Office for Nuclear Regulation (ONR)

Site Report for Sellafield

West Cumbria Sites Stakeholder Group (WCSSG)

Report period 01 October 2021 - 31 March 2022

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 every six months to members of 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 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 Abbreviations

ALARP	As Low As Reasonably Practicable
BEP	Box Encapsulation Plant
BEPPS-DIF	Box Encapsulation Plant Product Store-Direct Import Facility
C10	Compartment 10
CDM 2015	Construction (Design and Management) Regulations 2015
CA	Competent Authority
CNI	Chief Nuclear Inspector
COMAH	Control Of Major Accident Hazard (Regulations 2015)
COSHH	Control of Substances Hazardous to Health (Regulations 2002)
EDS	Engineering Drum Stores
EDT	Effluent Distribution Tank
EPS	Engineered Product Store
FGFL	First Generation Finishing Line
FGMSP	First Generation Magnox Storage Pond
HALES	Highly Active Liquor Evaporation and Storage
HAVS	Hand Arm Vibration Syndrome
HLWP	High Level Waste Plants
HPCP	Hold Point Control Plan
HSWA74	Health and Safety at Work Act 1974
INES	International Nuclear Event Scale
IRR17	Ionising Radiations Regulations 2017
ISF	Interim Storage Facility
LC	Licence Condition
LI	Licence Instrument
LOLER	Lifting Operations and Lifting Equipment Regulations 1998
MBGWS	Miscellaneous Beta Gamma Waste Store
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
NIA65	Nuclear Installation Act 1965
OB	Original Building
ONR	Office for Nuclear Regulation

PFCS	Pile Fuel Cladding Silo
PFSP	Pile Fuel Storage Pond
PSR	Periodic Safety Review
REPPIR	Radiation (Emergency Preparedness and Public Information) Regulations 2017
RIDDOR	Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013
RRFSO	Regulatory Reform (Fire Safety) Order 2005
RST	Redundant Settling Tank
SBI	System Based Inspection
SFM	Spent Fuel Management
SNM	Special Nuclear Materials
SRP	Sellafield (Product and Residue) Retreatment Plant
SSB	Self Shielded Box
THORP	Thermal Oxide Reprocessing Plant
WAGR	Windscale Advanced Gas-Cooled Reactor
WAMAC	Waste Monitoring and Compaction
WPEP	Waste Packaging and Encapsulation Plant
WTC	Waste Treatment Complex
WTR	Waste Treatment Route

1. Inspections

1.1. Dates of Inspection

The ONR site inspectors made inspections on the following dates during the report period 01 October 2021 – 31 March 2022.

	October 2021	November 2021	December 2021	January 2022	February 2022	March 2022
Special Nuclear Materials	13-14	09-10	07-08	-	09-10	-
Retrievals	5	9	7	-	8	8
Remediation	27	10-11	8 – 9,15-16	27	22-23	9-10,16, 24
Spent Fuel Management (SFM)	5-7, 12-14	10-11, 17	1-2, 7-8	12-13	8-10, 23	9-10
Site Management	19, 26-27	16	-	18-20	10-11	1-3, 22-23
Corporate	-	17-19	-	-	-	30-31

2. Routine Matters

2.1. 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 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 the reporting period, we judged the arrangements made and implemented by the site in response to safety requirements to be satisfactory in the areas inspected. Where improvements have been identified, Sellafield Limited has made a commitment

to address those issues, and ONR inspectors will closely monitor progress during future site inspections. Where necessary, we will take formal regulatory enforcement action to ensure that appropriate remedial measures are implemented to reasonably practicable timescales. 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 on our website www.onr.org.uk. Should you have any queries regarding our inspection activities, please email contact@onr.gov.uk.

Chief Nuclear Inspector Themed Inspection on Management of Ageing Assets

Our Chief Executive and Chief Nuclear Inspector (CE/CNI), Mark Foy, recognised ageing management as a regulatory priority for the nuclear estate in his 2019/20 annual report on Great Britain's nuclear industry and reiterated that it would continue as a priority in his 2020/21 Annual Report on Great Britain's Nuclear Industry.

The following five nuclear licenced sites were prioritised:

- Aldermaston and Burghfield
- Sizewell B
- Devonport
- Hinkley Point A
- Sellafield

We initially requested that the licensees of each of the above sites complete a self-assessment against a selection of ONR specified criteria derived from the following four themes:

- Theme 1 - Effective strategies for the characterisation, monitoring, trending and analysis of ageing - at facility, system and component level are present.
- Theme 2 - Commitment to ensure that the right level of organisational capability to sustain specialist safety case and other technical capability to substantiate on-going safe operation.
- Theme 3 - Methods to identify and manage obsolescence in facilities for their operation design life and any potential lifetime extensions.
- Theme 4 - Sustained focus and commitment to ongoing investment in plant, people and processes concerned with ageing management.

Following the self-assessment exercise by Sellafield Limited, a programme of ONR inspections commenced to look at the management of ageing assets across the site. This inspection programme is continuing and once completed the findings will be reported on the ONR website.

In addition to the programme of inspections to look at the management of ageing assets, our inspectors have also completed a series of other inspections during the reporting period at Sellafield. Further details are below.

Special Nuclear Materials Value Stream (SNM)

During the reporting period within the SNM value stream, we carried out six planned Licence Condition (LC) compliance inspections, and one System Based Inspection (SBI) covering:

- LC 6 – Documents, records, authorities and certificates
- LC 10 – Training
- LC 12 – Duly authorised and other suitable qualified and experienced persons
- LC 24 – Operating instructions
- LC 26 – Control and supervision of operations
- LC 28 – Examination, inspection, maintenance and testing
- SBI - Ventilation Systems.

The purpose of these inspections was to confirm Sellafield Limited's compliance with its corporate arrangements for LC 6, LC 10, LC 12, LC 24, LC 26 and LC 28. The LC 6 inspection was undertaken jointly with an ONR Safeguards inspector.

For all the planned LC compliance inspections, we judged that compliance with the LC was adequate, and awarded Green (no formal action) inspection ratings.

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, and LC 34 - leakage and escape of radioactive material and radioactive waste. We judged that compliance with all the six standard licence conditions was met and awarded green (no formal action) inspection ratings. Our overall judgement was that the ventilation systems adequately fulfil the requirements of the safety case.

