporator A: Evaporator A suffered a failed coil on 20 June 2007. The evaporator is currently shutdown and has undergone significant engineering modifications with a view to providing additional operational capacity. A new operational safety case for this evaporator has been received by NII and is currently being assessed.
- Evaporator B: This was shut down in December 2004 following failure of a heating/cooling coil. 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. Good progress continues to be made. NII has received a revised safety case

for Evaporator B and will be assessing it early 2008.

- Evaporator C: This continues to operate on Magnox liquors, WVP effluents and THORP liquors from the THORP Feed Clarification Cell (FCC) event plus liquors from a small amount of shearing used to dilute the FCC liquors. NII has received and is assessing a plant modification proposal from SL that would allow Evaporator C to process liquors from a further 300te of reprocessing.

NII continues to engage Sellafield Limited on the provision of new evaporative capacity. Groundworks for Evaporator D are well advanced but the expected start to work on the base slab at the beginning of 2008 has been delayed. The pre-construction safety case for Evaporator D is now expected around July 2008. NII is working closely with Sellafield Limited, 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. Sellafield Limited is also considering the need for further evaporative capacity (Evaporator E).

Further permissioning of activities in this area depends on the outcome of the HALES overdue PMS investigations covered elsewhere in this report.

### **2.5.3 HAL Stocks**

The Specification provides a limit on the amount of HAL that can be stored at any time and promotes HAL stocks reduction. Following the last biennial review of HAL stocks, NII made a public commitment to revise Specification 343 to consolidate the gains arising from the unplanned THORP shutdown. A revised Specification (No 679), replacing Specification 343, was issued on 29<sup>th</sup> October 2007.

This new Specification locks-in the gains arising from the unplanned THORP shutdown, which facilitated a faster reduction of HAL stocks than was predicted when Specification 343 was issued.

NII has kept a secondary limit for Oxide-derived HAL stocks in the revised Specification as Oxide-derived HAL is more hazardous than Magnox HAL. The Oxide Control Curve from Specification 343 has been revised, as under certain circumstances it does not always promote optimal operational decisions that are in the best interests of safety. The new limit for Oxide-derived liquors used in the revised Specification 679 is evaluated in terms of the mass of Uranium present in the original front-end Oxide fuel from which the stored liquid HAL was derived. Like the total volume limit, the Oxide limit locks-in gains arising from the unplanned THORP shutdown.

Sellafield Limited 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 Sellafield Limited continues to meet the HAL Stocks Specification.

### **2.5.4 HLWP IRRs inspection**

The Site Inspector and an assessment specialist carried out an inspection of HLWP for compliance with Ionising Radiations Regulations 1999. Overall the evidence provided during our inspection indicated that doses incurred within HLWP are as low

as reasonably practicable (ALARP). The inspection sampled two recent work areas that we understood to have required good ALARP measures, namely the modifications to Evaporator B and the glass frit feed issues on WVP: these projects indicated that significant efforts have been made to restrict individual and group exposures. NII has communicated our findings and issues to SL; a response has been received and is being considered.

#### **2.5.5 Highly Active Storage Tanks (HAST)**

Previous WCSSG reports have highlighted 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. Recent HAST cooling coil failure rates and (specifically) the location of recent failed coils has led to uncertainties over the ability of the newer HASTs to continue to service the needs of the HAL stocks strategy. If the HASTs start to deteriorate more quickly, then the ability of HALEs to receive raffinates will be prejudiced (with knock-on consequences for reprocessing) - the rate of failures of cooling coil will determine the volumetric capacity of HASTs to store HAL and has the potential to constrain Raffinate receipt.

Sellafield Limited's present contingency plans include:

1. A project to consider dosing the cooling water circuits with nitrates as a way of stopping, or at least reducing the rate of, corrosion failures. NII has a number of outstanding concerns connected with nitrate dosing some of which have been addressed by Sellafield Limited's proposal to conduct a series of nitrate dosing trials and
2. The construction and operation of replacement HASTs - NII believes that the conservative decision in response to these problems would be to build smaller, inherently safer replacement HASTs.

#### **2.5.6 Waste Vitrification Plant**

At the start of the quarter WVP Line 1 and Line 2 were undergoing planned outages which began in July and August respectively and lasted until the end of 2007, when both returned to HAL feed. WVP Line 3 operated successfully through the quarter. There have been no significant effects on HAL stocks reduction. Reliable operation of the vitrification lines is an essential component of the drive to reduce HAL stocks, and NII continues to engage Sellafield Limited on issues associated with plant reliability. However we note that Sellafield Limited is investing in improvements to the throughput and reliability of the vitrification process via its links with COGEMA.

