Office for Nuclear Regulation (ONR)

Six Monthly Site Report for

Sellafield Site West Cumbria Sites Stakeholder Group (WCSSG)

Covering the period – 01 October 2019– 31 March 2020

Foreword

This report is issued as part of ONR's commitment to make information about inspection and other regulatory activities relating to the Sellafield site available to the public. Reports are distributed every six months 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 Sites 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: contact@onr.gov.uk

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1 INSPECTIONS

1.1 DATES OF INSPECTION

ONR nuclear safety inspectors made inspections on the following dates during this reporting period:

Period: 01 October 2019 – 31 March 2020	**October 2019**	**November 2019**	**December 2019**	**January 2020**	**February 2020**	**March 2020**
Special Nuclear Materials	29-30	5-6	03	14-15	4-5	
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2. ROUTINE MATTERS

2.1 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 2017 (IRR17) and the Management of Health and Safety at Work Regulations 1999 (MHSWR99).

Inspections entail monitoring the licensee's actions in relation to incidents, operations, maintenance, projects, modifications, safety case changes and any other matters that may affect safety on the site. The licensee, Sellafield Ltd (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.

During this period, routine inspections at SL covered the following:

Sellafield Compliance, Intelligence and Enforcement (SCIE) Sub-Division

The SCIE sub-division's objective is to seek evidence-based confidence that SL is complying with its statutory obligations and that workers and the public are protected from the hazards of the site.

Special Nuclear Materials Value Stream

During this period within the Special Nuclear Materials (SNM) value stream, ONR carried out four planned Licence Condition (LC) compliance inspections.

- LC 12 - Duly authorised and other suitably qualified and experienced persons
- LC 26 - Control and supervision of operations
- LC 32 - Accumulation of radioactive waste
- LC 35 - Decommissioning

In addition, a planned compliance inspection against the Ionising Radiations Regulations 2017 (IRR17) was undertaken.

ONR also undertook two planned System Based Inspections (SBIs). The first covered some of the SNM North facilities ventilation systems and the second SBI covered SNM South Thorp Product Store.

For all the planned LC compliance inspections, ONR judged that compliance with LC 12 (Duly authorised and other suitably qualified and experienced person), LC 26 (Control and supervision of operations), LC 32 (Accumulation of radioactive waste), and LC 35 (Decommissioning) were adequate, and awarded Green (no formal action) inspection ratings.

For both of the SBIs, the LCs inspected were LC 10 (Training); LC 23 (Operating rules); LC 24 (Operating instructions); LC 27 (Safety mechanisms, devices and circuits); LC 28 (Examination, inspection, maintenance and testing) and LC 34 (Leakage and escape of radioactive material and radioactive waste). ONR judged both of the systems inspected adequately fulfilled the requirements of the safety case and awarded Green (no formal action) inspection ratings to all six LCs.

Retrievals Value Stream

The ONR six monthly reports produced for previous periods incorporated both Retrievals and Remediation activities under the Decommissioning heading. SL has since reorganised under a value stream structure, which this report now reflects. In response ONR has also modified its internal structure to appoint separate Site Inspectors for the Retrievals and Remediation Value Streams. This approach enables a dedicated site inspector for Retrievals during a period where the Silos enter the phase of early retrievals.

During this period within the Retrievals value stream, ONR carried out three planned LC compliance inspections.

- LC 7 - Incidents on the site
- LC 11 - Emergency arrangements
- LC 35 - Decommissioning

ONR also carried out a lifting inspection within the First Generation Magnox Storage Pond (FGMSP) as part of a site wide intervention on lifting. The cranes intervention at FGMSP was part of a wider site intervention and is reported in section 3 below.

The LC 7 (Incidents on the site) planned inspection was conducted at the SL's Pile Fuel Storage Pond (PFSP). On the basis of the evidence sampled at the time of this inspection, ONR judged that the licensee has adequately implemented its arrangements for compliance with this LC and therefore consider that an inspection rating of Green (No Formal Action) was merited here.

The LC 11 (Emergency arrangements) planned inspection was conducted at the SL's Pile Fuel Cladding Silo (PFCS). On the basis of the evidence sampled at the time of this inspection, ONR judged that the licensee has adequately implemented its arrangements for compliance with this LC and therefore consider that an inspection rating of Green (No Formal Action) was merited here.

The LC 35 (Decommissioning) planned inspection was conducted at the SL's First Generation Magnox Storage Pond (FGMSP). On the basis of the evidence sampled at the time of this inspection, ONR judged that the licensee has adequately implemented its arrangements for compliance with this LC and therefore consider that an inspection rating of Green (No Formal Action) was merited here.

ONR also conducted an SBI of the structural containment of the PFSP. ONR judged that the licensee has adequately implemented its safety case for the system considered and found that all six Licence Conditions 10, 23, 24, 27, 28 & 34 were adequate and therefore a rating of Green (No Formal Action) was merited here. ONR did however identify a minor area for improvement and raised a level 4 regulatory issue to track the delivery of SL's improvements.

ONR attended regular quarterly meetings to review SL's environmental, safety, health and quality performance. ONR judged these meetings to provide a good forum for monitoring the performance of the Retrievals value stream and facilitating discussion and agreement of actions to address any adverse trends in performance.

Remediation Value Stream

During this period within the Remediation value stream, ONR carried out two planned LC compliance inspections.

- LC 4 - Restrictions on nuclear matter on the site
- LC 32 - Accumulation of radioactive waste

In addition, a planned compliance inspection against the Ionising Radiations Regulations 2017 (IRR17) was undertaken.