Retrievals Value Stream

During the reporting period within the retrievals value stream, we carried out ten planned LC compliance inspections, one Regulatory Reform (Fire Safety) Order 2005 (RRFSO 2005) compliance inspection and two SBIs covering:

- LC 6 – Documents, records, authorities and certificates
- LC 10 – Training
- LC 12 – Duly authorised and other suitably qualified and experienced persons
- LC 23 – Operating rules
- LC 24 – Operating Instructions
- LC 25 – Operational records
- LC 26 – Control and supervision of operations
- LC 32 – Accumulation of radioactive waste
- LC 34 – Leakage and escape of radioactive material and radioactive waste
- RRFSO 2005 – Regulatory Reform (Fire Safety) Order 2005
- SBI – Essential service (x2)

During the reporting period one LC compliance inspection was cancelled due to an increase in COVID-19 cases and self-isolations on site. This inspection will be undertaken during the next financial year.

First Generation Magnox Storage Pond (FGMSP)

ONR conducted a planned SBI of the essential services system, which included steam, water, air, electricity and the fire safety systems, at the First Generation Magnox Storage Pond (FGMSP) complex on the Sellafield Site. During this inspection compliance against the Regulatory Reform (Fire Safety) Order 2005 (RRFSO 2005) was also considered.

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, and LC 34 - leakage and escape of radioactive material and radioactive waste. For this system we judged that a rating against LC 34 was not applicable. For the remaining five licence conditions we judged compliance was met and awarded green (no formal action) inspection ratings. Our overall judgement was that the essential services systems adequately fulfil the requirements of the safety case.

During this inspection shortfalls were identified in the extent of the fire alarm coverage, system obsolescence and adequacy of regular and systematic examination, inspection, maintenance and testing of the fire system. We therefore rated compliance against RRFSO 2005 within FGMSP as Amber (seek improvement). An enforcement letter (ONR-EL-21-038) has been issued to seek the necessary improvements and this is being monitored via a level 3 regulatory issue.

Magnox Swarf Storage Facility (MSSS)

Four planned compliance inspections were undertaken at the Magnox Swarf Storage Silo (MSSS) facility on the Sellafield Site. The purpose of these inspections was to confirm Sellafield Limited's compliance with its corporate arrangements for LC 10, LC 12, LC 24 and LC 26 in MSSS.

For all the planned LC compliance inspections, we judged that compliance with the LC was adequate, and awarded Green (no formal action) inspection ratings.

Pile Fuel Storage Pond (PFSP)

Three planned compliance inspections were undertaken at the Pile Fuel Storage Pond (PFSP) facility on the Sellafield Site. The purpose of these inspections was to confirm Sellafield Limited's compliance with its corporate arrangements for LC 6, LC 25, and LC 32 in PFSP.

For all the planned LC compliance inspections, we judged that compliance with the LC was adequate, and awarded Green (no formal action) inspection ratings.

Redundant Settling Tank (RST) and Effluent Distribution Tank (EDT)

ONR conducted a planned SBI of the essential services system, which included steam, water, air and electricity at the Redundant Settling Tank (RST) and Effluent Distribution Tank (EDT) facilities on the Sellafield Site.

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, and LC 34 - leakage and escape of radioactive material and radioactive waste. We judged that compliance with all the six standard licence conditions was met and awarded green (no formal action) inspection ratings. Our overall judgement was that the essential services systems adequately fulfil the requirements of the safety case.

In addition, three planned compliance inspections were undertaken at the RST facility. The purpose of these inspections was to confirm Sellafield Limited's compliance with its corporate arrangements for LC 23, LC 26 and LC 34.

For all the planned LC compliance inspections, we judged that compliance with the LC was adequate, and awarded Green (no formal action) inspection ratings.

Remediation Value Stream

During the reporting period within the remediation value stream, we carried out 13 planned LC compliance inspections, one control of asbestos regulations 2012 compliance inspection and two SBIs covering:

- LC10 – Training
- LC11 – Emergency arrangements
- LC12 – Duly Authorised and other suitably qualified and experienced persons
- LC22 – Modification or experiment on existing plant
- LC24 – Operating instructions
- LC26 – Control and supervision of operations
- 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
- LC35 – Decommissioning
- LC36 – Organisational capability
- Control of Asbestos Regulations 2012, Regulation 4
- SBI – Shield Doors
- SBI – Fire Protection System

Alpha Operating Unit

A planned compliance inspection was conducted across the alpha operating unit on the Sellafield site. The purpose of this inspection was to confirm Sellafield Limited's compliance with its corporate arrangements for LC 22 across the alpha operating unit.

For the planned LC compliance inspection, we judged that compliance with LC 22 was adequate, and awarded a Green (no formal action) inspection rating.

Engineering Drum Stores (EDS) and Waste Treatment Complex (WTC)

A planned compliance inspection was conducted at the Engineering Drum Stores (EDS) and Waste Treatment Complex (WTC) within the alpha operating unit on the Sellafield site. The purpose of this inspection was to confirm Sellafield Limited's compliance with its corporate arrangements for LC 11 across EDS and WTC.

For the planned LC compliance inspection, we judged that compliance with LC 11 was adequate, and awarded a Green (no formal action) inspection rating.

Calder Hall

A planned compliance inspection was conducted at Calder Hall on the Sellafield site. The purpose of this inspection was to confirm Sellafield Limited's compliance with its corporate arrangements for LC 27, LC 28, LC 34 and also for compliance with the Control of Asbestos Regulations 2012, Regulation 4.

For all the planned LC compliance inspections, we judged that compliance with the LC was adequate, and awarded Green (no formal action) inspection ratings. We also judged that compliance with the Control of Asbestos Regulations 2012, Regulation 4 was adequate, and awarded a Green (no formal action) inspection rating.

In addition, the inspection sought evidence under Theme 1 of the Chief Nuclear Inspector's themed inspection on ageing management. We judged that for Calder Hall, effective strategies for characterisation, monitoring, trending, and analysis of ageing at facility, system and component level were present.

Windscale Advanced Gas Cooled Reactor (WAGR) Spent Fuel Store

A planned compliance inspection was conducted at the WAGR Spent Fuel Store on the Sellafield site. The purpose of this inspection was to confirm Sellafield Limited's compliance with its corporate arrangements for LC 32.

For the planned LC compliance inspection, we judged that compliance with LC 32 was adequate, and awarded a Green (no formal action) inspection rating.

Waste Operating Unit - Old Decontamination Centre

A planned compliance inspection was conducted at the old decontamination centre within the waste operating unit on the Sellafield site. The purpose of this inspection was to confirm Sellafield Limited's compliance with its corporate arrangements for LC 35.

