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| ONR Site Report  Sellafield Ltd – Sellafield |

ONR Site Report

Sellafield Ltd - Sellafield

Report for period: 1 April 2023 – 30 September 2023

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Approved by: Superintending Inspector

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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 to members for the West Cumbria Sites Stakeholder Group (WCSSG) 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 (WCSSG) meetings where these reports are presented and will respond to any questions raised there. Any person wishing to inquire about matters covered by this report should contact ONR.

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List of abbrevations:

|  |  |
| --- | --- |
| AHF | Active Handling Facility |
| ALARP | As Low As Reasonably Practicable |
| BEP | Box Encapsulation Plant |
| BEPPS/DIF | Box Encapsulation Plant Product Store/Direct Import Facility |
| CA | Competent Authority |
| CDM | Construction (Design and Management) Regulations 2015 |
| CHS | Conventional Health and Safety |
| COMAH | Control Of Major Accident Hazard (Regulations 2015) |
| EA | Environment Agency |
| EOD | (Army) Explosives Ordinance Disposal |
| EPS | Encapsulation Product Store |
| FGFL | First Generation Finishing Line |
| FGMSP | First Generation Magnox Storage Pond |
| HALES | Highly Active Liquor Evaporation and Storage |
| HAST | Highly Active Storage Tank |
| HLWP | High Level Waste Plants |
| HSWA74 | Health and Safety at Work Act 1974 |
| ICT | Information and Communications Technology |
| ILW | Intermediate Level Waste |
| INES | International Nuclear Event Scale |
| IRR17 | Ionising Radiations Regulations 2017 |
| ISF | Interim Storage Facility |
| LAEMG | Low Active Effluent Management Group |
| LC | Licence Conditions |
| MDF | Mixed oxide Demonstration Facility |
| MEP | Magnox Encapsulation Plant |
| MER | Magnox East River |
| MHSWR99 | Management of Health and Safety at Work Regulations 1999 |
| MRF | Magnox Reprocessing Facility |
| MSSS | Magnox Swarf Storage Silo |
| NDA | Nuclear Decommissioning Authority |
| NIA65 | Nuclear Installation Act 1965 |
| OFSG | Oxide Fuel Storage Group |
| ONR | Office for Nuclear Regulation |
| OR | Operating Rule |
| PFCS | Pile Fuel Cladding Silo |
| PFSP | Pile Fuel Storage Pond |
| PPP | Programme and Project Partner |
| PSR | Periodic Safety Review |
| REPPIR | Radiation Emergency Preparedness and Public Information Regulations |
| SCIE | Sellafield Compliance, Inspection and Enforcement |
| SEMS | Sellafield Enterprise Management System |
| SEP2 | Silo Emptying Plant No2 |
| SFAIRP | So Far As Is Reasonably Practicable |
| SFM | Spent Fuel Management |
| SELLAFIELD LTDMS | Sellafield Ltd Management System |
| SMF | Silo Maintenance Facility |
| SNM | Special Nuclear Materials |
| SQEP | Suitably Qualified and Experienced Person |
| SSB | Self Shielded Boxes |
| THORP | Thermal Oxide Reprocessing Plant |
| WTR | Waste Transfer Route |
| WVP | Waste Vitrification Plant |

# Inspections

## Date(s) of Inspection

The ONR site inspectors made inspections on the following dates during the report period 1 April to 30 September 2023:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **April 2023** | **May 2023** | **June 2023** | **July 2023** | **August 2023** | **September 2023** |
| **Special Nuclear Materials (SNM)** | - | 11 | 14-15 | 6 | - | 13-14 |
| **Retrievals** | - | 23-24 | 27-28 | 27 | - | - |
| **Remediation** | - | - | - | 4-5 | - | 5-6 |
| **Spent Fuel Management (SFM)** | 12 | 10-11, 16-17 | 22 | 4-6 | 8-9, 29 | 12-13 |
| **Site Management** | - | - | 6-7 | - | - | 20 |
| **Corporate** |  | 18-19 |  | 20 |  | 5-6, 19-21 |

# Routine Matters

## Inspections

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

* the conditions attached by ONR to the nuclear site licence 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).