The LC 4 (Restrictions on nuclear matter on the site) inspection was undertaken at the Waste Treatment Complex (WTC) and Engineered Drum Stores (EDS) facilities. On the basis of the evidence sampled at the time of this inspection, ONR judged that the licensee has adequately implemented its arrangements for compliance with LC 4 and therefore consider that the required standard was met and an inspection rating of Green (No Formal Action) was merited here.

The LC 32 (Accumulation of radioactive waste) inspection was also carried out at the WTC and EDS facilities. On the basis of the evidence sampled at the time of this inspection, ONR judged that the licensee has adequately implemented its arrangements for compliance with LC 4 and therefore consider that the required standard was met and an inspection rating of Green (No Formal Action) was merited here. However, the inspection identified that a tracking database was now obsolete, and progress to replace the system had stalled. ONR raised a level 4 (minor) Regulatory Issue to monitor progress on the replacement project.

ONR inspected compliance with the Ionising Radiations Regulations 2017 (IRR17) at the Active Handling Facility (AHF). On the basis of the evidence sampled at the time of this inspection, ONR judged that the licensee has adequately demonstrated compliance with IRR17 and therefore consider that an inspection rating of Green (No Formal Action) was merited here.

During this period ONR attended regular quarterly meetings with stakeholders to review SL's environmental, safety, health and quality performance. ONR judge that these meetings provided a good forum for monitoring the performance of the Remediation value stream and to discuss and agree actions to address any adverse trends in safety.

Spent Fuel Management Value Stream

During this reporting period, ONR undertook planned compliance inspections in the Highly Active Liquor Evaporation and Storage (HALES) facilities, the High Level Waste Plants (HLWP) and the Effluents and Encapsulation Plants (E&EP).

Highly Active Liquor Evaporation and Storage (HALES)

Within HALES, ONR Inspectors carried out the following planned LC compliance inspections.

- LC 10 – Training
- LC 26 – Control and Supervision of Operations
- LC 28 – Examination, Inspection, Maintenance and Testing

For all the planned LC compliance inspections, ONR judged that compliance with LC 10 (Training), LC 26 (Control and supervision of operations) and LC28 (Examination, inspection, maintenance and testing) was adequate, and awarded Green (no formal action) inspection ratings.

High Level Waste Plants (HLWP)

Within HLWP, ONR Inspectors carried out the following planned LC compliance inspections.

- LC 10 – Training
- LC 11 – Emergency Arrangements
- LC 12 – Duly Authorised and Other Suitably Qualified and Experienced Persons
- LC 24 – Operating Instructions
- LC 26 – Control and Supervision of Operations

In addition, ONR undertook a Systems Based Inspection (SBI) of the cooling system within one of the waste vitrification lines and the vitrification product store.

ONR also carried out a lifting inspection within the HLWP as part of a site wide intervention on lifting. The cranes intervention at HLWP was part of a wider site intervention and is reported in section 3 below.

The LC 10, 12, 24 and 26 compliance inspections were undertaken to determine if SL had addressed the requirements of the Improvement Notice issue in April 2019. ONR judged that SL had addressed the Improvement Notice and that compliance with LC 10 (Training), LC 12 (Duly authorised and other suitably qualified and experienced persons), LC 24 (Operating instructions) and LC 26 (Control and supervision of operations) was now deemed adequate, and awarded Green (no formal action) inspection ratings.

The LC 11 (emergency arrangements) was an unannounced inspection and took place during the evening shift. ONR judged that compliance with LC 11 (Emergency arrangements) was adequate, and awarded a Green (no formal action) inspection rating.

The HLWP cooling SBI considered compliance against the standard set of LCs for SBIs: LC 10 (Training); LC 23 (Operating rules); LC 24 (Operating instructions); LC 27 (Safety mechanisms, devices and circuits); LC 28 (Examination, inspection, maintenance and testing) and LC 34 (Leakage and escape of radioactive material and radioactive waste). ONR's overall judgement was that the cooling system adequately fulfils the requirements of the safety case and awarded a Green (no formal action) inspection rating to all six LCs inspected.

Effluents and Encapsulation Plant (E&EP)

Within the Effluents and Encapsulation facilities, ONR Inspectors did not carry any planned LC compliance inspections during this period. However, ONR did undertake a Systems Based Inspection (SBI) of the ventilation system within the Waste Encapsulation Plant (WEP).

The WEP ventilation SBI considered compliance against the standard set of LCs for SBIs: LC 10 (Training); LC 23 (Operating rules); LC 24 (Operating instructions); LC 27 (Safety mechanisms, devices and circuits); LC 28 (Examination, inspection, maintenance and testing) and LC 34 (Leakage and escape of radioactive material and radioactive waste). ONR's overall judgement was that the ventilation system adequately fulfils the requirements of the safety case and awarded a Green (no formal action) inspection rating to all six LCs inspected.

Magnox

During this period, ONR Inspectors undertook six planned LC compliance inspections within Magnox.

- LC 7 – Incidents on the site
- LC 22 – Modification or experiment on existing plant
- LC 27 – Safety mechanisms, devices and circuits
- LC 28 – Examination, inspection, maintenance and testing
- LC 35 - Decommissioning
- LC 36 – Organisational Capability

The LC 7 (incidents on the site) planned inspection was conducted at the SL Magnox East River (MER) facility. On the basis of the evidence sampled at the time of this inspection, ONR judged that the licensee has adequately implemented its arrangements for compliance with this LC and therefore consider that an inspection rating of Green (No Formal Action) was merited here.