For the planned LC compliance inspection, we judged that compliance with LC 35 was adequate, and awarded a Green (no formal action) inspection rating.

Thermal Oxide Reprocessing Plant (THORP)

Three planned compliance inspections were conducted at the Thermal Oxide Reprocessing Plant (THORP) on the Sellafield site. The purpose of these inspections was to confirm Sellafield Limited's compliance with its corporate arrangements for LC 10, LC 12, LC 24, LC 26, LC 32 and LC 36.

The LCs 10, 12, 24 and 26 compliance inspections were conducted together under the theme of "disciplined operations".

For all the planned LC compliance inspections, we judged that compliance with the LC was adequate, and awarded Green (no formal action) inspection ratings.

ONR also conducted two planned SBIs on the shield doors and the fire protection systems within the THORP facility.

The two SBIs were 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, and LC 34 - leakage and escape of radioactive material and radioactive waste. We judged that for both SBIs, compliance with all the six standard licence conditions were met and awarded green (no formal action) inspection ratings. Our overall judgement was that the shield doors and fire protection systems adequately fulfil the requirements of the safety case.

Spent Fuel Management (SFM) Value Stream

During the reporting period within the Spent Fuel Management (SFM) value stream, we carried out 18 planned LC compliance inspections, one Lifting Operations and Lifting Equipment Regulations 1998 (LOLER 98), Regulations 8 and 9 compliance inspection, one Ionising Radiations Regulations 2017 (IRR17) compliance inspection and three SBIs covering:

- LC6 – Documents, records, authorities and certificates
- LC7 – Incidents on site
- LC11 – Emergency arrangements
- LC12 – Duly authorised and other suitably qualified and experienced persons
- LC15 – Periodic review
- LC17 – Management Systems
- LC23 – Operating rules
- LC24 – Operating instructions
- LC25 – Operational records
- LC26 – Control and supervision of operations
- LC28 – Examination, inspection, maintenance and testing
- LC35 – Decommissioning
- LOLER 98 - Lifting Operations and Lifting Equipment Regulations 1998 Regulations 8 and 9
- IRR17 – Ionising Radiations Regulations 2017

- SBI – Ventilation systems
- SBI – Fire protection systems
- SBI – Flask movement systems and drop loads.

Highly Active Liquor Evaporation and Storage (HALES)

Two planned compliance inspections were conducted at the Highly Active Liquor Evaporation and Storage (HALES) facility on the Sellafield site. The purpose of these inspections was to confirm Sellafield Limited's compliance with its corporate arrangements for LC 11, LC 15 and LC 25.

For the LC 11 and LC 25 compliance inspections, we judged that compliance with these LCs was adequate, and awarded Green (no formal action) inspection ratings.

During the LC 15 compliance inspection, we identified shortfalls relating to the management of the issues identified during the periodic safety review process. We also identified shortfalls in the application of the system health review processes which are used to provide oversight of plant condition. We judged that compliance was not adequate and rated compliance with LC 15 as Amber (seek improvement) rating. An enforcement letter (ONR-EL-21-030) has been issued to seek the necessary improvements and this is being monitored via a level 3 regulatory issue.

High Level Waste Plants (HLWP)

Three planned compliance inspections were conducted at the High Level Waste Plants (HLWP) facility on the Sellafield site.

The purpose of these inspections was to confirm Sellafield Limited's compliance with its corporate arrangements for LC 11, LC 12, LC 25 and LC 26.

For all the planned LC compliance inspections, we judged that compliance with the LC was adequate, and awarded Green (no formal action) inspection ratings.

ONR also conducted a planned SBI on a ventilation system in the Waste Vitrification Plant.

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, and LC 34 - leakage and escape of radioactive material and radioactive waste. We judged that compliance with all the six standard licence conditions was met and awarded green (no formal action) inspection ratings. Our overall judgement was that the ventilation system adequately fulfils the requirements of the safety case.

Magnox Reprocessing Facility (MRF)

Three planned compliance inspections were conducted at the Magnox Reprocessing Facility (MRF) facility on the Sellafield site.

The purpose of these inspections was to confirm Sellafield Limited's compliance with its corporate arrangements for LC 6, LC 25, LC 35 and also for compliance with the Ionising Radiations Regulations 2017 (IRR17).

For all the planned LC compliance inspections, we judged that compliance with the LC was adequate, and awarded Green (no formal action) inspection ratings. We also judged that compliance with IRR17 was adequate and awarded a Green (no formal action) inspection rating.

Magnox East River (MER)

ONR conducted two planned SBIs on the fire protection systems and the flask movement systems within the Magnox East River (MER) facilities on the Sellafield site.

The SBIs were against the standard set of Licence Conditions for such inspections: 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. We judged that for both SBIs, compliance with all the six standard licence conditions was met and awarded green (no formal action) inspection ratings. Our overall judgement was that the fire protection systems and the flask movement systems both adequately fulfilled the requirements of the safety case.

Fuel Storage (formally the oxide fuel storage group)

Three planned compliance inspections were conducted within the fuel storage area on the Sellafield site. The purpose of these inspections was to confirm Sellafield Limited's compliance with its corporate arrangements for LC 7, LC 17, LC 23, LC 24, LC 25, LC 28 and also for compliance with the Lifting Operations and Lifting Equipment Regulations 1998 (LOLER 98), Regulations 8 and 9.

The LCs 23, 24, 28 and LOLER 98 compliance inspections were conducted together under the theme of "dropped loads".

For all the planned LC compliance inspections, we judged that compliance with the LC was adequate and awarded Green (no formal action) inspection ratings. We also judged that compliance with LOLER 98, Regulations 8 and 9 was adequate, and awarded Green (no formal action) inspection ratings.

Site Management

We carried out 11 LC compliance inspections, two SBIs, one Control Of Substances Hazardous to Health (COSHH) 2002 compliance inspection and an assessment of the site's emergency exercise covering:

- LC 10 - Training
- LC 11 – Emergency arrangements
- LC 22 – Modification or experiment on existing plant

- LC 23 – Operating rules
- LC 24 – Operating instructions
- LC 28 – Examination, inspection, maintenance and testing
- LC 32 – Accumulation of radioactive waste
- LC 35 – Decommissioning
- SBI – Site electrical distribution system.
- SBI – Ventilation system
- COSHH 2002 - Control Of Substances Hazardous to Health
- Sellafield Limited approved security plan

Analytical Services

ONR conducted a planned SBI of the ventilation system within the Analytical Services facility at the Sellafield site.