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 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 this period, routine inspections of Sellafield covered the following:

**Special Nuclear Materials Value Stream (SNM)**

During the reporting period, within the SNM value stream, we carried out three planned Licence Condition (LC) compliance inspections and one Ionising Radiations Regulations 2017 compliance inspection, covering:

* LC 28 – Examination, inspection, maintenance and testing
* LC32 – Accumulation of radioactive waste
* LC 35 – Decommissioning
* Ionising Radiations Regulations 2017

All the inspections were undertaken physically at the Sellafield site.

SNM North

Three planned compliance inspections were conducted at SNM North. The purpose of the inspection was to confirm Sellafield Ltd’s compliance to its corporate arrangements for LC28, 32 and 35.

For the inspections against LC 28, 32 and 35 we judged that compliance with the LCs was adequate and awarded Green (no formal action) inspection ratings.

In addition, a planned compliance inspection was conducted at SNM North to confirm Sellafield Ltd’s compliance to its corporate arrangements for Ionising Radiations Regulations 2017.

We judged that compliance with Ionising Radiations Regulations 2017 was adequate and awarded a Green (no formal action) inspection rating.

SNM South

Two planned compliance inspections were conducted at SNM South. The purpose of the inspections was to confirm Sellafield Ltd’s compliance to its corporate arrangements for LC28 and 35.

For the planned LC compliance inspections against LC28 and 35 we judged that compliance with the LCs was adequate and awarded Green (no formal action) inspection ratings.

**Retrievals Value Stream**

During the reporting period within the retrievals value stream, we carried out a planned Licence Condition (LC) compliance inspection, one reactive LC compliance inspection and one System Based Inspection (SBI) covering:

* LC10 – Training
* LC23 – Operating Rules
* LC24 – Operating Instructions
* LC26 – Control and supervision of operations
* LC28 – Examination, inspection, maintenance and testing

A fire (life safety) compliance inspection against the Regulatory Reform (Fire Safety) Order 2005 was also undertaken in MSSS.

Pile Fuel Cladding Silo (PFCS)

A reactive compliance inspection was undertaken at the PFCS on the Sellafield site. The purpose of this inspection was to confirm Sellafield Ltd’s compliance with its corporate arrangements for LC 10 and LC 26 in PFCS at the start of retrieval operations.

We judged that compliance with LC 10 and LC 26 met the legal standard and assigned green (no formal action) inspection ratings.

Legacy Ponds

An SBI was undertaken on the civil containment in legacy ponds.

We judged that compliance with all six standard licence conditions met the legal standard and assigned green (no formal action) inspection ratings. Our overall judgement was that civil containment in legacy ponds fulfils the requirements of the safety case.

Magnox Swarf Storage Silo (MSSS)

Planned compliance inspections were undertaken in the MSSS on the Sellafield site. The purpose of these inspections was to confirm Sellafield Ltd’s compliance with its corporate arrangements for LC 23, LC24 and LC28 specifically in relation to nuclear fire safety in MSSS.

A coincident inspection against the Regulatory Reform (Fire Safety) Order was also undertaken in MSSS.

For the LC compliance inspections, we judged that compliance with the LC met the legal standard and assigned green (no formal action) inspection ratings.

An inspection rating of amber (seek improvement) was appropriate against the Regulatory Reform (Fire Safety) Order as arrangements associated with protected staircases and fire damper maintenance did not offer the confidence that relevant good practice was being followed. An enforcement decision record resulted in the decision to raise a level 3 regulatory issue.

**Remediation Value Stream**

During the reporting period within the retrievals value stream, we carried out a SBI at the Thermal Oxide Reprocessing Plant (THORP) on the Sellafield site covering the ventilation system

The SBI was against the standard set of licence conditions for such inspections:

* 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
* LC 34 - Leakage and escape of radioactive material and radioactive waste

All of the LCs were judged as a Green (no formal action) rating.

ONR conducted an LC12 & 26 inspection on the Waste Monitoring and Compaction (WAMAC) Plant. The purpose of the inspection was to seek assurance that WAMAC had complied with Sellafield’s arrangements for compliance with nuclear site licence condition LC12 – Duly Authorised Person and LC26 – control and supervision.