The LC 22 (modification or experiment on existing plant) planned inspection was conducted at the SL Magnox Reprocessing Facility (MRF). On the basis of the evidence sampled at the time of this inspection, ONR judged that the licensee has adequately implemented its arrangements for compliance with this LC and therefore consider that an inspection rating of Green (No Formal Action) was merited here.

The LC 27 (safety mechanisms, devices and circuits) planned inspection was conducted at the SL MER facility. On the basis of the evidence sampled at the time of this inspection, ONR judged that the licensee has adequately implemented its arrangements for compliance with this LC and therefore consider that an inspection rating of Green (No Formal Action) was merited here. During the inspection ONR

identified two minor improvements and has raised two level 4 (minor) regulatory issues to track the delivery of SL improvements.

The LC 28 (examination, inspection, maintenance and testing) planned inspection was conducted at the SL MER facility. On the basis of the evidence sampled at the time of this inspection, ONR judged that the licensee has adequately implemented its arrangements for compliance with this LC and therefore consider that an inspection rating of Green (No Formal Action) was merited here.

The LC 35 (Decommissioning) planned inspection was conducted at the SL MRF. On the basis of the evidence sampled at the time of this inspection, ONR judged that the licensee has adequately implemented its arrangements for compliance with this LC and therefore consider that an inspection rating of Green (No Formal Action) was merited here.

The LC 36 (Organisational Capability) planned inspection was conducted at the SL MRF. On the basis of the evidence sampled at the time of this inspection, ONR judged that the licensee has adequately implemented its arrangements for compliance with this LC and therefore consider that an inspection rating of Green (No Formal Action) was merited here.

In addition, ONR undertook one planned SBI conducted on the solvent and reagent systems at the MRF. On the basis of the evidence sampled at the time of this inspection, ONR judged that the licensee has adequately implemented its safety case for the systems considered and found that all six Licence Conditions 10, 23, 24, 27, 28 & 34 were adequate and therefore a rating of Green (No Formal Action) was merited here.

ONR attended regular quarterly meetings to review SL's environmental, safety, health and quality performance. ONR considers that these meetings have provided a good forum for monitoring the performance of the Magnox Plants and to discuss and agree actions to address any adverse trends in safety.

Thermal Oxide Reprocessing Plant (THORP) and Oxide Fuel Storage Group (OFSG)

During this period, ONR Inspectors undertook four planned LC compliance inspections within the Thermal Oxide Reprocessing Plant (THORP) and Oxide Fuel Storage Group (OFSG).

- LC 12 – Duly authorised and other suitably qualified and experienced persons
- LC 26 – Control and supervision of operations
- LC 32 – Accumulation of radioactive waste
- LC 35 – Decommissioning

For these LC compliance inspections, in general, ONR judged that compliance was adequate and awarded Green (no formal action) inspection ratings.

The LC 12 inspection identified a number of minor shortfalls in relation to signatures on assessment records and a training guide not reflecting updated courses; regulatory advice was provided for the first matter, for the second a regulatory issue was raised

which OFSG is addressing. For LC26, I found that operations were adequately controlled and supervised by the Duly Authorised Person.

The LC 32 and LC 35 Inspections at THORP were both rated Green, one minor shortfall was identified in relation to the control of laydown areas, and this is being addressed by the Licensee.

In addition, ONR undertook an SBI at the THORP Receipt and Storage Pond (now controlled by OFSG), a Crane Intervention at the First Generation Oxide Fuel Storage Pond (OFSG), and an Ionising Radiations Regulations 2017 (IRR17) Inspection at THORP.

The SBI was targeted at the THORP Receipt and Storage Facility operated by OFSG. The SBI considered compliance against a standard set of LCs for SBIs: LC10; Training, LC23; Operating rules, LC24; Operating instructions, LC27; Safety mechanisms, devices and circuits, LC 28; Examination, inspection, maintenance and testing, and LC34; Leakage and escape of radioactive material and radioactive waste. ONR's overall judgement was that the system adequately fulfils the requirements of the safety case and awarded ratings of Green (no formal action) for all of the six licence conditions.

The IRR17 Inspection at THORP was rated Green and identified a number of areas of good practice.

The cranes intervention at OFSG was part of a wider site intervention and is reported in section 3 below.

In this six month period both OFSG and THORP have adequately addressed issues raised at previous interventions.

Site Infrastructure

During this period, ONR undertook six planned LC compliance inspections covering eight licence conditions within Site Management.

- LC 7 – Incidents on the site
- LC 11 - Emergency arrangements
- LC 12 - Duly authorised and other suitability qualified and experience persons)
- LC 22 – Modification or experiment on existing plant
- LC 26 - Control and Supervision of Operations
- LC 28 – Examination, inspection, maintenance and testing
- LC 32 - Accumulation of Radioactive Waste)
- LC 35 - Decommissioning

The LC 7 (Incidents on site) planned inspection was conducted of National Nuclear Laboratories Central Labs. On the basis of the evidence sampled at the time of this inspection, ONR judged that NNL has adequately implemented its arrangements for compliance with this LC and therefore consider that an inspection rating of Green (No Formal Action) was merited here.

The LC11 (Emergency arrangements) was conducted of SL's Security and Resilience function. On the basis of the evidence sampled at the time of this inspection, ONR

judged that the licensee has adequately implemented its arrangements for compliance with this LC and therefore consider that an inspection rating of Green (No Formal Action) was merited here.

