



**Office for Nuclear Regulation (ONR)
Quarterly Site Report for
Sellafield, Calder Hall and Windscale West Cumbria
Sites Stakeholder Group (WCSSG)**

Report for period 01 July 2014 – 30 September 2014

Foreword

This report is issued as part of ONR's commitment to make information about inspection and regulatory activities relating to the above site available to the public. Reports are distributed quarterly to members for the West Cumbria Sites Stakeholder Group and are also available on the ONR website (<http://www.onr.org.uk/llc/>).

Site inspectors from ONR usually attend West Cumbria Site Stakeholder Group Scrutiny Meetings and will respond to any questions raised there. Any person wishing to inquire about matters covered by this report should contact: ONREnquiries@onr.gsi.gov.uk

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1 INSPECTIONS

1.1 DATES OF INSPECTION

ONR site inspectors made inspections on the following dates during this quarter.

Plutonium	Thorp	Decommissioning	Magnox	Infrastructure and Waste and Effluent, Disposition Directorate	Corporate	Project Delivery
17-19 June	3- 5 June	9 - 10 July	8 - 9 July	3 July	8 July	31 July
15 –17 July	8 –10 July	5 August	21 – 24 July	8 – 9 July	17 July	24 September
22 - 26 September	30 - 3 July	6 - 7 August		12 –14 August	29 – 20 September	
	27 August	9-11 September		26 – 27 August		
	17-19 September			24 September		
				29 – 30 September		

2 ROUTINE MATTERS

2.2 Inspections

Inspections are undertaken as part of the process for monitoring compliance with:

- the conditions attached by ONR to nuclear site licences granted under the Nuclear Installations Act 1965 (NIA65) (as amended);
- the Energy Act 2013
- the Health and Safety at Work (etc) Act 1974 (HSWA74); and
- Regulations made under HSWA74, for example the Ionising Radiations Regulations 1999 (IRR99) and the Management of Health and Safety at Work Regulations 1999 (MHSWR99).

The inspections entail monitoring the licensee’s actions on the site in relation to incidents, operations, maintenance, projects, modifications, safety case changes and any other matters that may affect safety. The licensee (Sellafield Limited, SL) is required to make and implement adequate arrangements under the conditions attached to the licence in order to ensure legal compliance. Inspections seek to judge both the adequacy of these arrangements and their implementation.

In general, ONR judged the arrangements made and implemented by the site in response to safety requirements to be adequate in the areas inspected. However, where improvements were considered necessary, the licensee made satisfactory commitments to address the issues, and our inspectors will monitor progress during future visits. Where necessary, ONR will take formal regulatory enforcement action to ensure that appropriate remedial measures are implemented to reasonably practicable timescales.

In this period, routine inspections at Sellafield covered the following:

Sellafield Compliance Intelligence and Enforcement (SCIE) sub programme.

The SCIE sub-programme's objective is to provide evidence-based confidence that nuclear safety compliance is being effectively achieved by Sellafield Limited across the site.

Plutonium Management Facilities (PMF)

Discussions were held with the Plan 1 operational units to inform the production of next year's intervention plan. These discussions centred on a number of significant risk reduction projects currently in process, particularly in the PMF North facilities where projects worth approximately a hundred million pounds are scheduled to improve the ventilation of one building, replace the obsolete electrical distribution system and undertake other risk reduction modifications to the facility. This information will be considered along with operational experience arising from previous inspections and incident data with the aim of producing an integrated intervention plan for the Plan 1 facilities.

Thorp

During this reporting period, THORP experienced an automatic shutdown of part of the plant due to process feed being incorrectly conditioned. There was no significant safety impact from the event and SL has confirmed that it will carry out an internal investigation to identify the causes and prevent any reoccurrence. ONR will review the results of SL's investigation and determine what further action, if any, is required.

In addition, ONR continued to deliver its planned compliance inspections in line with our Sellafield Strategy and the THORP inspection plan. A systems inspection of the THORP electrical distribution judged that the requirements of the safety case had been adequately implemented, but noted several areas where ONR would require further information or justification regarding the safety case.

Magnox

ONR carried out two system-based inspections in the Magnox Reprocessing plant – 'Solvents and Reagents' and 'Steam'. Based on the evidence sampled, ONR judges that the systems meet the requirements of the safety case and implementation of SL's compliance arrangements is adequate. No significant areas for improvement were identified.