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, and LC 34 - leakage and escape of radioactive material and radioactive waste. We judged that compliance with all the six standard licence conditions was met and awarded green (no formal action) inspection ratings. Our overall judgement was that the ventilation system adequately fulfils the requirements of the safety case.

A planned compliance inspection was also undertaken in the Analytical Services facility. The purpose of the inspection was to confirm Sellafield Limited's compliance with its corporate arrangements for LC 23, 24 and 28 particularly in relation to nuclear fire safety.

We judged that compliance with LC 24 and LC 28 was adequate and awarded green (no formal action) inspection ratings. No rating was awarded to LC 23 as the nuclear fire safety aspects were undertaken during the SBI of the nuclear ventilation system.

A planned inspection was also undertaken to confirm Sellafield Limited's compliance with the COSHH regulations 2002 within the Analytical Services facility.

During this inspection shortfalls were identified in the assessment of the risk created by work involving hazardous substances to health. We therefore rated compliance against COSHH 2002 within Analytical Services as Amber (seek improvement). An enforcement letter (ONR-EL-21-024) has been issued to seek the necessary improvements and this is being monitored via a level 3 regulatory issue.

Flask Maintenance Facility

A planned compliance inspection was undertaken in the Flask Maintenance Facility at the Sellafield site. The purpose of the inspection was to confirm Sellafield Limited's compliance with its corporate arrangements for LC 32 and LC 35.

We judged that compliance with LC32 and LC35 was adequate and awarded green (no formal action) inspection ratings.

Security and Resilience

Two planned compliance inspections were undertaken across the Sellafield site. The purpose of these interventions was to confirm Sellafield Limited's compliance with its corporate arrangements for LC 11 and the delivery of the Sellafield Limited approved security plan.

The first compliance inspection was an observation of Exercise SIERRA LIMA 1, a Sellafield Limited Level 1 combined safety and security demonstration exercise.

We judged that compliance with LC 11 and the approved security plan was adequate and awarded a green (no formal action) inspection rating.

The second compliance inspection was to confirm Sellafield Limited's compliance with its corporate arrangements for LC 11.

We judged that compliance with LC 11 was adequate and awarded a green (no formal action) inspection rating.

In addition, a planned intervention of Sellafield Limited's training arrangements was undertaken as part of the main site command facility's operational readiness and command transition strategy. The purpose of this intervention was to confirm Sellafield Limited's compliance with its corporate arrangements for LC 10 and the Sellafield Limited approved security plan.

We judged that compliance with LC 10 and the approved security plan was adequate and awarded green (no formal action) inspection ratings.

Infrastructure

ONR conducted a planned SBI of the Sellafield site electrical distribution 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, and LC 34 - leakage and escape of radioactive material and radioactive waste. For this system we judged that a rating against LC 34 was not applicable. For the remaining five licence conditions we judged that compliance was met and awarded green (no formal action) inspection ratings. Our overall judgement was that the site electrical distribution system adequately fulfils the requirements of the safety case.

A planned compliance inspection was also undertaken of the water system at the Sellafield site. The purpose of the inspection was to confirm Sellafield Limited's compliance to its corporate arrangements for LC 22 and LC 28.

We judged that compliance with LC 22 and LC 28 was adequate and awarded a green (no formal action) inspection rating.

A planned compliance inspection was also undertaken of the railways at the Sellafield site. The purpose of the inspection was to confirm Sellafield Limited's compliance with its corporate arrangements for LC 24 and LC 28.

We judged that compliance with LC 24 and LC 28 was adequate and awarded green (no formal action) inspection ratings.

Corporate

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

- Undertaking a programme of corporate LC inspections to examine the adequacy of the corporate arrangements that Sellafield Limited has made to comply with its nuclear site licence, and sample the corporate/site-wide implementation of these arrangements; and
- Overseeing strategic change at Sellafield, including leadership and culture.

Corporate LC Inspections

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

- LC 6 - Documents, records, authorities and certificates
- LC 14 - Safety documentation

We judged that the arrangements made under LC 6 and LC 14 were adequate and awarded green (no formal action) inspection ratings.

During the reporting period, we continued to monitor improvement actions being taken by Sellafield Limited in response to previous corporate LC inspections. A specific example of this monitoring has now led to ONR granting Licence Instrument (LI) 538 and LI 539 (see Section 4). The need for these LIs arose from the corporate LC 13 (Nuclear safety committee) inspection described in the report to the WCSSG covering the period from 1 October 2020 to 31 March 2021.

Strategic Change

Sellafield Limited 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 a number of strategic enterprise changes. We have been monitoring Sellafield Limited's proposals for alternative delivery models for group business services and the procurement of information, communications and technology services. We have maintained oversight of the continued development of Sellafield Limited's intelligent customer organisation for the Programme and Project Partners contracts, and the establishment of an improved intelligent customer capability for the procurement of manufactured products. We have also continued to monitor the development of the new Sellafield Enterprise Management System. In all cases we are satisfied that Sellafield Limited is adequately controlling the changes in line with legal requirements including LC 36 - organisational capability.

We continue to engage with Sellafield Limited on trials that are ongoing at PFCS and at HLWP of new arrangements for work delivery. Having reflected on these trials,

Sellafield Limited has now decided to reduce the scope of the new work delivery arrangements to cover only isolations (electrical and mechanical) and task risk assessment. We will continue to monitor the trials until we are satisfied that Sellafield Limited has made and implemented adequate work delivery arrangements at both PFCS and at HLWP, and we will then permission the start of site-wide roll out of the new arrangements. Further information will be provided in our next report to the WCSSG.

During this reporting period we followed up on an employee engagement survey Sellafield Limited undertook in October 2021, particularly the equality, diversity and inclusion aspects. We are satisfied that Sellafield Limited has responded adequately to the findings of this survey and has put in place appropriate improvement actions. We continue to maintain contact with relevant staff networks at the site.

2.2. Other Work

Periodic Safety Review (PSR)

Sellafield Limited's Periodic Safety Review (PSR) programme has continued recovery from the challenges caused by the pandemic. There have been some minor exceptions, but ONR is satisfied that these issues have been managed safely at local level.

ONR has continued to engage with Sellafield Limited over identified opportunities for improvements within the PSR programme and is continuing to monitor and support delivery of improvements identified during earlier PSR inspections.

During the reporting period, ONR carried one planned LC 15 (periodic review) compliance inspection at the HALES facility within the SFM Value stream. The outcome of this inspection is discussed above.