ONR sampled the implementation of the arrangements for compliance with LCs 12 and 26 in WAMAC. The inspection involved discussions with the WAMAC Operations Manager, Duly Authorised Person (DAP), operators, maintainers and contractors, a review of compliance records, and sampling of information contained within electronic databases and other documentation.

ONR considered that Sellafield Ltd had demonstrated compliance with LC12 and LC26 in WAMAC and assigned a green rating for both LC12 and LC26 with no further regulatory action required and no regulatory issues raised.

**Spent Fuel Management Value Stream**

Spent Fuel Services (SFS)

Five inspections were undertaken at Spent Fuel Services, three LC compliance, one Ionising Radiations Regulations 2017 inspection, two themed inspections and one SBI.

The themed inspection, **disciplined operations**, was focussed on the Site Ion Exchange and Effluent Plant (SIXEP) and covered the following LCs:

* LC10 (Training)
* LC12 (Duly authorised and other suitably qualified and experienced persons)
* LC24 (Operating instructions)
* LC26 (Control and supervision of operations).

The SBI was undertaken at the Advanced Gas Reactor Storage Pond and covered the following LCs:

* LC10 (Training)
* LC23 (Operating rules)
* LC24 (Operating instructions)
* LC27 (Safety Mechanisms, devices and circuits)
* LC28 (Examination, inspection, maintenance and testing)
* LC34 (Leakage and escape of radioactive material and radioactive waste)

The two LC inspections were:

* LC22 (Modification or experiment on existing plant)
* LC25 (Operational records).

All inspections were given a rating of Green (no formal action).

Highly Active Liquor Evaporation and Storage (HALES) and High Level Waste Plants (HLWP)

Five inspections were undertaken at HALES/HLWP, four LC compliance, and one reduced scope SBI. These cover LCs:

* LC11 (Emergency arrangements)
* LC24 (Operating instructions)
* LC27 (Safety Mechanisms, devices and circuits)
* LC28 (Examination, inspection, maintenance and testing)
* LC32 – (Accumulation of radioactive waste)
* LC34 (Leakage and escape of radioactive material and radioactive waste)

At HALES the LC 11 planned compliance inspection judged that Sellafield Ltd had met the legal standard and assigned GREEN (no formal action) inspection rating. For the LC28 planned compliance inspection, ONR judged that Sellafield Ltd had shortfalls in the areas of asset management and maintenance backlogs and we assigned a rating of AMBER (seek improvement) against LC 28. A level 3 regulatory issue has also been raised to monitor the resolution of this shortfall, which is ongoing.

Also, at HALES, two additional planned inspections were conducted. One of these was conducted to confirm Sellafield Ltd’s compliance with its corporate arrangements for LC32. The second inspection was a reduced scope SBI to confirm the adequate implementation of the safety case for the HALES electrical and back-up systems and to confirm compliance with LCs 24, 27 and 28. For all the planned LC compliance inspections we judged that Sellafield Ltd had met the legal standard and assigned GREEN (no formal action) inspection ratings. We also judged that the HALES safety case for its electrical and back-up systems had been adequately implemented.

For the HLWP, one additional planned compliance inspection was conducted to confirm Sellafield Ltd’s compliance with its corporate arrangements for LC32. We judged that compliance with LC32 as met and assigned a green (no formal action) inspection rating.

Magnox Reprocessing Facility (MRF)

One planned compliance inspection was conducted at the MRF facility on the Sellafield site. The purpose of this inspection was to confirm Sellafield Ltd’s compliance with its corporate arrangements for the Confined Spaces Regulations 1997. We judged that compliance with this regulation as met and assigned a green (no formal action) inspection rating.

Effluent & Encapsulation Plants

We conducted a SBI on the nuclear ventilation system in the Magnox Encapsulation Plant (MEP), which sought assurance that MEP has adequately implemented the following Sellafield Licence Condition arrangements:

* LC 10 (training)
* LC23 (operating rules)
* LC24 (operating instructions)
* LC27 (safety mechanisms, devices and circuits)
* LC28 (examination, inspection, maintenance and testing)
* LC34 (leakage and escape of radioactive material and radioactive waste)

On the basis of the evidence sampled at the time of the inspection, ONR judged that the Magnox Encapsulation Plant (MEP) had adequately implemented the safety case for the ventilation system and the ventilation system currently fulfils its safety function. Noting the ONR guidance on inspection ratings, it was the inspector’s opinion that an inspection rating of Green (no formal action) was appropriate for compliance with LC10, 23, 24, 27, 28 and 34.