The LC 12 (Duly authorised and other suitability qualified and experience persons) and LC 26 Control and Supervision of Operations and LC28 (Examination, inspection, maintenance and testing) planned inspection was conducted of SL's Analytical Services. On the basis of the evidence sampled at the time of this inspection, ONR judged that the licensee has adequately implemented its arrangements for compliance with these LCs and therefore consider that an inspection rating of Green (No Formal Action) was merited here.

The LC 22 (Modification or experiment on existing plant) planned inspection was conducted of SL's Utilities. On the basis of the evidence sampled at the time of this inspection, ONR judged that the licensee has adequately implemented its arrangements for compliance with this LC and therefore consider that an inspection rating of Green (No Formal Action) was merited here.

The LC32 (Accumulation of Radioactive Waste) and LC 35 (Decommissioning) planned inspection was conducted of SL's Analytical Services. On the basis of the evidence sampled at the time of this inspection, ONR judged that the licensee has adequately implemented its arrangements for compliance with these LCs and therefore consider that an inspection rating of Green (No Formal Action) was merited here. ONR did identify areas for minor improvements and has raised two level 4 regulatory issues to track the delivery of SL's improvements.

In addition, ONR undertook one planned SBI of the site steam distribution system, the LCs inspected were the standard set for SBIs: LC 10 (Training); LC 23 (Operating rules); LC 24 (Operating instructions); LC 27 (Safety mechanisms, devices and circuits); and LC 28 (Examination, inspection, maintenance and testing), but did not include LC 34 (Leakage and escape of radioactive material and radioactive waste). ONR considered this system meets the requirements of the safety case and awarded a Green (no formal action) inspection rating to all five LCs inspected. ONR nevertheless identified a minor improvement and has raised a level 4 (minor) regulatory issue to track the delivery of SL's improvements.

Corporate Inspection Programme

ONR's corporate inspection programme for the Sellafield site has two main areas of focus:

- Examining the adequacy of the arrangements that SL has made to comply with its nuclear site licence, securing improvements as necessary; and
- Overseeing SL's transformation plan, including leadership and management for safety.

ONR inspectors carried out three planned LC compliance inspections during the period covered by this report:

- LC 4 "Restrictions on nuclear matter on the site";
- LC 19 "Construction or installation of new plant" and LC 20 "Modification to design of plant under construction"; and

- LC 34 “Leakage and escape of radioactive material and radioactive waste”.

A compliance inspection of LC 26 “Control and supervision of operations” planned for 25-26 March 2020 had to be postponed due to the impact of COVID-19.

For the inspections of LC 4, LC 19, LC 20 and LC 34, ONR judged that the licensee’s compliance arrangements were adequate, and awarded ‘Green’ (no formal action) inspection ratings.

ONR also continued to monitor improvement actions being taken by SL in response to previous compliance inspections. During this period, SL adequately addressed a regulatory issue relating to its arrangements for managing operational records. Through other regulatory issues ONR is continuing to monitor improvements SL’s is making to its arrangements for managing legacy training materials and its delivery model for disciplined operations and human factors. ONR continued to engage with SL on trials that are being conducted of changes to its arrangements for work delivery, including follow-up on a regulatory issue raised during previous inspections of these trials.

ONR is continuing to monitor SL’s progress in addressing three regulatory issues relating to leadership and management for safety, specifically: consistency of safety leadership; the design and implementation of the licensee’s safety management system; and the quality of, and adherence to, working level instructions. ONR is satisfied with SL’s progress on improvements to safety leadership and the safety management system, but has escalated its oversight of the regulatory issue relating to work instructions. SL is addressing this issue as part of a broader nuclear safety improvement programme.

During this period, ONR continued to maintain oversight of SL’s transformation plan, which comprises a portfolio of business change aligned to its strategic objectives. In particular, ONR has been monitoring mobilisation of the Programme and Project Partner (PPP) contracts, improvements to the SL Management System (SLMS), development of the business case for the Sellafield Enterprise Management System (SEMS), ‘Leadership and People’ improvements, and SL’s consideration of supply chain opportunities. ONR is satisfied with SL’s approach in these areas, and provided advice and guidance in particular to SL and its four PPPs on management arrangements to comply with the nuclear site licence and intelligent customer capability. This included provision of two training sessions on ONR’s role, structure and operational practices.

Conventional Health & Safety Interventions

Asbestos management across the SL site remains a regulatory priority for ONR. SL is developing and implementing an asbestos strategy and action plan, to enable a site-wide and prioritised approach to asbestos management. ONR will maintain focus on the implementation of the strategy and action plan to ensure timely implementation of the actions and to ensure risks are being effectively controlled. A Regulatory Issue remains open at Level 2.

Legionella management across the SL site also continues to remain a regulatory priority for ONR. ONR continues to have oversight of legionella management arrangements to ensure risks are being effectively controlled.

Conventional Health and Safety (CHS) inspectors have provided support and advice in relation to the Construction (Design and Management) Regulations 2015 (CDM) on a number of projects including Sellafield Product and Residue Store Retreatment Plant (SRP), Replacement Analytical Programme (RAP) and the B6 Diffuser. This has also included providing CDM advice regarding the PPP contracts.

SL moved from a Lower Tier to an Upper Tier COMAH establishment, due to a change in hazard classification of nitric acid, in September 2017. In accordance with the Control of Major Accident Hazard (COMAH) Regulations 2015, SL sent the Safety Report to ONR on 30 September 2019. Early Predictive Screening identified concerns about the way in which the severity had been assessed for the Major Accident Hazard Risk Assessments (MAH RA). As this would have had a major impact for further assessment of the safety report across all disciplines, SL was asked to review this aspect of the Safety Report. A revised Safety Report was submitted on 13 March 2020. The COMAH Competent Authority (CA), (which is jointly ONR and the Environment Agency), will conduct an assessment of the report over 6 months. The On-Site Emergency Plan has been updated to include the consequences of possible major accidents. A Regulatory Issue remains open regarding improvements SL is making to its management arrangements in line with COMAH. This Regulatory Issue will remain open until the CA has carried out its assessment of the COMAH Safety Report.

