



Office for Nuclear Regulation (ONR) Six Monthly Site Report for Sellafield Site West Cumbria Sites Stakeholder Group (WCSSG)

Covering the period – 01 April– 30 September 2020



Foreword

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

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

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List of Abbreviations

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
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
REPIIR	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
SL	Sellafield Ltd
SLMS	Sellafield Limited 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

1 INSPECTIONS**1.1 DATES OF INSPECTION**

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

Period: 01 April 2020– 31 September 2020	April 2020	May 2020	June 2020	July 2020	August 2020	September 2020
Special Nuclear Materials	21 & 24			14-15		8
Retrievals Value Stream		28		15	20	29
Remediation Value Stream			17	8, 13 & 16		7 & 10
Remediation: THORP				15-16		9-10
Spent Fuel Management (SFM) - HALES and HLWP		4-7		20-24	4-7	
SFM - Effluent and Encapsulation		1, 15 & 20		28 & 30	6	
SFM- Magnox		12, 14 & 19				
SFM - OFSG			30			23-24
Site Infrastructure	20-23	26-29		14-17		9-10

2. ROUTINE MATTERS

2.1 Inspections

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

- The conditions attached by ONR to nuclear site licences granted under the Nuclear Installations Act 1965 (NIA65) (as amended);
- The Energy Act 2013;
- The Health and Safety at Work etc. Act 1974 (HSWA74); and
- Regulations made under HSWA74, for example the Ionising Radiations Regulations 2017 (IRR17) and the Management of Health and Safety at Work Regulations 1999 (MHSWR99).

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

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

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

It should be noted that due to the COVID-19 pandemic some inspections were carried out remotely; then as restrictions eased, the inspections were undertaken via attendance at site by the ONR site inspectors. Throughout this period, the ONR site inspectors maintained weekly telecon meetings with their counterparts within SL to monitor the impact of COVID-19 and confirm that the safety of the onsite facilities was being maintained. In addition, the ONR superintending inspector and Deputy Chief Inspector also held weekly telecon meetings with the SL senior management team.

The Licence Conditions and inspection themes selected by ONR during this period were determined by the operational situation at Sellafield together with the potential safety or security challenges at the time or in the event of a future worsening of the situation.

In accordance with the UK Government requirements, ONR also monitored the COVID-19 controls implemented on the Sellafield site and was satisfied that suitable and sufficient measures were put in place to protect the workers and the public.

Due to the COVID-19 challenge ONR undertook no System Based Inspection (SBIs) during this period, however it is expected that they will recommence in the next period.

Special Nuclear Materials Value Stream (SNM)

During this period within the SNM value stream, ONR carried out four planned Licence Condition (LC) compliance inspections, covering:

- LC 10 – Training
- LC 12 – Duly authorised and other suitably qualified and experienced persons
- LC 26 – Control and supervision of operations
- LC 28 – Examination, inspection, maintenance and testing

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

Due to COVID-19 restrictions, the April compliance inspections against LC 10, 12 & 28 were undertaken remotely. The other inspections were undertaken physically at the Sellafield site.

For all the planned LC compliance inspections, ONR judged that compliance with LC 10, 12, 26 and 28 was adequate, and awarded Green (no formal action) inspection ratings. Likewise, ONR judged that compliance with IRR17 was adequate, and awarded a Green (no formal action) inspection rating. During the LC 26 inspection ONR also gained assurance of SNM's compliance with Corporate arrangements for the restarting of a SNM Finishing line.

Retrievals Value Stream

During this period within the Retrievals value stream, ONR carried out four planned LC compliance inspections, covering:

- LC 10 – Training
- LC 11 – Emergency arrangements
- LC 12 – Duly authorised and other suitably qualified and experienced persons
- LC 17 – Management Systems
- LC 23 – Operating Rules
- LC 26 – Control and supervision of operations
- LC 28 – Examination, inspection, maintenance and testing
- LC 36 – Organisational capability

Due to COVID-19 restrictions, the compliance inspections within the Magnox Swarf Storage Silo (MSSS), the Pile Fuel Cladding Silo (PFCS) and the LC36 conducted across the retrievals value stream were undertaken remotely. The other inspections within the First Generation Magnox Storage Pond (FGMSP) were undertaken physically at the Sellafield site.