ONR continued a 'deep dive' PSR engagement of a storage pond within the SFM value stream. This activity will continue into the next calendar year with an objective to improve confidence in site PSR activities and arrangements.

Chemical Management

ONR continues to monitor Sellafield Limited's arrangements for management of hazardous chemicals on site. Significant progress has been made with the milestones set out in the improvement plan. It is anticipated that the regulatory issue will be managed to closure this year.

Asbestos Management

Asbestos management across the Sellafield site remains a regulatory priority for ONR. Sellafield Limited has developed an asbestos strategy and action plan which is now being implemented across site. Steady progress is being made and it is anticipated that asbestos management will become a more routine 'business as usual' task for Sellafield this year, due to the progress that has been made across the site.

Managing Health and Safety in Construction

ONR continues to monitor Sellafield Limited's corporate wide construction management improvement programme and we are expecting Sellafield to meet their improvement milestones this financial year. With construction/demolition projects underway to support hazard and risk reduction work on site, ONR conventional health and safety inspectors have provided advice and been involved in the release of hold points for several projects, including B6 chimney, SRP tower crane installation and BEP crane installation.

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 are being addressed through an improvement plan and our interventions for 2022/23 will focus on verification to ensure the improvements identified are implemented.

Sellafield Limited and Cumbria County Council emergency plans have recently merged the COMAH regulations 2015 and the Radiation (Emergency Preparedness and Public Information) Regulations (REPPIR) 2017 requirements. To ensure the resultant plans meet the specific COMAH requirements, ONR, as part of the CA, observed an on-site chemical response emergency exercise at the inactive tank farm. ONR judges that Sellafield Limited adequately tested their emergency response arrangements to a chemical spill.

Permissioning Activity

Our permissioning process continues to monitor Sellafield Limited's planned submissions in accordance with its Hold Point Control Plan (HPCP), which forms part of its arrangements under LC 22. This process ensures we have regulatory oversight and control over Sellafield Limited's modification activities with potential for highest risk. Within this reporting period, we have released two hold points on modifications to various plants on Sellafield site. These include:

- HPCP 533: Waste Packaging and Encapsulation Plant (WPEP) to the Engineering Drum Store (EDS)
- HPCP 512: Wet Inlet Facility receipt of the Module of Interest

Sellafield Limited requested ONR's agreement under arrangements made under LC22(1) (HPCP 533) for the creation of a new waste transfer route from the WPEP to the EDS.

Previously, drums were transferred from WPEP into the Engineered Product Store (EPS) for interim storage pending disposal. However, this waste transfer route has

been suspended to prioritise receipt of waste arising from the legacy ponds and silos retrievals programme. Following suspension of this route, WPEP drums have been stored within the WPEP buffer store pending availability of the Box Encapsulation Plant Product Store/Direct Import Facility (BEPPS/DIF).

Sellafield Limited identified that delays to commissioning of the new waste transfer route into BEPPS/DIF will constrain the remaining capacity within the WPEP Store. Sellafield Limited has reserved capacity within the WPEP Store to facilitate completion of the Magnox Operating Programme with the resultant consequence that there is insufficient capacity to continue to support the Floc Retrievals Programme which could lead to increased risk of a loss of containment in that facility.

Sellafield Limited considered the ALARP option to mitigate the risk and judged that the safest long-term option is to continue to empty the tanks; however, in order to make space for the storage in WPEP, it would transfer a limited population of the lowest dose-rate drums currently in WPEP to EDS, which is a new waste route.

ONR has assessed Sellafield's safety case associated with this transfer in the areas of radiological protection, human factors, mechanical engineering, transport and nuclear liabilities. ONR judged that the safety case has adequately demonstrated that the risks are ALARP and released this hold point in December 2021.

Projects

Site Infrastructure

Analytical Services

We continue to engage with Sellafield Limited over the need to secure long-term provision of Analytical Services for the Sellafield Limited site. This is necessary to support the safety of ongoing operations and, specifically, hazard and risk reduction activities across the site. The Replacement Analytical Project (RAP) continues to progress the detailed design phase of the project and is working toward securing government approval for the full business case.

We have also continued to engage with Sellafield Limited to regulate asset care improvements and the reduction of legacy waste presently stored within the existing Analytical Services facility.

Although this work has been challenging due to COVID-19 restrictions, Sellafield Limited has continued to make significant progress in asset care improvement work and repackaging of legacy wastes from within this facility.

Special Nuclear Materials (SNM)

Through our three Level 1 regulatory issues (highest level of issue) we continue to engage and influence the delivery of hazard and risk reduction activities regarding the Sellafield Limited SNM 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 improvements, Sellafield Limited continues to make satisfactory progress on the electrical and containment upgrade tasks within the SNM (North) complex.

During the reporting period Sellafield Limited has continued to make significant progress with regard to the previously permissioned activities for retrieval and repackaging of acute risk SNM packages.

Significantly, within the reporting period, we have assessed and permissioned the commencement of visual inspection activities within another SNM legacy store. Specifically, the inspection of this inventory will enable Sellafield Limited to:

- Provide accurate information regarding the current SNM package condition and on-going storage conditions.
- Inform its judgement on the requirement for over-packing of the SNM packages, and the longer-term storage and retrieval programme.

The on-going construction of the Sellafield Product and Residue Store Retreatment Plant (SRP) is fundamental to the success of the Future State Programme; and forms part of our continued engagement and influence at Sellafield Limited to ensure the timely implementation of capabilities required for the safe longer term storage of SNM inventory that has been consolidated from Dounreay to Sellafield.

Although progress on the above projects has been challenging due to COVID-19 restrictions, we have been encouraged that Sellafield Limited has continued to make significant progress.

Remediation Value Stream

Decommissioning Projects

Our regulatory engagements continue on key remediation projects. We are currently engaging on a proposed glovebox laser cutting active demonstrator. This facility is to develop an efficient and effective capability to semi-remotely decommission alpha-active gloveboxes on the Sellafield site. We successfully granted permission for the skip size reduction active demonstrator in July 2021, and will be looking for Sellafield Limited to utilise the learning from the previous project onto this one. We are intending to start our assessment in May 2022 subject to receiving an adequate safety case.

Sellafield Limited continues to make good progress with demolition of the pile 1 chimney by removing the filter gallery in 2014 and completing the diffuser demolition in 2021 (all were subject to regulatory permissions), resulting in the seismic withstand of the remaining chimney section being similar to that of an existing structure. The next step is the removal of the barrel section of the chimney, which will be carried out by means of a spider crane solution. This will be subject to ONR permission and engagement is currently underway.