Periodic Safety Review

SL's Periodic Safety Review (PSR) programme remains on schedule. ONR is continuing to engage with SL over identified opportunities for improvements within the PSR programme. ONR is continuing to monitor and support delivery of improvements identified during earlier PSR inspections. The new arrangements have resulting in better attention being applied to those improvements which have the greatest impact on nuclear safety.

During the reporting period, ONR carried out two planned LC 15 (Periodic review) compliance inspections of pipe bridges and stores within the Infrastructure and Decommissioning value streams respectively. ONR judged that compliance was adequate and awarded a Green (no formal action) inspection rating.

Permissioning Activity

ONR's permissioning process continues to monitor SL's planned submissions in accordance with its Hold Point Control Plan, which forms part of its arrangements under LC 22. This process ensures ONR has regulatory oversight and control over licensee activities with potential for highest risk. Within this reporting period, ONR has released four hold points on modifications to various plants on Sellafield site. These include:

- THORP POCO preparations
- Wet Inlet Facility (WIF) new fuel safety case
- Waste Vitrification Plant (WVP) replacement, commissioning and operation of new tertiary stage metal HEPA filter system without electrostatic precipators
- THORP welded can safety case

In 2019, SL notified ONR a shortfall in the substantiation of the containment performance of the THORP product packages being produced and stored in THORP product store (TPS) and Sellafield Product and Residue Store (SPRS). As a result, there was uncertainty in the quality of the weld made to seal the package, to provide long term safe containment from radiological, chemo-toxic and criticality considerations.

SL has since proposed an alternative means of validating the overall integrity of the packages. Rather than relying solely on the outer containment, the revised substantiation takes into account the collective performance of all package layers and how the content could be released and transported between the individual layers that make up the package.

ONR conducted a thorough assessment of the revised safety case from fault studies and structural integrity perspectives, and concluded that it had provided confidence that the associated risks were maintained as ALARP. As a result, ONR issued Licence Instrument 529 giving agreement to SL to the continued production, transfer and storage of THORP Packages, under the revised safety case.

2.2 Other Work (Project Delivery)

Project Delivery Sub-Division

The ONR Project Delivery sub-division regulates the programmes, projects and activities, associated with the delivery of high hazard and risk reduction on the Sellafield 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-division also has a number of improvement themes, aimed at encouraging SL to accelerate risk and hazard reduction, namely:

- Prioritisation
- Use of resources
- Removal of blockers
- Removal of diversions and distractions
- Incentivisation
- Fit for purpose solutions
- Risk Appetite
- Communications

Key points from ONR's interventions with SL during this reporting period are described below.

Analytical Services

ONR continues to engage with SL over the need to secure long term provision of analytical services for the Sellafield site (RAP). This is necessary to support the safety of on-going operations and, specifically, hazard and risk reduction activities across the site. The RAP project continues to progress its preliminary design and has recently gained NDA and Government sanctions which will enable it to complete the detailed design.

ONR has also continued to engage with SL to regulate asset care improvements and the reduction of legacy waste presently stored within the existing Analytical Services facility. ONR has been encouraged that SL continues to make significant progress in the removal of legacy wastes (both aqueous and solvent) from this facility. Of note was the recent completion of Plutonium Contaminated Material (PCM) solvent legacy waste disposal which represents a significant reduction in radiological risk to on-site workers.

Pile Fuel Storage Pond (PFSP)

ONR's regulatory focus continues to be on the retrieval, removal and export of intermediate level waste and bulk sludge from this pond, and preparation for its interim (dewatered) state.

ONR continues to engage with the licensee and assess its proposals to dewater two bays as a pilot for the interim state. These proposals include the potential to use divers within the bays to improve the removal of items and final isolation. Divers have been used successfully on Magnox Ltd. Ponds previously, but ONR is assessing the proposal to ensure it is appropriate for PFSP. ONR can only grant permission once a successful demonstration of safety has been submitted and assessed.

Within this Period ONR released the hold point to allow SL to remove a redundant Low Active Pipework structure from PFSP.

SL has continued to make progress in exporting empty skips from Pile Fuel Storage Pond.

First Generation Magnox Storage Pond (FGMSP)

The ONR regulatory focus continues to be on the retrieval, removal and export of fuel, intermediate level waste, and bulk sludge from the pond.

ONR has continued engagement on the Interim Storage Facility (ISF) and Self-Shielded Box (SSB) project, undertaking a number of interventions with the assessment team on specific technical subjects, particularly focusing on characterisation and conditioning of the wastes to ensure safe interim storage. The engagements have also begun to discuss potential future wastes for the ISF, and whether any modification to the facility or its operation is necessary.

SL has continued to make progress in retrievals, by exporting sludge and skips from First Generation Magnox Storage Pond.

ONR also assessed and released the hold point to allow SL to deploy and operate a self-erecting tower crane to support the replacement of the decanner roof.

Magnox Swarf Storage Silo (MSSS)

SL continues to prepare for waste retrievals from Compartment 10 within the MSSS. ONR previously permissioned SL's to commence trace active commissioning of the retrieval ventilation system. This constituted the first of three permissioning decisions that are required so that retrieval of Miscellaneous Beta Gamma Waste from

Compartment 10 can commence. SL has now completed this trace active commissioning of the retrieval ventilation system.