Periodic Safety Reviews

ONR and SL have engaged over the past six months seeking improvements to Periodic Safety Reviews (PSRs) at Sellafield with the aim of developing a PSR process that is more effective and adds greater value to nuclear safety. SL has been implementing these improvements to its Long Term Periodic Review (LTPR) process and is having success in localised areas.

ONR has changed its approach to assessing PSRs at Sellafield and now will engage on three levels:

1. ONR will oversee the delivery of the PSR programme and implementation of associated safety improvements. ONR has enhanced its tracking arrangements of safety submissions and attends interface meetings with operating units on implementation of SL's LTPRs.
2. ONR will conduct targeted inspections on selected facilities of the implementation of safety significant improvements concentrating on fault sequences with a high potential public or worker dose
3. ONR will undertake detailed reviews of selected LTPRs to assess adequacy of implementation of SL's arrangements.

Two targeted inspections were carried out during this period. One of these inspections led to a regulatory issue whereby SL needs to ensure that>NNL (the operators of the Active Handling Plant) implement a revised safety case for the plant. ONR also took part in a successful workshop to help roll out SL's new LTPR arrangements.

Decommissioning

ONR continues to carry out a programme of compliance inspections within the Decommissioning Division. Two systems inspections were carried out on legacy ponds and silos in this reporting period. A systems inspection on the Magnox Swarf Storage Silo (MSSS) liquor control system included participation by the Environment Agency. ONR judged the systems to be adequate but highlighted issues with maintenance arrangements on one of these systems, which SL has agreed to address.

Other work of note included an inspection of SL's reporting and investigation of events which demonstrated adequate arrangements, and an inspection of Decommissioning's arrangements which identified some areas of good practice, but also highlighted some procedural gaps when judged against ONR guidance.

An inspection of waste management across Decommissioning identified issues with the accumulation of waste on some plants and gaps in SL's capability to deal with Intermediate Level Waste arising from decommissioning in the short term. SL is considering options to address these issues, which will be followed up by ONR to ensure adequate closure.

Two minor events were formally reported in this period, neither of which had a significant safety consequence nor required formal investigation by ONR.

Infrastructure and Waste and Effluent Disposition Directorate

ONR has continued to monitor the work associated with the return to service of Waste Vitrification Plant (WVP) Line 3, following last year's power failure and subsequent migration of contamination into manned areas of the plant (an event which led to ONR issuing an Improvement Notice). As part of that focus, ONR has given permission (under LI 880) for an engineered design modification that will provide partial mitigation against a similar migration of contamination in the event of a future loss of power event.

The long-term outage in WVP arising from this event has meant that SL now anticipates breaching ONR's Highly Active Liquor (HAL) Stocks Specification at some point next year. The Specification was put in place in 2001 to regulate the site's reduction in HAL stocks down to so-called "buffer levels" by 2015. SL has made good and systematic progress since 2001

in reducing these stocks, which are now at far lower levels than in 2001. However, a breach appears unavoidable given the long-term unavailability of the WVP line and the reduction schedule we have imposed. ONR is nevertheless satisfied that SL is doing all that is reasonably practicable to minimise its holding of HAL and is considering what regulatory response is proportionate in the circumstances.

In addition, ONR issued a Licence Instrument (LI 880) acknowledging SL's submission of safety documentation to justify the replacement of fire systems in several legacy plutonium contaminated material (PCM) stores. SL proposed replacing these fire systems (which were approaching the end of their operation lives) with modern equivalents as fitted in more recently constructed on-site PCM stores. ONR judged that this proposal would lead to an improvement in safety, as the reliability of the fire detection system will be much enhanced.

Corporate Inspection Programme

ONR undertook an inspection of SL's arrangements for Licence Condition 13: Nuclear Safety Committee (NSC). The findings from the inspection have been shared with SL. Overall the arrangements were found to be adequate with two potential areas for improvement identified. One area was better alignment of the calendar of business for the NSC with the SL Executive calendar of business to enable advice from the NSC to be provided in a timely manner. Another was undertaking regular reviews of NSC membership to ensure the right competencies are available for providing advice. Both were accepted by SL and have been acted upon.

2.2 Other work

Project Delivery sub-programme

The ONR Project Delivery sub programme regulates on the programmes, projects and activities, which deliver risk and hazard reduction on the site.