Retrievals Value Stream

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 continues the assessment of the Interim Storage Facility (ISF) and Self-Shielded Box (SSB) project. Technical engagements continue to discuss additional waste streams for the ISF, and whether modifications are necessary for the additional materials.

ONR is also engaging with Sellafield Limited regarding a reliable supply of suitable and sufficient SSBs to support the timely retrieval of legacy waste. As part of this engagement, a planned compliance inspection was conducted at the SSB Suppliers; Westinghouse (main contractor) and Goodwin Steel Castings (subcontractor).

The purpose of this intervention was to confirm Westinghouse and Goodwin Steel Castings compliance with Sellafield Limited's arrangements for LC 17 - management systems.

We judged that compliance with LC 17 was adequate and awarded a green (no formal action) inspection rating.

Four SSBs have now been delivered to the Sellafield site and inactive commissioning using the SSBs has completed in ISF and is ongoing in the FGMSP Export Facility.

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 progressed the regulatory assessment of Sellafield Limited's proposal to deploy divers into two bays. However, Sellafield Limited postponed the deployment of divers when greater than expected radiation dose levels within the bays were identified. Sellafield Limited is reviewing its approach and scope of work, and ONR's regulatory assessment will continue once they have completed their review and proposed a revised methodology. ONR continues to engage on the wider strategy discussions regarding PFSP interim and end states including delaying isolation and dewatering of the bays in 2022/23. ONR is working closely with the Environment Agency to ensure regulatory alignment.

Magnox Swarf Storage Silo (MSSS)

The MSSS is deemed to represent an intolerable risk and retrieval of the radioactive waste stored in its 22 silo compartments is a priority for high hazard and risk reduction on site. Sellafield Limited has adopted a phased approach to waste retrievals, starting

with retrieval of intermediate level radioactive miscellaneous beta gamma waste (MBGW) from compartment 10 (C10).

ONR placed three regulatory hold points on retrieval of MBGW from C10. Two of those hold points have been released, with the final hold point, hold point 41b (HP41b), attached to commencement of retrieval operations.

On 29 October 2021, Sellafield Limited wrote to ONR seeking permission to commence retrieval of MBGW from MSSS compartment 10. ONR's assessment of Sellafield Limited's safety case and supporting documentation is ongoing and expected to conclude in early April 2022, with the decision on granting permission taken immediately afterwards.

Start of bulk waste retrievals from the MSSS original building and first extension silo compartments is currently due to commence in early 2024. ONR recognises the complexity of delivering hazard and risk reduction in MSSS and continues to engage with Sellafield Limited 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.

In November 2019, Sellafield Limited reported falling liquid levels from the MSSS original building (OB) waste storage compartments. The most probable source of the leak is from historic leak paths to ground from cracks within the original MSSS building. There was a previous leak of such a nature at the same building in the 1970s. The liquid loss rate is still relatively slow but has increased with time, from 0.5m^3/month to 2.6 m^3/day. ,The OB liquor loss rate has remained relatively unchanged at around 2.3-2.5m^3/day since April 2021.

There are currently assessed to be no radiological consequences for the public or workforce as a result of this issue. Ground modelling and underpinning research concludes that the higher activity radioactive species are bound close to the facility. Migration of significant contamination through the ground is predicted to take decades and any risk to the environment and public would be very low and over an extended timescale. This exceeds the time it will take to remove and remediate the MSSS facility.

Based on ground modelling and underpinning research, there is judged to be no risk to public water supply resulting from this leak. We accept Sellafield Limited's current judgement on this matter.

The leak was categorised against the International Nuclear and Radiological Event Scale (INES) as a Level 2, incident event on a seven-point scale. In view of the continued leak to ground, we required Sellafield Limited to review the leak INES categorisation to determine if it approached level 3, serious incident. The company concluded that the current rating remains valid with significant margin to level 3. The UK INES officer, an ONR inspector, accepts Sellafield Limited's judgement. We will continue to monitor Sellafield Limited's monitoring of the leak INES rating as part of our routine MSSS OB leak-related engagements.

ONR has raised a Level 2 regulatory issue to monitor Sellafield Limited's progress with managing the risks associated with the leakage. The issue has ten associated actions which Sellafield Limited is required to address within appropriate timescales.

Sellafield Limited has developed a programme of work to address regulators' concerns and ONR specialist inspectors have engaged with the company to monitor progress, provide feedback on regulatory expectations, and where necessary offer regulatory advice and guidance.

Sufficient evidence has been provided by Sellafield Limited to close one of the actions. Two more actions associated with civil structural integrity are expected to be closed shortly. Responses to three more actions are currently being assessed by ONR with responses to the other five actions expected later in the year.

The MSSS facility does not meet modern safety standards and ONR wants to see the waste removed and placed in modern, safe storage as quickly and safely as possible. Once the inventory is safely retrieved, the building will be demolished and any necessary ground remediation will take place.

Facilities to support waste retrievals from legacy silos

To support waste retrievals from the legacy silos, MSSS and PFCS, Sellafield Limited needs to progress the construction of several new build facilities and implement modifications to existing facilities. ONR continues to maintain regulatory focus in this area to ensure we have the necessary regulatory confidence that Sellafield Limited has the key enablers in place to safely store the waste retrieved from the legacy silos.

The Box Encapsulation Plant (BEP) and Box Encapsulation Plant Product Store and Direct Import Facility (BEPPS-DIF) are facilities currently under construction. Whilst COVID-19 has impacted construction activities and the supporting supply chain, ONR is satisfied that Sellafield Limited continues to demonstrate good progress towards bringing these plants operational. Subject to ONR permission, Sellafield Limited expects BEPPS-DIF to be available to support PFCS waste retrievals in September 2022. This date aligns with when PFCS will be in a position to commence export of waste packages to BEPPS-DIF.

Waste retrieved from the legacy silos is placed in stainless steel $3m^3$ boxes containers to enable on-site storage. ONR has undertaken targeted engagement with both Sellafield Limited and the manufacturer to gain confidence in the quality assurance arrangements in place and to assure ourselves that there is an adequate process to manage any boxes manufactured outside the specification.