SL has submitted its safety case to transfer Silo Emptying Plant №2 (SEP2) onto Compartment 10 and commence its trace active commissioning while connected to a compartment. SEP2 is currently completing its inactive commissioning. ONR has commenced its assessment of this safety case and expects to reach the second permissioning decision by May 2020. This permission decision is will take account of the retrieval ventilation system trace active commissioning findings.

SL's overall timescale has extended again and waste retrieval is unlikely to commence before December 2020. ONR recognises the complexity of delivering hazard and risk reduction in the MSSS and continues to engage with SL to secure regulatory confidence in its delivery plans.

SL has also submitted a plant modification proposal and safety justification to ONR to permit the withdrawal of forced cooling in the second extension as it considers that the radiogenic and corrosion heat generation in the waste has reduced sufficiently such that active cooling is no longer required. As operation of the second extension coolers has some inherent risks, the proposal if justified would lower operational risk. ONR is currently assessing the proposal and expects to make a permissioning decision towards the end of April 2020.

Waste Retrievals

SL is progressing a number of new build and existing facility modification activities that will directly support waste retrievals from the legacy silos, (Magnox Swarf Storage Silo (MSSS) and Pile Fuel Cladding Silo (PFCS)). ONR continues to engage with SL to gain regulatory confidence that these facilities can be delivered in time to meet the overall programme for timely, safe waste retrievals from these legacy silos. In particular, ONR has focussed on the Box Encapsulation Plant (BEP), Box Encapsulation Plant Product Store / Direct Import Facility (BEPPS/DIF), Waste Transfer Route (WTR), Silo Maintenance Facility (SMF), and other key waste retrieval and storage enablers. The safety cases for BEPPS/DIF and WTR are expected to be submitted shortly to support ONR permissioning decisions. ONR's regulatory focus will continue in this area to ensure we have the necessary regulatory confidence in these aspects of SL's hazard and risk reduction programmes.

Pile Fuel Cladding Silo

ONR completed its assessment of the safety case from SL to support changes in the limits and conditions associated with the oxygen levels permitted within the silo. ONR gave its agreement to the implementation of the proposed changes through Licence Instrument 525 which was issued on 28 February 2020.

SL has continued to experience delays in the availability of the Box Encapsulation Plant Product Store (BEPPS), which is being built to house the waste removed from PFCS and the Magnox Swarf Storage Silo. This is not expected to be ready to receive waste until 2021 and this means that the "early retrievals" project (designed to retrieve waste from PFCS compartment number 5) is also delayed.

SL has undertaken further work to look at the options to proceed with the active commissioning of the PFCS retrievals capability in the absence of BEPPS being ready to receive waste containers. This includes consideration of some local storage (outside PFCS) of one or two containers of waste and consideration of the transfer of a limited number of containers to an alternative waste storage facility on the site. ONR welcomes SL's intention to explore these options to mitigate the impact of the BEPPS delay, and will continue to engage as necessary with SL to support this.

SL has also been able to make use of the additional time afforded by the BEPPS delay to maximise training and process improvements for "full retrievals" and to bring forward work associated with the installation of the "full retrieval" capability that will be needed to remove waste from all compartments of PFCS as well.

Special Nuclear Material Projects

Through ONR's three Level 1 regulatory issues (i.e. ONR's highest level of issue) we continue to engage and influence the delivery of hazard and risk reduction activities regarding the Special Nuclear Material facilities. Specifically, this includes asset care improvements on the First Generation Finishing Line (FGFL) facility and the delivery of capabilities to allow continued safe and secure storage of SNM.

With respect to FGFL asset improvement, SL continues to make satisfactory progress on the electrical and containment upgrade tasks within the SNM (North) facilities. Of particular note during this reporting period is that SL has achieved the Key Decommissioning Milestone (Removal of redundant Gloveboxes) associated the legacy Finishing Line 3 within the FGFL thus representing a significant decrease in the risk posed by this legacy area.

As part of the SL Package Integrity Recovery Programme (PIRP), ONR has granted permission for SL to commence the construction of the Sellafield Product and Residue Store Retreatment Plant (SRP) and has granted Licence Instrument 526 Agreeing to SL's request to commence this activity.

The construction of SRP is fundamental to the success of PIRP and forms part of ONR's continued engagement and influence at SL to ensure the implementation of capabilities required for the safe longer term storage of SNM inventory that has been consolidated from Dounreay to Sellafield.

Decommissioning (Remediation) Projects

In December 2019 SL confirmed that it had completed asbestos removal and demolition of two redundant stores; a key decommissioning milestone. This removes the risk of asbestos contamination of adjacent high hazard facilities.

ONR regulatory engagements have continued on key remediation projects. SL has started to install two facilities, known as active demonstrators, on site. The facilities will demonstrate new technology for decommissioning and dismantling redundant radioactive components. Both facilities use robotically deployed laser cutting, housed in a purpose-built containment structure to dismantle the redundant radioactive components. One demonstrator will process intermediate level radioactive waste (ILW) redundant pond storage skips and the other alpha-contaminated redundant gloveboxes.

SL has notified ONR of delays in bringing the demonstrators into service. Neither demonstrator currently contributes to high hazard and risk reduction on site. To date ONR has been satisfied with SL's justifications for the delays.