This includes projects in the legacy ponds, legacy silos, decommissioning, high level waste and infrastructure areas of the site. In addition to regulating these areas, the sub programme also has a number of improvement themes, which encourage the acceleration of risk and hazard reduction:

- Prioritisation of our work to effectively use our resources,
- Removal of blockers,
- Removal of diversions and distractions,
- Incentivisation
- Fit for purpose solutions.

Of note from our engagements with the licensee during Quarter 2 (July - September 2014):

Legacy Ponds: ONR has carried out targeted specialist assessment to enable the Acknowledgement of Overarching Strategy Paper for First Generation Magnox Storage Pond Sludge Stream (LI878). This acknowledgement (granted on the 8 September) identifies the modifications needed to enable the export of sludge from the pond and into interim storage (Sludge Packaging Plant 1 – SPP1).

ONR is pleased that SL continues to export canned fuel to schedule from the Pile Fuel Storage Pond, following agreement from ONR in June 2014.

Legacy Silos: ONR has been engaged with MSSS and is pleased with SL's continued progress with its Liquor Activity Reduction campaign, a hazard-reducing project which is currently ahead of schedule. During Quarter 2 ONR, utilised SL flexible permissioning

arrangements to release a Hold Point associated with an internal crane within MSSS. This has been a long-standing Hold Point and its release means that SL can utilise the crane as an enabler to prepare for retrievals from this facility.

ONR has been engaged with new build projects and has held discussions related to strategy and technology choices for potential acceleration of these projects to support the timely remediation of legacy facilities. ONR has been engaged with the Pile Fuel Cladding Silo (PFCS) remediation project in preparation for an upcoming inspection of the project's integrated plan (scheduled for October).

Decommissioning: ONR carried out a targeted inspection to support the release of a Hold Point associated with the export of residues from Finishing Line 3. SL is progressing well with the decanting and export process and remains ahead of schedule with planned completion of this risk reduction project in December.

High Level Waste Plants: ONR specialist inspectors have been engaged on the inactive commissioning phase of Evaporator D in preparation for a permission decision in early 2015. ONR remains engaged with SL relating to the continued use of Evaporator C.

Infrastructure: ONR wrote to SL in April requiring improvements to the site's electrical infrastructure. During August, SL completed the 'telecontrol switching' improvement; the remainder of the areas for improvement identified in our letter are reported to be on schedule.

ONR has raised concerns regarding the delivery of the project to export legacy residues from Analytical Services as this has slipped from the schedule previously discussed.

Second Skip Handler, First Generation Magnox Storage Pond: ONR has held several engagements with SL project teams to discuss the development of the Second Skip Handler, which will support the decommissioning of this legacy facility. ONR is pleased to note that SL has taken significant learning from the original skip handler which has been applied appropriately in to the design of the new machine. ONR's current focus is on ensuring that SL delivers a 'fit-for purpose' solution, including both the engineering of the machine and the supporting arguments for safety.

Construction Crane Methodology: ONR has secured improvements to SL's construction crane methodology, which means that ONR now has the confidence to move to a position where it is no longer necessary to permit every use of a mobile crane (when used in a nuclear lift). To close out this intervention, ONR will inspect the implementation of SL's arrangements in January 2015, when the next high hazard lift is scheduled.

General: During this Quarter, ONR has further embedded our new Sellafield Strategy. For example, in the interests of removing diversions and distractions we have improved our regulatory meeting structure to rationalise and streamline our engagements with SL and so improve its and our efficiency. Key findings and regulatory judgements from our meetings and inspections are now escalated to a monthly Regulatory Interface Meeting (RIM) from which all 'regulatory business' can be managed. At this meeting, ONR can release regulatory Hold Points and raise areas of concern at the right level within SL's management structure. The RIM replaces several previous meetings.

In addition, as part of the Strategy, a collaborative approach that has been adopted between the six key organisations with an interest in accelerating hazard and risk reduction on the site. A working group was established earlier this year, and facilitates a coordinated approach to complex issues where input may be required from a broad range of decision makers. The group incorporates DECC, NDA, Sellafield Limited, Environment Agency, SHEX (the Government's Shareholder Executive) and ONR, all of whom are working together towards

the common objective of facilitating hazard reduction, for example by enhancing opportunities or removing barriers to progress.