In September 2021, ONR received the safety submission and request for agreement to commence active commissioning and operation of the Waste Transfer Route (WTR) and Encapsulated Product Store 3 (EPS3) for the receipt, processing and storage of MSSS compartment 10 MBGW waste packages. ONR has now completed the regulatory assessment work and in February 2022 issued the Licence Instrument (LI 537) granting permission for Sellafield Limited to commence active commissioning

and operation. This is a key step prior to ONR providing agreement to commence retrieval of MBGW from MSSS compartment 10.

ONR's regulatory focus will continue in this area to ensure we have the necessary regulatory confidence in these aspects of the Sellafield Limited hazard and risk reduction programmes.

Pile Fuel Cladding Silo (PFCS) radioactive waste retrieval programme

PFCS is deemed to represent an intolerable risk and retrieval of the radioactive waste stored in its six silo compartments is a priority to achieve high hazard and risk reduction on the site. Sellafield Limited has adopted a two-stage approach. The first stage – 'Early Retrievals' - involves accessing only compartment 5 of the silo and removing waste through a high-level penetration in the compartment wall above the level of the waste. This first stage will enable Sellafield Limited to gain sufficient knowledge, experience and confidence in the waste retrieval approach to implement the second stage – 'Full Retrievals' – which will enable waste retrievals from the remaining five compartments.

Sellafield Limited requested permission to commence active commissioning of the waste retrievals equipment installed on PFCS compartment 5 in October 2020. COVID-19 restrictions and issues identified by Sellafield Limited during inactive commissioning have meant that on-site preparatory activities have been delayed. However, ONR has now completed all assessment and inspection activities to inform the regulatory decision and issued the Licence Instrument (LI 536) granting agreement for Sellafield Limited to commence active commissioning in March 2022.

ONR's regulatory focus will continue in this area, to build confidence that the plant operates as expected and to understand the learning received from these first retrieval operations.

3. Non-Routine Matters

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

Matters and events of particular note during the period were:

Corporate (Site wide)

ONR is satisfied that Sellafield Limited has complied with a site wide Improvement Notice served in December 2020 following a number of electrical safety incidents across the site. Sellafield Limited has made significant improvements to the training and supervision of staff who carry out electrical work. In addition, improvements have been made in the use of electrical tools and test equipment, electrical instructions and to the electrical safety rules and guidance.

On 25 March 2021, a contractor was leaving a welfare dome and fell down the steps sustaining two broken kneecaps and a broken ankle. The injuries were reported to us by Sellafield Limited as specified injuries under Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013 (RIDDOR). The circumstances of this event met our investigation criteria and an investigation into the event was commenced.

Early in our investigation we identified that the steps did not comply with BS EN 12811-1:2003, a British and European standard related to scaffolding performance requirements or technical guidance note TG20:13 'Guide to Good Practice for Tube and Fitting Scaffolding' produced by the National Access and Scaffolding Confederation (NASC). An enforcement letter was issued to Sellafield Limited requiring the steps to be made safe and to seek confirmation that similar scaffolding steps were compliant with these standards. We are satisfied that the requirements of the enforcement letter have now been complied with.

We have now concluded our investigation and identified shortfalls in compliance with the Work at Height Regulations 2005 and the Construction (Design and Management) Regulations 2015 (CDM 2015). As a result, two further enforcement letters were issued requiring:

- Sellafield Limited to review and, if necessary, revise the arrangements for CDM 2015 compliance and the management of temporary works within Estates (ONR-EL-21-028).
- The scaffolding contractor, Enigma Industrial Services Limited, to make improvements to the competency/training of its staff and to ensure that work equipment, specifically scaffolding, is adequately inspected by competent persons after installation and at suitable intervals thereafter (ONR-EL-21-029).

Spent Fuel Management (SFM) Value Stream

Magnox Reprocessing Facility (MRF)

We undertook preliminary enquiries in response to an incident where a Sellafield employee fell from a scaffolding ladder and injured their back whilst undertaking work in the Low Active Cell at the Magnox Reprocessing Facility (MRF). The accident was notified as a specified injury under RIDDOR 2013. The accident met the ONR criteria for investigation due to the nature of the injuries sustained and a formal investigation is currently ongoing.

Although the final enforcement action has not yet been determined, from the information gathered so far, ONR has judged that Sellafield has failed to produce a suitable and sufficient risk assessment for work within the cells at MRF.

Following application of the ONR enforcement management model, we have issued an Improvement Notice under the Management of Health and Safety at Work Regulations 1999 to achieve the necessary improvements in the arrangements for producing suitable and sufficient risk assessments for work within cells at MRF.

In October 2021, there was a fire in the Thermal Denitration plant at Magnox Reprocessing Facility. The plant responded in accordance with the emergency instruction, evacuated the building and extinguished the fire. We were satisfied that there were no nuclear safety issues, no injuries were sustained and there were no radiological consequences observed.

A Fire Safety Assessor from Cumbria Fire Service was dispatched to plant and determined the cause of the fire to be a faulty light fitting. In the period since the incident, the plant has been repaired and returned safely back to service.

Highly Active Liquor Evaporation and Storage (HALES)

On 17 August 2021, ONR were formally notified of an event in the Highly Active Liquor Evaporation & Storage (HALES) facility where the removal of a redundant structure had opened access to previously inaccessible areas around the vent duct. This single-walled duct carries contaminated ventilation extract from the cell and vessel ventilation system for the 'old side' highly active storage tanks (HASTs). A subsequent inspection confirmed the presence of some previously unseen perforations in the duct which have the potential for a release of radioactivity.

Sellafield Limited implemented temporary measures promptly to manage the immediate situation. The permanent repair is expected to be completed by the end of the year. We are content that this is appropriate and are tracking this as part of an existing regulatory issue.

In addition, Sellafield Limited has undertaken a spill assessment of the potential leak and concluded that, at the postulated leak rate, the limits set out in Column 5 of Part 1 of Schedule 7 to the IRRs 2017 would be exceeded after 4.5 years. Sellafield Limited has also concluded that there is evidence to support a leak and, based upon previous remote visual inspections of this area, that the leak could have been ongoing for more than 4.5 years.

ONR has undertaken a high level review of the technical validity of the leak assessment and concluded that although the assumptions appeared conservative, reasonable consideration had been made of the mechanisms of leakage and that there were no obvious errors.

As a consequence, this event met the ministerial reporting criteria d - Abnormal occurrences leading to a confirmed release to atmosphere or spillage of a radioactive substance which exceeds or is expected to exceed, the limits set out in Column 5 of Part 1 of Schedule 7 to the IRRs 2017.