Magnox Swarf Storage Silo (MSSS)

A planned compliance inspection was conducted at the MSSS facility. The purpose of the inspection was to confirm SL's compliance with its corporate arrangements for LC 10, 12, and 28.

ONR judged that compliance with LC 10, 12 and 28 was adequate and awarded Green (no formal action) inspection ratings. In addition, ONR gained assurance that the MSSS facility was compliant with SL's arrangements for LC 11, 17, 23, 26 and 36, and no matters were identified that would require formal follow-up.

First Generation Magnox Storage Pond (FGMSP)

A planned compliance inspection was conducted at the FGMSP facility on the Sellafield Site. The purpose of the inspection was to confirm SL's compliance to its corporate arrangements for LC 10, 12 and 26.

For all the planned LC compliance inspections, ONR judged that compliance with LC 10, 12 and 26 was adequate and awarded Green (no formal action) inspection ratings.

Pile Fuel Cladding Silo (PFCS)

A planned compliance inspection was conducted at the PFCS facility on the Sellafield Site. The purpose of the inspection was to confirm SL's compliance to its corporate arrangements for LC 10, 11, and 12.

ONR judged that compliance with LC 10, 11 and 12 was adequate and awarded Green (no formal action) inspection ratings. ONR also gained assurance that the PFCS facility was compliant with SL's arrangements for LC 26 and LC 36, and no matters were identified that would require formal follow-up.

Value Stream Wide

A planned compliance inspection was also conducted across the Retrievals value stream on the Sellafield Site. The purpose of the inspection was to confirm SL's compliance to its corporate arrangements for LC 36.

ONR judged that compliance with LC 36 was adequate and awarded a Green (no formal action) inspection rating.

Remediation Value Stream

During this period within the Remediation value stream, ONR carried out four planned LC compliance inspections, covering:

- LC 7 – Incidents on the Site
- LC 10 – Training
- LC 11 – Emergency Arrangements
- LC 12 – Duly Authorised and other suitably qualified and experienced persons
- LC 23 – Operating rules
- LC 24 – Operating instructions
- LC 26 – Control and supervision of operations
- LC 28 – Examination, inspection, maintenance and testing

All inspections were undertaken physically at the Sellafield site.

Active Handling Facility (AHF)

A planned compliance inspection was conducted at the AHF on the Sellafield Site. The purpose of the inspection was to confirm SL's compliance to its corporate arrangements for LC 10, 12, 26 and 28.

ONR judged that compliance with LC 10, 12, 26 and 28 was adequate and awarded Green (no formal action) inspection ratings.

Mixed Oxide Demonstration Facility (MDF)

A planned compliance inspection was conducted at the MDF on the Sellafield Site. The purpose of the inspection was to confirm SL's compliance to its corporate arrangements for LC 10, 11, 12, 23, 24 and 26.

ONR judged that compliance with LC 10, 11, 12, 23, 24 and 26 was adequate and awarded Green (no formal action) inspection ratings.

Thermal Oxide Reprocessing Plant (THORP)

Two planned compliance inspections were conducted at THORP on the Sellafield Site. The purpose of the inspection was to confirm SL's compliance to its corporate arrangements for LC 7, 12, 26 and 28.

ONR judged that compliance with LC 7, 12, 26 and 28 was adequate and awarded Green (no formal action) inspection ratings.

Spent Fuel Management Value Stream (SFM)

During this period within the SFM value stream, ONR carried out six planned LC compliance inspections, covering:

- LC 10 – Training
- LC 11 – Emergency arrangements
- LC 12 – Duly authorised and other suitably qualified and experienced persons
- LC 17 – Management Systems
- LC 23 – Operating rules
- LC 24 – Operating instructions
- LC 28 – Examination, Inspection, Maintenance and Testing
- LC 36 – Organisational Change

Due to COVID-19 restrictions, one of the compliance inspections within the Highly Active Liquor Evaporation and Storage (HALES) facility, both inspections within the Effluents and Encapsulation areas and the inspection within Magnox were undertaken remotely. The other inspection with HALES and those within the High-Level Waste Plants (HLWP) were undertaken physically at the Sellafield site.