#### **2.5.7 WVP Radwaste Inspection**

NII has reported previously on an inspection of radwaste management within WVP, specifically the medium active (MA) and highly active (HA) waste held in the breakdown (BD) cells of WVP Lines 1, 2 and 3. This waste comprises failed components removed from the WVP process cells. Whilst accepting their operational constraints, NII concluded that Sellafield Limited should increase the focus applied to radwaste management to minimise so far as is reasonably practicable the amount of radwaste accumulated in the cells, and then should control the quantity of waste to a level consistent with operational requirements. NII also concluded that Sellafield

Limited does not properly segregate HA radwaste arisings, and expressed concern as to the adequacy of the WVP safety case for the accumulation of HA radwaste in the breakdown cells.

Sellafield Limited has responded positively to our concerns and accepts the findings of the inspections. Good progress was made during the quarter with the development of an action plan to address NII's specific concerns. NII will continue to keep the WCSSG informed of progress regarding radwaste management in the breakdown cells.

#### **2.5.8 Residue Export Facility (REF)**

REF is progressing reasonably well though it is still 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 during 2008. Regulatory issues include the necessary interfaces with other facilities at Sellafield to ensure the safe and timely overseas export 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 Sellafield Limited to learn from a number of minor conventional safety incidents and to improve safety awareness. NII expects to conduct an inspection in March 2008 as part of the process for assessing Sellafield Limited's readiness to start active commissioning of REF.

### **2.6 MOX OPERATIONS**

#### **2.6.1 Sellafield MOX Plant (SMP) Commissioning and Operation**

The management changes previously reported are now established and a strategic Plant Improvement Programme has been developed by Sellafield Ltd, which is aimed at improving plant throughput.

A draft Overarching Strategy Paper has been written to detail the arrangements for permissioning the next period of operations that scopes an extension of the active commissioning for a further two campaigns of fuel production. This will allow for modifications to the plant and the safety case STPR (Short Term Periodic Review) to be completed. Current estimates indicate that this will take the operation of the facility through to 2009/2010 when the issue of Consent to Operate will be reviewed in the light of the safety performance of the facility and progress made in the interim.

#### **2.6.2 Sellafield Product And Residue Store (SPRS)**

The main shell of the building has been completed and work continues on the internal installation of plant and equipment. Integrated works testing of the mechanical handling plant is nearing completion and a simulator is to be built to aid operator training and developing modifications.

Permissioning of the installation and commissioning phases of the project will be subject to NII assessment of the relevant safety submissions. An Overarching Strategy Paper (OSP) continues to be being developed to define appropriate milestones and deliverables for these stages of the project, which will clearly identify

when NII wishes to assess relevant safety documentation and monitor and review project progress. The formal issue of the OSP is expected during March 2008.

Sellafield Limited continues to pursue with the main contractor, Carillion, the novation of the subcontracts for SPRS to Sellafield control. This is intended to ensure progress against the project programme is maintained. NII has been informed of these changes and is content that appropriate measures have been taken to maintain the required levels of knowledge and experience during and after the changes come into effect, such that safety will not be compromised.

<b>2.7</b>	<b>WASTE TREATMENT &amp; DECOMMISSIONING</b>
------------	--

In early December 2008 WTC began a slow, controlled Restart following a shutdown period of some 14 months brought about by the major injury accident. The Restart is entitled Phase 4 Active Commissioning Stages 1-3 Operability & Maintainability Trials, and is programmed to take place over a period of 15-21 months. If Sellafield Ltd achieves all the objectives of the trials, it then plans to apply for consent to commence routine operations of WTC.

During Stages 1-3 of the trials Sellafield Ltd is intending to develop further plant improvements, to reduce the plant's dependency on operational controls, and has provided written details of its improvement programme. NII has written to Sellafield Ltd noting some actions under review which are essential to the long term viability of WTC1A, and its role in the strategy to satisfy the NII Specification (LI 326) for Sellafield Ltd regarding converting PCM stocks to a safe passive form. NII has stated that as well as monitoring progress with the trials and formally examining Sellafield Ltd's safety case in support of Stages 2 & 3, the Inspectorate's considerations will include progress with these actions.

<b>2.8</b>	<b>LEGACY PONDS &amp; SILOS</b>
------------	---------------------------------

In the last WCSSG report NII highlighted the need for further improvements in day to day operational nuclear safety across LP&S. Since then we have had a number of very open and constructive meetings with SL in which they have acknowledged our concerns and reiterated their desire to further raise operational nuclear safety performance. We appear to share a broad understanding of the issues and of the way forward.