We also conducted an LC26 – control and supervision on the Low Activity Effluent Management Group (LAEMG).

ONR sampled the implementation of arrangements to ensure that operations which may affect safety are carried out under the control and supervision of SQEP appointed for that purpose. On the basis of the evidence sampled at the time of the inspection, ONR judged that, on balance, LAEMG had adequately implemented Sellafield Ltd's arrangements for LC 26.

**Site Management**

A planned compliance inspection was undertaken of the Sellafield Ltd level 1 safety demonstration exercise (Exercise Enigma). The purpose of the intervention was to evaluate the adequacy of existing arrangements to ensure compliance with LC11.

Sellafield Ltd demonstrated its emergency arrangements with an exercise involving a seismic event. The scenario was complex with multiple areas of play and provided a challenge to the responders.

Sellafield Ltd self-identified learning opportunities associated with the reliability of communication channels and the evacuation and triage of casualties from radiologically contaminated areas.

We identified important points for learning and consideration warranting an intervention rating of AMBER for LC 11 to seek improvement. Subsequently an enforcement letter was issued to Sellafield Ltd with actions relating to communication channels supporting emergency arrangements (see section 4). The letter described the need for a partial re-demonstration of the exercise to address the learning points raised. This was successfully re-demonstrated by Sellafield Ltd on 20 September, which will allow the closure of the associated level 3 regulatory issue.

**Corporate**

Our corporate inspection programme for the Sellafield site has two main areas of focus:

* Undertaking risk, hazard and regulatory intelligence informed corporate LC inspections. Since the basis of these inspections has changed this financial year (FY) this is explained further in this WCSSG report only. In previous FYs, LCs for corporate inspection were selected mainly based on ONR’s general expectation that all nuclear licensed sites will be subject to inspection such that each LC (with the exception of Licence Condition 1 “Interpretation”) is inspected at least once every five years. However, this general expectation has now been removed from ONR’s management system. In response, and in line with ONR’s revised management system guidance, corporate LC inspections this FY have been selected based on: a) the risks and hazards from the Sellafield site; and b) regulatory intelligence. In relation to regulatory intelligence, selection of LCs for corporate inspection has been informed by the areas assigned for Sellafield as “Enhanced Regulatory Attention” in ONR’s framework for deciding on the regulatory attention (for safety) for licensed sites (ONR-GEN-GD-013, “[Guidance on the Assignment of Dutyholder Attention Levels](https://www.onr.org.uk/operational/other/onr-gen-gd-013.pdf)” refers).
* Overseeing strategic enterprise change at Sellafield, including leadership and culture.

During the reporting period we carried out four planned corporate LC inspections covering:

* LC 10 (Training)
* LC 22 (Modification or experiment on existing plant)
* LC 25 (Operational records)
* LC 28 (Examination, inspection, maintenance and testing)

The LC 10 and the LC 25 corporate inspections were of wide scope. However, both included explicit consideration of organisational capability (for training and for information and records management respectively) since “Capable Organisation” is in Enhanced Regulatory Attention for Sellafield.

The scope of the LC 22 corporate inspection was targeted at the classification of modifications. This was done for several reasons, including gaining confidence to support ONR decisions on whether or not to set hold points related to specific Sellafield Ltd modifications.

The scope of the LC 28 corporate inspection was targeted at system engineering resources. This was because “Capable Organisation” is in Enhanced Regulatory Attention for Sellafield.

Both the LC 10 inspection and the LC 22 inspection were rated Green (no formal action).

The LC 25 inspection was rated Amber (seek improvement). This inspection took place at the end of the current reporting period and ONR’s Enforcement Management Model (EMM) is currently being applied.

The LC 28 inspection was rated Amber (seek improvement). ONR’s EMM was applied. The outcome in this case was regulatory advice which will be monitored by a level 3 regulatory issue.