In accordance with the ONR Enforcement Management Model consideration was given to undertaking a formal investigation. However, it was judged that this would not be proportionate given there was no impact on the worker or public safety and that it would be extremely difficult to underpin any historic compliance shortfalls due to the period of time that has elapsed and the uncertainties in the occurrence, development and behaviour of the perforations.

Retrievals Value Stream

Magnox Swarf Storage Silo (MSSS)

During the reporting period Sellafield Limited reported a damp patch on the external wall of the Magnox Swarf Storage Silo (MSSS) facility on the Sellafield Site. Although the damp patch has been identified as a release of radioactivity, the amount is significantly below the statutory reporting limits in Column 5 of Part 1 of Schedule 7 of the Ionising Radiation Regulations 2017 and there has been no impact on worker or public safety. ONR judges that Sellafield Limited has responded in an appropriate manner and is taking the necessary steps to identify the source of this radioactivity and restore appropriate radiological controls of the facility. ONR continues to monitor the ongoing investigation.

There has been an increase in the baseline temperatures seen in the third extension within the Magnox Swarf Storage Silos (MSSS). Sellafield limited is planning to provide a chiller to supplement the existing Mk IV cooler as the solution to heat management in the third extension. (Currently the heat exchanger for the Mk IV cooler system is not providing a cooling function as there is no coolant on the shell side).

ONR has been monitoring the implementation of this chiller via a regulatory issue. However, as the chiller is unlikely to be operational until after commencement of the summer period of seasonal temperature increase, ONR issued an enforcement letter (ONR-EL-21-045) for Sellafield to demonstrate that it is doing everything reasonably practicable to manage the temperatures in the third extension. Sellafield Limited has now responded to this enforcement letter and ONR is considering the response.

Previously ONR had identified shortfalls in training at FGMSP and the wider retrievals value stream which was being monitored via a regulatory issue. However, during the reporting period, delays in delivering the refresher training for providing a wet response to a loss of containment has challenged the Minimum Safety Manning Levels (MSML) across the Retrievals value stream. ONR therefore issued an enforcement letter (ONR-EL-21-042) to deliver the required training to ensure that the MSMLs are met.

First Generation Magnox Storage Pond (FGMSP)

On the 9 February 2022 there was an incident during inactive commissioning of the FGMSP Export Facility, in support of the Self Shielded Box (SSB) project. In attempting to transfer the empty SSB underneath the empty skip the SSB impacted the skip. We conducted preliminary enquiries and judged that this incident did not meet the ONR investigation criteria. However, we continue to monitor the activities to recover the SSB and skip to reinstate the facility back into operations as part of our routine permissioning activities.

Remediation Value Stream

Waste Monitoring and Compaction (WAMAC)

ONR undertook preliminary enquiries following an incident where an operative received an electric shock after operating the light switch at WAMAC. The individual was off work for greater than seven consecutive days and the injury was therefore reportable under RIDDOR Reg. 4(2).

Whilst ONR judged that the investigation criteria was not met, an enforcement letter (ONR-EL-21-027) was issued requiring Sellafield Limited to replace the light switch with one suitable for the local environmental conditions. In addition, Sellafield Limited was also required to review other electrical components in the immediate vicinity to confirm their suitability for the local environmental conditions. Although the light switch has been replaced, the wider review is ongoing and is being monitored through a regulatory issue.

Following notification of a shortfall in the coverage of the criticality incident detection and alarm system (CIDAS) at the Waste Treatment Complex, ONR undertook preliminary enquiries. We judged that the investigation criteria were not met and no further regulatory action was deemed appropriate. Notwithstanding this, ONR is monitoring the remedial work being undertaken to address this shortfall as part of routine business.

Joint Intervention with the Environment Agency

During the reporting period, we supported the Environment Agency in a series of themed pond inspections at Fuel Storage; we supported inspections at the Advanced Gas Reactor Storage Pond, the First Generation Oxide Fuel Storage Pond and the Wet Inlet Facility.

4. 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, up to issuing an Enforcement Notice.

During the reporting period we have issued four Licence instruments, one enforcement notice and eight enforcement letters, the details of which are all discussed above and summarised in the table below :-

Table 1: Licence Instruments and Enforcement Notices Issued by ONR during the reporting period

Date	Type	Ref. No.	Description
12 October 2021	Enforcement Letter	ONR-EL-21-024	Analytical Services – Control of Substances Hazardous to Health (COSHH) 2002.
4 November 2021	Enforcement Letter	ONR-EL-21-027	WAMAC - Electricity at Work Regulations 1989 and Management of Health and Safety Regulations 1999
5 November 2021	Enforcement Letter	ONR-EL-21-028	Sellafield - The Construction (Design and Management) Regulations 2015, Regulations 4, 11 and 13
5 November 2021	Enforcement Letter	ONR-EL-21-029	Enigma - The Work at Height Regulations 2005, Regulations 8 and 12.
8 November 2021	Enforcement Letter	ONR-EL-21-030	Hales - Licence Condition 15
3 February 2022	Enforcement Letter	ONR-EL-21-038	FGMSP - Regulatory Reform (Fire Safety) Order 2005
4 February 2022	Enforcement Letter	ONR-EL-21-042	Retrievals value stream - Licence Condition 10(1)
28 February 2022	Enforcement Letter	ONR-EL-21-045	Magnox Swarf Storage Silo - Licence Condition 34(1)
25 February 2022	Agreement	LI 536	Agreement to commence active commissioning of the Pile Fuel Cladding Silos (PFCS) 'Early plant and equipment and transition into 'early retrievals' operations – implementation of a retrievals capability'
7 February 2022	Agreement	LI 537	Agreement to commence active commissioning of EPS/WTR and EPS3 for the receipt, processing and storage of raw waste from MSSS compartment 10 MBGW
28 March 2022	Approval	LI 538	Approval of alteration or amendment to Sellafield Site Nuclear Safety Committee's Terms of Reference

28 March 2022	Approval	LI 539	Approval of alteration or amendment to Sellafield Site Nuclear Safety Committee's arrangements for obtaining consideration, or advice on urgent safety proposals
31/03/22	Improvement Notice	ONR-IN-21-005	Improvement Notice - Sellafield Limited – Magnox Reprocessing Facility (MRF) – Fall from scaffolding ladder – Management of Health and Safety Regulations 1999

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

5. News from ONR

For the latest news and information from the Office for Nuclear Regulation, please read and subscribe to our regular email newsletter 'ONR News' at www.onr.org.uk/onrnews

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