To help facilitate some early improvements SL took the significant decision, supported by NII, to suspend actions leading to permissioning requests to NII until sufficient improvements have been made. This remains the current position. NII permissioning of plant modifications is critical to the early retrieval and passive storage of sludge and other material from these fragile plants. Hence, we have agreed with SL the basis of a process to resume permissioning at the earliest possible date commensurate with a demonstrable improvement in operational nuclear safety performance across LP&S.

We are continuing to monitor the programme of early improvements SL is putting in place, and our inspections of these to date are providing us with some confidence in their approach. However, we recognise that creating sustainable improvement is a long term process and therefore of critical importance is the development and implementation of their long term improvement programme. We will continue to challenge and monitor the development and implementation of SL's improvement

programme to secure worthwhile improvements in operational nuclear safety across LP&S.

**2.9 SITE & PLANT SERVICES, INCLUDING RESEARCH & DEVELOPMENT**

**2.9.1 R&DD (Analytical Services)**

Sellafield Limited’s short term strategy in this area will be based on the recommendations from the COSR and their impact on the use of the Analytical Services Building. A facilities plan incorporating medium and long-term strategies is close to being developed by Sellafield Ltd, which includes consideration of the following:

- The type of analysis work required and potential reduction of the operational area
- The scope and funding of decommissioning
- The removal of risk during refurbishment of redundant laboratories including the former Nexia and Euratom labs
- The removal of inventory

NII will continue to monitor developments in this area to ensure steps are taken to provide appropriate facilities that will support operational demands.

**2.9.2 Decontamination Facilities**

NII has been proactive in working with Sellafield Ltd to develop short, medium, and long term strategies for decontamination on site. The short term strategy is linked to the improvements made to the existing Decontamination Centre following the recommendations from the recent review of the safety case. In the medium term, the Effluent Plant Maintenance Facility (EPMF) has been identified as a possible replacement for the existing Decontamination Centre. A strategy paper has been prepared, and an assessment of the physical requirements for the EPMF to function as a decontamination centre has been carried out. Sellafield Limited's long term decontamination strategy is linked to the overall radioactive waste management strategy for the site. NII will continue to monitor Sellafield Ltd’s progress in this area.

**2.10 EFFLUENT & ENCAPSULATION**

**2.10.1 Floc Retrieval Plant**

The operational problems arising from the discovery of contamination in an inactive water supply to the floc pump during the previous quarter have been resolved by implementing a revised operational strategy for the floc pump. This has allowed floc transfers recommence during the latter part of this quarter.

**2.10.2 ILW**

Encapsulated Product Stores

In response to Sellafield Ltd’s identification of drums containing areas of localised swelling and the results of their investigation, NII has written a joint letter with the Environment Agency advising Sellafield Ltd that the Inspectorate and the Environment Agency jointly consider that until the uranium/grout interaction is better understood Sellafield Limited should adopt a precautionary approach with respect to conditioning

and disposal of wastes containing uranium metal. Consequently, Sellafield Limited must provide the regulators with confidence that it continues to safely manage the packages within encapsulation stores and can demonstrate that it is able to manage future arisings of metallic uranium wastes. A meeting to discuss Sellafield Ltd's response to this letter is expected to take place during the next quarter.

**3 CALDER HALL**

To implement changes in the Magnox Operating Plan (MOP), which is the licensee's plan for the management of the end of life of the Magnox reactor programme, delays to the defuelling programmes for some of the Magnox reactors has been proposed. The biggest impact will be at Calder Hall where the delay will be about 5 years if the Government sanctions reprocessing beyond 2012. This will lead to a reduction in work scope at Calder Hall hence; Sellafield intends to reduce the number of Calder Hall staff until defuelling is required by the MOP. Under LC36, Calder Hall has produced a justification for the change that considers all the relevant issues including the current safety case, maintaining the defuelling capability and continued surveillance of the plant. NII is still considering the submission. As Calder Hall is supported by the Sellafield site, it is unlikely that the proposed changes will set a precedent for other Magnox reactors.

Work continues on clearing away the remnants of the demolished cooling towers.

**4 UKAEA WINDSCALE**

**4.1 UKAEA Windscale LC24 Arrangements Inspection**

The series of inspections on the UKAEA Windscale arrangements for compliance with LC24 (Operating Instructions) initially reported in the previous period report has continued with inspections at the WAGR and B13. To date no fundamental issues/concerns have been identified. Further updates on the findings of this series of inspections will be included in future reports once the series of inspections is completed in early 2008.