During the reporting period, we also continued to monitor improvement actions being taken by Sellafield Ltd in response to previous corporate LC inspections.

Strategic Enterprise Change

Sellafield Ltd is implementing a portfolio of wide-ranging business change aligned to its enterprise strategy. During the reporting period we have continued to maintain oversight of several strategic enterprise changes including:

* Developing the required organisation capability to deliver the future operating plan;
* Alternative delivery models for Group Business Services (GBS) and the Procurement of Information, Communications, and Technology Services (PICTS);
* Continued development of Sellafield Ltd’s intelligent customer organisation for the Programme and Project Partners contracts;
* Development of the new Sellafield Enterprise Management System;and
* Roll-out of new digital tools to support operations delivery.

In all cases we are satisfied that Sellafield Ltd is controlling the changes in line with legal requirements including LC 36 - Organisational capability.

Over a number of years, we have engaged with Sellafield Ltd on trials at PFCS and at HLWP of new arrangements for work delivery. In the previous period, we reported that: a) Sellafield Ltd had decided to stop the trials and (with the exception of retaining some minor changes at HLWP) revert to extant site-wide arrangements for work delivery; and b) we were working with Sellafield Ltd to capture the learning from this project. In this period learning for both Sellafield Ltd and for ONR has been captured. This matter will therefore not be covered in future WCSSG reports.

During this period, we have conducted oversight of the regulatory findings which we identified during our assessments of: (1) safety leadership; and (2) the corporate governance of safety (we provided details of both assessments in our previous report to the WCSSG). We have met with the respective Sellafield Ltd process owners to secure their commitment to making the required improvements, and we are satisfied that each accepts the assessment findings and has put in place adequate plans to make the required improvements. We will continue to monitor progress and report upon this to the WCSSG when appropriate to do so.

Members of the public, who would like further information on ONR’s inspection activities during the reporting period, can view site Intervention Reports at [www.onr.org.uk/intervention-records](http://www.onr.org.uk./intervention-records) on our website [www.onr.org.uk](http://www.onr.org.uk).

Should you have any queries regarding our inspection activities, please email [contact@onr.gov.uk](mailto:contact@onr.gov.uk).

## Other Work

Special Nuclear Materials (SNM)

Following a readiness inspection during September 2023 ONR issued a Licence Instrument (see Section 4) to allow inerted retrievals from a legacy store. Those retrievals commenced shortly afterwards, which represents a reduction in risk and evidence to support closure of the extant level one regulatory issue (4931).

Remediation Value Stream - Decommissioning Projects

Our regulatory engagements continue with the key remediation projects. We are currently engaging on two active demonstrators (the alpha glovebox dismantler and the sort and segregate demonstrator). The glovebox demonstrator is to develop an efficient and effective capability to semi-remotely decommission alpha-active gloveboxes using laser cutting technology. The sort and segregate demonstrator is trialling an approach to separate the intermediate active wastes from plutonium contaminated material, for a more efficient management of legacy crates. Both these demonstrators will be subject to formal permissioning by ONR in 2023/2024 and 2024/2025. We are also engaging on other future demonstrators, also in cooperation with the ONR innovation cell.

Sellafield Ltd has made good progress with demolition of the pile 1 chimney by removing the filter gallery in 2014 and completing the diffuser demolition in 2021. This has resulted in the seismic withstand of the remaining chimney section being like that of an existing structure. The next step is the removal of the barrel section of the chimney, which will be subject to ONR permission. Early engagement on this work is now underway.

We are also continuing our engagements with Sellafield Ltd regarding the approach for floc removal from legacy tanks to longer term storage tanks. This plant modification proposal will be subject to ONR permissioning in 2024/2025.

Engagement has also resumed on a new major construction project, i.e. lightly shielded stores, for permissioning in the medium term.

Magnox Swarf Storage Silo (MSSS)

The MSSS facility is deemed to represent an intolerable risk and retrieval of the radioactive waste stored in its twenty-two silo compartments is a priority for high hazard and risk reduction on site. Sellafield Ltd has adopted a phased approach to waste retrievals, starting with retrieval of intermediate level radioactive miscellaneous beta gamma waste (MBGW) from compartment 10 (C10). Retrieval of bulk waste from MSSS is expected to take several decades to complete.