ONR's Strategy focuses on key themes, such as effective prioritisation, removal of blockers/barriers to progress, and fit for purpose solutions to deliver hazard and risk reduction quickly and safely. This is having a positive impact on accelerating hazard reduction at Sellafield, and all organisations are committed to sharing positive case studies with our stakeholders. We have recently developed a [new page](#) on our website where we will be publishing examples of improvement as they are realised, and have introduced a new feature to our external newsletter [Quarterly News](#) to focus on a specific example in each edition

3 NON-ROUTINE MATTERS

Licensees are required to have arrangements to respond to non-routine matters and events. ONR inspectors judge the adequacy of the licensee's response, including actions taken to implement any necessary improvements.

Death of engineering contractor

Sadly, ONR was notified of the death of an employee of an engineering contractor, on site. In line with established procedures, the circumstances of the death are being investigated by the Health and Safety Executive.

Site Ion-Exchange Plant Improvement Notice closed out

ONR's Improvement Notice for legionella bacteria on the Site Ion-Exchange Plant cooling towers has been closed out by the due date, and ONR is satisfied that SL has addressed the requirements to bring the towers up to the required standard.

Extension granted for Fuel Handling Plant Gamma Gate Improvement Notice

ONR has considered SL's application for an extension to the Improvement Notice issued in November 2013 and is satisfied that SL has done all that is reasonably practicable to address the Notice within the timescales set. Therefore, we have granted an extension to the original Notice from the original date of 8 September 2014 to 31 August 2015. ONR will monitor SL's progress as part of routine regulatory interactions.

Magnox Reprocessing Plant shutdown

On 29 September 2014, SL took the conservative decision to shut down the Magnox Reprocessing Plant to allow a potential safety case discrepancy to be investigated. ONR is content that the Magnox Reprocessing Plant is in a safe and quiescent state and is engaging with SL to better understand the nature of the potential discrepancy.

Workplace Transport on the Sellafield Site

Following a series of inspections across the site, ONR has identified concerns with how SL is managing workplace transport hazards (e.g. risks to personnel from moving vehicles etc). ONR has written to SL setting out our concerns and seeking a programme of improvements.

Control of Asbestos

Inspections at a range of facilities on the site have highlighted concerns in regard to SL's management of asbestos. ONR has advised SL that we are minded to serve an Improvement Notice. Further details will be provided in our next Quarterly Report.

Calder Hall operating rule breach

An event at Calder Hall earlier this year caused the dry air supply to Reactor 1 to be interrupted beyond the time period allowed in an operating rule (168 hours). The dry air supply had been isolated to allow cutting and flanging of pipework to permit access to enable demolition of redundant buildings. SL took appropriate action to restrict work activities and closely monitor moisture levels until the dry air supply was restored. Reactor moisture levels remained well inside the safety margins throughout. SL has now concluded its own investigation. We followed up the event to confirm SL had appropriately promulgated its findings across the site and that a suitable programme to address the recommendations from its investigation is in place.

4 REGULATORY ACTIVITY

ONR inspectors may issue formal documents to ensure compliance with regulatory requirements. Under nuclear site licence conditions, ONR issues regulatory documents, which either permit an activity or require some form of action to be taken; these are usually collectively termed 'Licence Instruments' (LIs), but can take other forms. In addition, inspectors may issue Enforcement Notices to secure improvements to safety.

The following LIs and Enforcement Notices were issued during the period:

Table 1

Licence Instruments and Enforcement Notices Issued by ONR during this period

Date	Type	Ref No	Description
July 2014	Acknowledgement	878	Acknowledgement of Overarching Strategy Paper for FGMSL Sludge Stream
August 2014	Agreement	879	Implementation of OSM 9967 Fault Sequence Groups 21,22,23 & 24 to allow Hot Solvent Extraction Experiments within Laboratory Gloveboxes in NNL Central Laboratory.
August 2014	Acknowledgement	880	PCM Stores Fire System Replacement
August 2014	Acknowledgement	881	Acknowledgement of receipt of safety documentation for the modification to an existing plant – WVP Line 3 Stack Effect improvements

Reports detailing the above regulatory decisions may be found on the ONR website at <http://www.onr.org.uk/pars/>.

5 NEWS FROM ONR

Insight into ONR's work as an independent regulator of the nuclear industry can be found in ONR's [Quarterly News](#). The online publication reports on the key themes and developments in each of ONR's regulatory programmes and provides an update about the ongoing changes at ONR. . For the latest news and updates from ONR visit the [website](#) and sign up for our [ebulletin](#).

6 CONTACTS

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