**4.2 Windscale Transition Project Discussions**

Further discussions have been held with the UKAEA/Sellafield Ltd project team in relation to the work being undertaken to facilitate the proposed transition of licensee for the Windscale site from UKAEA to Sellafield Ltd which is planned for April 2008. UKAEA has now embarked on a period of shadow working of the proposed post April 2008 Windscale organisation in parallel to the existing UKAEA Windscale licensee organisation. This trial period is being utilised to assess the acceptability/capability of the proposed licensee organisation prior to the relicensing of the Windscale site next year. UKAEA/Sellafield Ltd has reported that the shadow working arrangements were generally working well. The "readiness" of the new organisation will be inspected by NII during the January – March 2008 period.

**4.3 Piles Decommissioning Project**

The monthly Project meetings held to update the regulators of the position on the various ongoing decommissioning projects have been attended. Updates were provided by UKAEA on the civil & electrical refurbishment work, the West Air Duct work, Pile cap clearance work etc. A tour of the Pile 1 facility was undertaken to

observe the progress on the various Piles Decommissioning Preparatory Projects work. No major issues were raised from the facility visit. The “general housekeeping” improvements were observed to have made a significant improvement all around the Pile 1 facility. The 50th Anniversary of the Pile 1 Fire occurred during the report period.

#### **4.4 WAGR/Western Area Projects**

Various meetings have been held on the WAGR/Western Area decommissioning project work. Topics discussed included the residual reactor vessel removal work and the asbestos waste compaction proposals in WAGR and the residual decommissioning work required in B52. Discussions have also been held with UKAEA on the B14 decommissioning programme, as NII is keen to see the decommissioning of the cells within B14 being progressed. The proposed extension for the B37 Safety Case was also discussed. The calibration cell operations with B37 will have ceased however there is no available export destination for the sources within B37 until B13 “opens” up.

#### **4.5 B13 Project Meetings**

Various meetings have been held, and visits undertaken, relating to the extensive programme of improvement projects within the B13 facility. The safety documentation for some of the initial project work has now been considered by NII and some of this work has commenced. The successful completion of the overall B13 Integrated Safety Improvement Programme (ISIP) during 2008 will allow the constraints on operations within B13 to be lifted. A further programme of work is being drawn up to support plans for extended usage of the B13 facility.

#### **4.6 Miscellaneous Matters**

During the report period a number of miscellaneous matters were progressed including -

**i) UKAEA Safety Improvement Programme (SIP) Update** - A meeting was held at UKAEA’s request to discuss the latest position on the UKAEA Windscale progress on the UKAEA SIP Initiative instigated by the UKAEA CEO.

**ii) Quarterly Meeting with Head of Site** – A general review of matters across the site was undertaken with the Head of Site.

**iii) Safety Representatives Committee Meeting** - The latest Windscale Site Safety Representatives (SRs) Committee meeting was attended. Topics discussed included impact of funding constraints on future Windscale operations and some general safety matters including aspects of the Windscale Site Personal Protective Equipment (PPE) policies.

**iv) Safety & Environment Advisory Committee (SEAC) Meeting** - An opportunity was taken to take up an open invitation to attend the daily Windscale SEAC meeting held each day at lunchtime. The objective of this meeting had been stated to be an opportunity for “senior staff” to review matters that had arisen in the past 24 hrs and to be made aware of any issues for the forthcoming 24 hrs.

**v) Emergency Plan Revision Discussions** - A meeting was held to discuss the changes to the Windscale Emergency Arrangements that will need to be completed as part of the Windscale Transition/Site relicensing.

**vi) Licence Condition 3 Consents** – During the period NII has issued consents under the Windscale Licence Condition 3 arrangements relating to the lease of part of B22 and B34 to Nexia Solutions and the agreement for access to and usage of parts of Building B14 to Nexia Solutions

**vii) Nuclear Reactors (Environmental Impact Assessment for Decommissioning) Regulations 1999 (EIADR99)** – During the period the Health and Safety Executive (HSE) made a determination under EIADR99 regulation 13(1) that an Environmental Impact Assessment was not required under the EIADR regulations for the change to the Windscale Piles Decommissioning Project. UKAEA had applied to HSE for a determination relating to the currently planned acceleration of the original Windscale Piles Decommissioning Project programme.