SL continues to procure long-lead time components for use on the bulk removal of residual radioactive flocculent solids from redundant stock tanks. ONR identified that SL had proactively sought learning on managing risks associated with high-numbers of air-fed suit operations for semi-automated recovery of alpha-contaminated materials. SL has recently produced a revised underpinned programme to deliver this high hazard reduction operation within the timescale of the associated key decommissioning milestone.

SL has made good progress with demolition of the Pile one chimney diffuser. Work remains on programme to complete demolition of the diffuser and collar section within the key decommissioning milestone date. With the demolition of the diffuser and collar the seismic withstand of the remaining chimney section has been substantiated to that of an existing structure.

SIXEP Continuity Plant (SCP)

ONR has completed assessment of SL's safety case justifying construction and installation of SCP. On 31st March, ONR issued Agreement under SL's LC19 (construction or installation of new plant) arrangements for commencement of SCP construction and installation (Licence Instrument LI 528).

3 NON-ROUTINE MATTERS

Special Nuclear Materials

None reported during this period.

Retrievals Value Stream

During this period SL has reported an incident relating to a leak in the Redundant Settling Tank sump above the statutory reporting limits in IRRs 2017. This was classified as an INES level 1 (anomaly) on the international event scale. There were no radiation dose consequences from the event to the workforce or the public. SL has safely removed the waste and debris from the RST and relocated to a settling tanks within the facility and is in the process of sealing the RST sump with concrete.

ONR and EA are satisfied with SL's approach to dealing with this matter and we are maintaining close regulatory oversight of SL's progress in terminating the leak.

SL also reported a second incident relating to leakage of radioactive liquor from the original building of the Magnox Swarf Storage Silos. This incident was rated as INES 2 on the international event scale. The radioactivity is being discharged into the ground beneath the silos. Monitoring of groundwater boreholes and in-ground gamma activity around the facility has not indicated a release to the environment. The migration of contamination through the ground is predicted to be very slow therefore any risk to the public and environment is low. SL is investigating to determine the cause and further characterise the losses and ONR and Environment Agency are continuing to maintain close regulatory oversight in relation to this matter, including undertaking an investigation.

Both of the above events are subject to formal investigation jointly by ONR and the EA.

Remediation Value Stream

During this period ONR undertook preliminary enquiries in response to a number of incidents reported on the site. ONR judged none of the events met ONR's formal investigation criteria. The licensee has, or is in the process of addressing any learning and taking the remedial measures necessary under its own arrangements.

For one reported incident, relating to the MOX Demonstration Plant, ONR has issued an Enforcement Letter and undertook a 'Holding to Account' meeting with the licensee to ensure regulatory expectations are recognised. ONR was satisfied with the response from the licensee and expects the identified to meet with ONR's regulatory expectations.

A Board of Inquiry investigation report was completed in response to a number of incidents during this period relating to the management and consignment of waste. A number of remedial measures were identified including the creation of a new waste management structure, under the Remediation value stream. ONR will monitor the delivery of these actions through normal regulatory interventions with the site in this area.

Spent Fuel Management

Waste Vitrification Plant (WVP)

During this period SL provided sufficient evidence to close the Improvement Notice (IN) which was issued following ONR's investigation into the incident in the Waste Vitrification Plant (WVP), within the High Level Waste Plants on the 7 February 2019.

SL provided evidence of improvements in the areas of training (LC10), duly authorised and other suitably qualified and experienced persons (LC12) and operating instructions (LC24).

ONR inspectors attended the site and reviewed this work and were satisfied that the compliance shortfalls identified had been adequately addressed and the requirements of the IN met. Further information can be found at:-

http://news.onr.org.uk/2020/02/sellafield-complies-with-improvement-notice/

Magnox

During this period SL identified a trend of minor incidents, at the Magnox Reprocessing Facility (MRF), that appeared to have similar underlying causes relating to situational awareness and operational focus. To address this, SL introduced an enhanced oversight function at MRF. This enhanced nuclear oversight function will introduce additional independent SQEP staff to observe, mentor and coach the operations and maintenance personnel at MRF. ONR has engaged with SL on this matter and is confident that they understand the causes of these incidents and appropriate remedial measures have been identified prevent recurrence. ONR has

raised a level 3 regulatory issues to track the implementation and delivery of the corrective action programme.

Thermal Oxide Reprocessing Plant (THORP) and Oxide Fuel Storage Group (OFSG)

ONR undertook preliminary enquiries at THORP for a number of reported incidents in this period but concluded that none of these met ONR's investigation criteria. A number of events were also followed up at both operating units, and SL has, or is in the process of addressing these under its own arrangements. ONR will monitor completion of close-out actions through normal site interventions.

Site Infrastructure

ONR conducted preliminary enquiries on several minor incidents reported by SL in Site Management area. None of these were judged meet ONR's investigation criteria, however one resulted in an enforcement letter being sent by ONR to SL, as detailed below.

An incident occurred in December 2019 when SL was restoring an electricity feed following a previous fault. The restoration was carried out incorrectly which led to a power dip occurring affecting several facilities on the site. Following this incident, ONR carried out a site visit to determine if a further investigation was required. On the evidence found during this visit, ONR determined that ONR's investigation criterion was not met however shortfalls against the requirements of the Electricity at Work Regulations were identified. SL identified a number of remedial measures to prevent a re-occurrence, however ONR judged further necessary improvements were required and set these out in an ONR Enforcement Letter. ONR will monitor this matter through normal regulatory business and a specific regulatory issue has been raised.

Crane Lifting Operations Intervention

During this period ONR undertook a series of interventions specifically looking at crane lifting operations across the site.