Sellafield Ltd continues to make good progress retrieving C10 MBGW since ONR permissioned the activity in April 2022. Commencement of retrieving all types of radioactive waste from MSSS original building and first extension, and third extension silo compartments is currently due to commence in 2025/26 financial year and around 2030 respectively.

In April 2023, ONR released the regulatory hold point for bringing the new nitrogen generation and storage plant (NG&SP) into service on C10. The new plant provides many functional and operational improvements over the existing plant. Operation of the new NG&SP is being expended in phases, eventually replacing the existing plant for all MSSS waste retrieval and excursion management.

ONR recognises the complexity of delivering hazard and risk reduction in MSSS and continues to engage with Sellafield Ltd to secure regulatory confidence in its delivery plans and that the overall risks to people on and off site remain reduced so far as is reasonably practicable. ONR continues to hold MSSS under significantly enhanced regulatory attention, attaching permissioning hold points to key activities on MSSS in accordance with our enabling regulation approach.

In June 2023, the compartment 8 cavity sump level increased above the level in the required operating instruction which is specified for the purposes of maintaining containment.

Preliminary enquiries were undertaken which concluded that it was unlikely that there was or could have been a breach of LC34 or a release of radioactivity approaching IRR2017 reporting limits. No further investigation or enforcement action was taken.

MSSS - Original Building leakage

In November 2019, Sellafield Ltd reported falling liquid levels from the MSSS original building (OB) waste storage silo compartments. This is described further in previous WCSSG reports.

The current MSSS OB leakage rate increased with time, from 0.5m3/month to 2.6 m3/day. As of October 2023, the OB liquor loss rate has remained relatively unchanged at around 2.3-2.5m3/day since April 2021. It is possible that the leakage will continue until retrieval of bulk waste from OB silos has been completed in several decades time.

ONR and the Environment Agency issued two joint letters to Sellafield Ltd outlining regulatory expectations for managing the risks arising from the MSSS OB leakage to ground. ONR raised a level two regulatory issue to monitor the company’s progress with managing the risks associated with the leakage. The issue has ten associated actions which Sellafield Ltd is required to address within appropriate timescales.

In April 2023, ONR issued our regulatory position statement on the MSSS OB leakage to ground. The statement, which was informed by specialist inspectors’ assessments, concluded that Sellafield Ltd had provided sufficient evidence from their completed and planned programme of work to support the claim that the risks from the OB leakage are reduced as low as reasonably practicable (ALARP). We judged that Sellafield Ltd’s response to the level two regulatory issue were sufficient to support closure of the issue.

We judged that Sellafield Ltd had provided sufficient evidence to support the claim that the MSSS OB leakage is compliant with LC 34, leakage and escape of radioactive material and radioactive waste. In forming this judgement, we recognised the potential for leakage to continue for several decades until the bulk of waste is retrieved from the OB silos. Notwithstanding current compliance, Sellafield Ltd has a programme of work associated with MSSS leakage that is anticipated to support continued compliance with LC34, in accordance with goal-setting regulation. Inspectors identified some shortfalls against LC34 compliance associated with the future programme of work, which will be monitored by lower-tier regulatory issues.

The regulatory position statement is published on ONR’s website.

Facilities to support waste retrievals from legacy silos

To support waste retrievals from the legacy silos, MSSS and PFCS, Sellafield Ltd needs to progress the construction of several new build facilities and implement modifications to existing facilities. ONR continues to maintain regulatory focus in these areas to ensure we have the necessary regulatory confidence that Sellafield Ltd has the key enablers in place to safely store the waste retrieved from the legacy silos and that the overall risks to people on and off site remain reduced so far as is reasonably practicable.