Highly Active Liquor Evaporation and Storage (HALES)

A planned compliance inspection was conducted remotely at the HALES facility on the Sellafield Site. The purpose of the inspection was to confirm SL's compliance to its corporate arrangements for LC 10, 23, and 28.

ONR judged that compliance with LC 10, 23 and 28 was adequate and awarded Green (no formal action) inspection ratings. ONR also gained assurance that the HALES facility was compliant with SL's arrangements for LC 12 and LC 26.

In addition, an onsite inspection was conducted focussing on the intended resumption of evaporator operations. The purpose of the inspection was to confirm SL's compliance to its corporate arrangements for LC 11, 24, and 28.

ONR judged that compliance with LC 11, 24 and 28 was adequate and awarded Green (no formal action) inspection ratings. ONR also gained assurance that the HALES facility was compliant with SL's arrangements for LC 10 and LC 12.

High Level Waste Plants (HLWP)

A planned compliance inspection was conducted remotely at the HLWP on the Sellafield Site. The purpose of the inspection was to confirm SL's compliance to its corporate arrangements for LC 10, 11, 24 and 28 prior to the intended resumption of vitrification operations at the Waste Vitrification Plant (WVP).

ONR judged that compliance with LC 10, 11, 24 and 28 was adequate and awarded Green (no formal action) inspection ratings. ONR also gained assurance that the WVP was compliant with SL's arrangements for LC 12.

Effluent and Encapsulation Plants

A planned compliance inspection was conducted remotely at the Low Active Effluent Management Group (LAEMG) on the Sellafield Site. The purpose of the inspection was to confirm SL's compliance to its corporate arrangements for LC 10, 12 and 28.

ONR judged that compliance with LC 10, 12 and 28 was adequate and awarded Green (no formal action) inspection ratings. ONR also gained assurance that the LAEMG was compliant with SL's arrangements for LC 17, 23, 24 and 36.

A planned compliance inspection was also conducted remotely at the Encapsulation facilities on the Sellafield Site. The purpose of the inspection was to confirm SL's compliance to its corporate arrangements for LC 10, 12, 26 and 28 prior to return to service of the Magnox Encapsulation Plant (MEP) after the forced outage brought about by COVID-19

ONR judged that compliance with LC 10, 12, 26 and 28 was adequate and awarded Green (no formal action) inspection ratings. ONR also gained assurance that the MEP was compliant with SL's arrangements for LC 24.

Magnox

A planned compliance inspection was conducted remotely within Magnox East River (MER) facility on the Sellafield site. The purpose of the inspection was to confirm SL's compliance to its corporate arrangements for LC 10, 12 and 28.

ONR judged that compliance with LC 10, 12 and 28 was adequate and awarded Green (no formal action) inspection ratings. ONR also gained assurance that the MER Facility was compliant with SL's arrangements for LC 23.

Oxide Fuel Storage Group (OFSG)

A planned compliance inspection was conducted on site at the OFSG facility on the Sellafield site. The purpose of the inspection was to confirm SL's compliance to its corporate arrangements for LC 11 and 36.

ONR judged that compliance with LC 11 and 36 was adequate and awarded Green (no formal action) inspection ratings.

Site Infrastructure

During this period within the Site Infrastructure value stream, ONR carried out three planned LC compliance inspections, covering:

- LC 10 – Incidents on the site
- LC 11 – Emergency arrangements
- LC 12 – Duly authorised and other suitability qualified and experience persons)
- LC 23 – Operating Rules
- LC 26 – Control and Supervision of Operations
- LC 28 – Examination, inspection, maintenance and testing

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

Due to COVID-19 restrictions all the licence compliance inspections were undertaken remotely. The IRR17 compliance inspection was undertaken physically at the Sellafield site.

Utilities

A planned compliance inspection was conducted remotely within Utilities on the Sellafield site. The purpose of the inspection was to confirm SL's compliance to its corporate arrangements for LC 28.

ONR judged that compliance with LC 28 was adequate and awarded Green (no formal action) inspection ratings. ONR also gained assurance that the Utilities area was compliant with SL's arrangements for LC 10, 12 and 26.