<b>5</b>	<b>Low Level Waste Repository</b>
----------	-----------------------------------

LLW Repository Limited is continuing to establish itself in the role as Site Licence Company for the Low Level Waste Repository (LLWR). Nothing of significance to report during the period.

## HM NUCLEAR INSTALLATIONS INSPECTORATE

**TABLE 1**

**QUARTERLY RETURNS FOR  
SELLAFIELD, CALDER HALL, UKAEA WINDSCALE AND THE LOW LEVEL  
WASTE REPOSITORY**

**DURING THE QUARTER**

**1 OCTOBER TO 31 DECEMBER 2007**

	SELLAFIELD LTD <sup>1</sup>	CALDER HALL <sup>2</sup>	Low Level Waste Repository	UKAEA WINDSCALE
NUMBER OF VISITS	79	5	1	6
INSPECTION DAYS ON SITE	330.5	5	1	11
ENFORCEMENT ACTIONS <sup>3</sup>	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	2	0	0	2
LICENCE INSTRUMENTS	5	0	0	1

<sup>1</sup> The figures shown for Sellafield Ltd are those for Sellafield chemical plants, excluding those scoped by <sup>2</sup>.

<sup>2</sup> The figures shown for Calder Hall are those for the plants that formed the Calder Hall nuclear power plant.

<sup>3</sup> 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 OCTOBER TO 31 DECEMBER 2007**

Date	Type	Ref. No.	Description
<b>Low Level Waste Repository Nuclear Site Licence no. 29A</b>			
<b>Sellafield Ltd (and Calder Works) – Nuclear Site Licence no. 31G</b>			
19/12/07	<b>Approval</b>	684	APPROVAL OF PARTS OF THE ARRANGEMENTS FOR THE PERIODIC AND SYSTEMATIC REVIEW AND REASSESSMENT OF SAFETY CASES
10/07	<b>Approval</b>	630	Sellafield Emergency Arrangements Emergency Plan, Issue 12, 08/2007
<b>UKAEA Windscale – Nuclear Site Licence no. 46B</b>			
02.11.07	Consent	528	Licence Condition 3 Consent relating to lease of part of B22 and B34 to Nexia Solutions
04.12.07	Consent	532	Licence Condition 3 Consent relating to the agreement for access to and usage of Parts of Building B14 to Nexia Solutions

**TABLE 3**

**LICENCE INSTRUMENTS ISSUED DURING THE QUARTER**

**1 OCTOBER TO 31 DECEMBER 2007**

Date	Type	Ref. No.	Description
<b>Low Level Waste Repository Nuclear Site Licence no. 29A</b>			
<b>Sellafield Ltd (and Calder Works) – Nuclear Site Licence no. 31G</b>			
21/12/07	<b>Acknowledgement</b>	686	ACKNOWLEDGEMENT AND NOTIFICATION OF INTENTION TO EXAMINE: PMP 07/SMP/1292/P – ‘Introduction of Safety case to allow Inactive Safety Commissioning, Active Commissioning and Operation of Phase 1 storage of residue and excess recycle material’.
21/12/07	<b>Acknowledgement</b>	685	ACKNOWLEDGEMENT OF RECEIPT OF AMENDMENT TO SAFETY DOCUMENTATION – ADDENDUM TO PMP 06/SMP/1282/P – THE PROPOSAL IS TO IMPLEMENT ADDITIONAL SAFETY MEMORANDUM CULT NOS. 11989 IN SUPPORT OF THE CAMPAIGN CHANGE FOR THE MANUFACTURE OF 16 X 16 GROHNDE FUEL
07/12/07	<b>Agreement</b>	683	AGREEMENT TO COMMENCE CRANE LIFTING OPERATIONS ASSOCIATED WITH INSTALLATION OF THE THORP MEDIUM ACTIVE SALT FREE EVAPORATOR (MASFE) REPLACEMENT VESSELS AND OTHER EQUIPMENT
	<b>Agreement</b>	682	AGREEMENT TO RESTART WASTE TREATMENT COMPLEX ACTIVE COMMISSIONING PHASE FOUR STAGE 1 OPERABILITY AND MAINTAINABILITY TRIALS
26/10/07	<b>Agreement</b>	668	AGREEMENT OF RECEIPT OF SAFETY DOCUMENTATION FOR MODIFICATION TO AN EXISTING PLANT
<b>UKAEA WINDSCALE – Nuclear Site Licence no. 46B</b>			

26.11.07	Acknowledgement	533	Acknowledgement of the Windscale Site Wide Periodic Safety Review Top Tier Summary Report
----------	-----------------	-----	---