The intervention covered a range of Licence conditions: LC 7 (Incidents on the site); LC 10 (Training); LC 15 (Periodic review); LC 23 (Operating rules); LC 24 (Operating instructions); LC 26 (Control and Supervision of operations); LC 27 (Safety mechanisms, devices and circuits); LC 28 (Examination, inspection, maintenance and testing) and compliance with the Lifting Operations and Lifting Equipment Regulations (LOLER).

The interventions were undertaken by Site and Specialist Inspectors across a sample of facilities - First Generation Magnox Storage Pond, High Level Waste Plant and Oxide Fuel Storage Group.

At the FGMSP the intervention found that Licence Conditions 10, 23 & 24 were adequate and therefore a rating of Green (No Formal Action). For Licence Condition 28 a rating of Amber (Seek Improvement) was merited here due to a compliance gap for which a level 3 Regulatory Issue was raised to seek and to track the delivery of SL's improvements. ONR did also find several minor areas for improvement and raised six level 4 regulatory issues to track the delivery of SL's improvements.

At the HLWP ONR's overall judgement was that the facility adequately complied with the lifting requirements and awarded a Green (no formal action) inspection rating to all eight LCs inspected and LOLER.

At OFSG ONR's overall judgement was that the facility adequately complied with the lifting requirements and awarded a Green (no formal action).

4 REGULATORY ACTIVITIES

Licence Instruments and Enforcement Notices Issued by ONR during this period

Date	Type	Ref No	Description
01/04/2020	Agreement	LI 529	Agreement to the production, transfer and storage of Thorp Packages, under a revised nuclear safety case.
31/10/2019	Agreement	LI 526	Agreement to commence the construction of SPRS Retreatment Plant (SRP) base slab, main building and SPRS to SRP elevated transfer tunnel
28/02/2020	Agreement	LI 525	Provides for changes in the limits and conditions associated with in-silo oxygen levels at the Pile Fuel Cladding Silo
31/03/2020	Agreement	LI 528	SIXEP construction or installation of new plant) arrangements for commencement of SCP.

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

5 NEWS FROM ONR

Below are summaries of key activities over the last three months. For the latest news and updates from ONR visit the website and sign up for our ebulletin (http://www.onr.org.uk/ebulletin/index.htm).

All our latest news is available on our website www.onr.org.uk.

Covid-19 (Coronavirus) (ONR position)

- ONR is continuing to protect society by securing safe nuclear operations during the Coronavirus pandemic. ONR staff continue to work from home, in line with government advice. We have considered our priorities, have deferred non-critical activities, and are carrying out as much of our work as possible via videoconference, phone and email. Our regulatory focus includes assurance, where appropriate, from site licensees that they are applying the public health measures introduced to reduce the spread of coronavirus. A limited number of our inspectors can, as key workers, continue to travel to site as necessary to conduct urgent and essential regulatory inspections. Nuclear sites have been reducing non-essential activities so as to protect staff, infrastructure, and the public. As always, we are regulating those activities to ensure they are carried out safely and securely. ONR's latest position can be found on our website.

Enforcement Action

- ONR served an Enforcement Notice on Urenco UK Ltd following a fire safety inspection at its Capenhurst Works in Cheshire during December 2019. The notice was issued in response to shortfalls identified in the fire alarm and detection systems at one of the site's facilities.
- In February ONR announced that SL had complied with an Improvement Notice relating to staff training, operating procedures and procedural adherence that they were served with in May 2019.

Regulatory Updates

- In January ONR published an update to its Safety Assessment Principles, to incorporate some relatively minor revisions including typographical corrections and updates to reflect changes to the UK's nuclear regulatory framework since 2014.
- In February ONR completed Step 3 of the Generic Design Assessment (GDA) of the UK HPR1000 design, and took the decision to progress to Step 4 of the GDA. During Step 3, ONR increased its regulatory scrutiny and undertook a more detailed assessment of the design, focusing on the methods and approaches used by the GDA Requesting Party to underpin their safety and security claims.
- In March we published the Quarterly Statement of Civil Incidents for the period 1 October to 31 December 2019. During this reporting period there were two civil incidents at nuclear licensed sites within Great Britain that met the Ministerial Reporting Criteria as defined within the Nuclear Installations (Dangerous Occurrences) Regulations 1965 and ONR guidance in relation to notifying and reporting incidents and events.

Stakeholder Engagement

- On 15 January ONR launched a four-week public consultation on its draft 2025 Strategy. Once agreed, the strategy will set our direction and priorities for the next five years. To support the public consultation we held a webinar for NGOs and other stakeholders in which our Chief Executive, Adriènne Kelbie, and Technical Director, Anthony Hart, gave an overview of the strategy and welcomed questions and comments. The strategy is due to be published in May 2020.
- In January, ONR achieved Level 3 Disability Confident (Leader) status, recognising our desire to put people first and create an environment in which everyone can thrive. The government-backed scheme encourages employers to think differently about disability and take action to improve how they recruit, retain and develop disabled people.
- In February, we announced the appointment of two new members to the ONR Board. Dr Janet Wilson took up the appointment on 1 April 2020 and Tracey Matthews will take up her appointment on 1 June 2020 – both appointments are for five year terms.
- In February more than 70 stakeholders involved in the transport of radioactive material attended a conference organised by ONR's Transport Competent Authority (TCA) team. The event provided a good opportunity for the TCA team to share their expectations on compliance with regulations governing the transport of radioactive material.

6. CONTACTS

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This document is issued by the Office for Nuclear Regulation (ONR). For further information about ONR, or to report inconsistencies or inaccuracies in this publication please visit http://www.onr.org.uk/feedback.htm.