Box Encapsulation Plant Product Store/Direct Import Facility (BEPPS-DIF)

BEPPS-DIF is a critical enabler for hazard and risk reduction, storing the filled waste packages retrieved from the Silos and other legacy facilities. The final preparations of the facility to enable the commencement of active commissioning are well advanced, subject to ONR’s permission, the facility will then be able to receive material from PFCS and the Waste Packaging and Encapsulation Plant (WPEP) via DIF. Transition from active commissioning to active operations and the import of waste packages via Box Encapsulation Plant (BEP) will be the subject of future regulatory hold-points. After a period of active commissioning, we expect Sellafield Ltd will seek ONR’s permission to commence active operations for BEPPS-DIF in early 2024.

Pile Fuel Cladding Silo (PFCS) radioactive waste retrieval programme

In August 2023 Sellafield Ltd commenced early retrievals from compartment 5. Waste was removed and placed into a 3m3 box, which when full will be transported to new storage facilities that meet modern safety standards pending long term disposal in a Geological Disposal Facility.

Work to remove the waste from the compartments is estimated to take around 20 years to complete. Once waste is removed it will be transferred and stored in modern facilities on site.

ONR’s regulatory focus will continue in this area to secure regulatory confidence in Sellafield Ltd’s delivery plans and that the overall risks to people on and off site remain reduced so far as is reasonably practicable.

Conventional Health and Safety (CHS)/Site Safety

Sellafield Ltd is in Enhanced Regulatory Attention for CHS. As such, CHS regulatory work over the last twelve months has focussed on areas of Enhanced Regulatory Attention, such as life fire safety improvements and maturity of conventional safety risk profiling. Formal enforcement was required across a range of risks, including fire life safety and asbestos management, which has been described in the previous WCSSG report. Sellafield Ltd has developed and is implementing a fire life safety improvement plan and action is being taken across site to improve the management of asbestos. In addition, a site wide safety improvement plan is being developed to address risk profiling and prioritisation with the aim of improving health and safety performance across key risk areas.

In March 2023, Sellafield Ltd was prosecuted for a fall from height incident and fined £400,000. Key safety messages from ONR’s investigation were presented to Sellafield Ltd’s senior leaders and safety advisors. Further interventions have now taken place and more engagements are planned to evaluate improvements to work planning, task risk assessment and other corporate learning from the incident.

Control Of Major Accident Hazards (COMAH)

The Sellafield site is an upper tier Control of Major Accident Hazards (COMAH) site. ONR as part of the Competent Authority (CA) has conducted a range of interventions focused upon the facility with the most significant off-site risk. This work includes the verification of alarm system installation; review of emergency response arrangements and tactical information plans; sampling effectiveness of major accident hazard control measures across conventional health and safety, process safety, human factors and electrical control and instrumentation disciplines. Shortfalls identified have been addressed through an improvement plan.

# 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.

Matters and events of particular note during the period were:

Failure to meet Key Decommissioning Milestone (KDM) FGMSP M14

In March 2023, Sellafield Ltd notified ONR that it would not complete KDM FGMSP M14 (Export of first zeolite skip from FGMSP to the Interim Storage Facility (ISF)) by the declared date of 31 March 2023. This notification included a change record explaining the reasons for the delay, supporting safety justification and revised date for completion of the KDM.

KDMs are established under a part of Sellafield Ltd’s LC35 arrangements. The purpose of the KDMs is to drive prioritised and systematic hazard and risk reduction across the site’s decommissioning programmes and are the licensee’s commitment to achieving its mission of accelerated high hazard and risk reduction (HHRR). Hence, ONR consider them important for driving and monitoring progress against this mission.

From the information gathered during our assessment regarding missed KDM FGMSP M14, we were of the opinion that Sellafield Ltd’s health and safety arrangements did not meet the requirements of Regulation 5 of the Management of Health and Safety at Work Regulations 1999.

Consequently, an Enforcement Letter (ONR-EL-23-009 SEL77827R) was sent requiring Sellafield Ltd to provide ONR with a sufficiently underpinned and fully resourced programme to deliver KDM FGMSP M14 and address the associated compliance gap with Regulation 5 of the Management of Health and Safety Regulations 1999. This is due for completion at the end of October 2023 and progress continues to be monitored against this through a level 3 regulatory issue.

SNM (South)

On 7 July 2023 on the Sellafield Product and Residue Store Retreatment Plant (SRP) project, a concrete gang had been deployed to pour concrete on the south-west corner of the shear wall. The concrete gang were positioned on level 9 on the internal scaffold and the concrete was being poured via the use of a 43-metre concrete pump. During the repositioning of the tremie pipe it is believed that the pipe became snagged upon a section of reinforcement within the wall, the pipe moved towards the internal face of the scaffold and struck an operative (IP) on the front of his safety helmet. The operative lost stability and temporarily lost consciousness.

We undertook preliminary enquiries and concluded that based on the prevailing information, it was not proportionate to take enforcement action, although it was followed up as part of routine regulatory inspections. We also judged that, in accordance with ONR’s Enforcement Policy Statement, it would be disproportionate to carry out an investigation in this case.

Spent Fuel Services

We undertook preliminary enquiries following an event at the SIXEP where a minor fire resulted in a building evacuation. No workers injured and the fire was quickly extinguished. We were satisfied that the event did not meet ONR’s investigation criteria, however we did raise a level 4 regulatory issue in relation to risk assessments.

Highly Active Liquor Evaporation and Storage (HALES)

We undertook preliminary enquiries following an incident where the examination on part of the HALES steam line wasn’t carried out as required by the written scheme of examination in accordance with Regulation 9(1) of the Pressure Systems Safety Regulations 2000 (PSSR). The preliminary enquiries concluded this to be a minor breach of the Regulation and not a significant breach of a relevant statutory provision or serious breach of health and safety law and we were therefore satisfied that the ONR criteria for formal investigation was not met. This incident will be followed up by ONR as part of normal business through the ONR incident notification process.

Site Management and Infrastructure

In August 2023 an active handling facility cross-travel lifting beam became wedged in position during a lifting operation. The beam was recovered by Sellafield Ltd and National Nuclear Laboratory Ltd utilising arrangements made under the nuclear site licence. The event was followed up by two nuclear safety inspectors. Sellafield Ltd have removed cranes of the same design from service until checks and corrective actions have been completed (INF-3220).

In September 2023 scaffolding contractors mistakenly removed crowd barriers and temporary fencing that had been put in place to prevent access to an area of fixed contamination. No workers were harmed, and the barriers are now back in place. This event is being followed-up by an ONR radiological protection specialist (INF-3331).

In September 2023 a sample was incorrectly accepted into analytical services. This event is being followed-up by the site inspector (INF-3338).

# Regulatory Activity

ONR 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 take a range of enforcement actions, to include issuing an Enforcement Notice.

**Table 1: Licence Instruments and Enforcement Notices Issued by ONR during this period**

|  |  |  |  |
| --- | --- | --- | --- |
| Date | Type | Ref. No. | Description |
| 4 April 2023 | Enforcement Letter | ONR-EL-22-044  SEL77820R | THORP MASFE SBI (Amber). \*note this refers to an amber rated inspection that took place at the end of the previous reporting period and is described in the previous WCSSG report. |
| 3 May 2023 | Licence Instrument | LI-542 - Withdrawal of Approval 49 which was granted under Condition 36(1) of Schedule 2 attached to Nuclear Site Licence No. 31B on 21 June 1985. | This LI granted approval for the Fuel Element Preparation Rooms in Calder Hall to be used as Fuel Element Stores. These rooms are no longer used for the storage of fuel elements and so Approval 49 is redundant and hence has now been Withdrawn by LI 542. |
| 22 June 2023 | Enforcement Letter | ONR-EL-23-009  SEL77827R | Shortfalls against the Management of Health and Safety at Work Regulations 1999 (Regulation 5) and the resulting failure to meet Key Decommissioning Milestone (KDM) FGMSP M14 |
| 18 July 2023 | Enforcement Letter | ONR-EL-23-010 | An enforcement letter was issued to Sellafield Ltd with actions relating to communication channels supporting emergency arrangements as observed during Exercise Enigma. |
| 21 September 2023 | Licence Instrument | LI-546  SEL77799N | Agreement to commence the operation of the Store 17 inerted phase retrieval within SNM North |

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

# News from ONR

For the latest news and information from ONR, please read and subscribe to our regular email newsletter ‘ONR News’ at [www.onr.org.uk/onrnews](http://www.onr.org.uk/onrnews).

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