Analytical Services

A planned compliance inspection was conducted remotely within Analytical Services on the Sellafield site. The purpose of the inspection was to confirm SL's compliance to its corporate arrangements for LC 10, 12, 23 and 28.

ONR judged that compliance with LC 10, 12, 23 and 28 was adequate and awarded Green (no formal action) inspection ratings. ONR also gained assurance that the Analytical Services were compliant with SL's arrangements for LC 26.

In addition, ONR undertook one planned IRR17 inspection within Analytical Services physically at site. The key requirements examined were those relating to the following IRR17 regulations:

- Regulation 8 (Radiation risk assessments)

- Regulation 9 (Restriction of exposure)
- Regulation 10 (Personal protective equipment)
- Regulation 13 (Contingency plans)
- Regulation 15 (Information, instruction and training)
- Regulation 17 (Designation of controlled and supervised areas)
- Regulation 20 (Monitoring of designated areas)

ONR judged that compliance with IRR17 was adequate and awarded an inspection rating of Green (no formal action).

Security and Resilience

A planned compliance inspection was conducted remotely on SL's Security and Resilience function on the Sellafield site. The purpose of the inspection was to confirm SL's compliance to its corporate arrangements for LC 10, 11, 12 and 28.

ONR judged that compliance with LC 10, 11, 12 and 28 was adequate and awarded Green (no formal action) inspection rating.

Corporate Inspection Programme

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

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

As noted in the previous report, an inspection of the arrangements that SL has made to comply with LC 26 (Control and supervision of operations), planned for 25-26 March 2020, had to be postponed due to the impact of COVID-19. The impact of COVID-19 has led to a revised plan for ONR's inspections of SL's licence compliance arrangements.

Inspections of SL's LC 26 and LC 17 (Management systems) arrangements are currently underway. Both these inspections are being undertaken as a series of remote modules spread over several weeks. Additional arrangements inspections are planned up to the end of March 2021. The outcomes of the LC 26, LC 17 and other planned inspections of SL's arrangements will be included in the next report.

SL recognised the need to consider their site wide compliance arrangements in the context of COVID-19 and were satisfied that they should remain unchanged and continue to be complied with. Nonetheless, as a contingency, SL developed variations to some of its corporate arrangements in order to introduce some flexibility, but in a way that maintained compliance with legal obligations. ONR engaged with SL on these variations, targeting those most relevant to ONR's vires, to ensure their adequacy. ONR also tested implementation of these variations in facilities, securing improvements where needed. ONR will continue to provide oversight in this area until such time as the variations are no longer needed or become a permanent part of SL's arrangements.

During this period, ONR continued to monitor improvement actions being taken by SL in response to previous compliance inspections. This included improvements SL is currently making to its arrangements for managing legacy training materials and its delivery model for disciplined operations and human factors. ONR continued to engage with SL on trials that are being conducted of changes to its arrangements for work delivery.

ONR is continuing to monitor SL's progress in addressing two regulatory issues relating to safety management, specifically the design and implementation of the licensee's management system and the quality of, and adherence to, working level instructions. ONR is satisfied with SL's progress in addressing these regulatory issues. During this period ONR closed a regulatory issue relating to safety leadership at the site. SL has now established a suitable set of leadership expectations, supported by training and communications, and has successfully piloted a methodology for peer review. ONR will continue to monitor implementation of this programme across the site.

ONR has continued to maintain oversight of SL's transformation plan, which comprises a portfolio of business change aligned to its strategic objectives. In particular, ONR has been monitoring the implementation of the Programme and Project Partner (PPP) contracts for delivery of major projects, improvements to leadership and culture, and improvements to the SL Management System (SLMS) including development of the Sellafield Enterprise Management System (SEMS).

Conventional Health & Safety Interventions

ONR are continuing to monitor SL's progress relating to chemical management at the site. This is a long-term intervention focussing on the safe management of hazardous chemicals at Sellafield resulting from a chemical event where stockpiling of chemicals resulted in the disposal of unstable chemicals by the Army Explosive Ordnance Disposal (EOD) Team. A recent similar event in the Magnox Reprocessing Plant, discussed in section 3, highlights the requirement for focus on chemical management and for ONR to secure regulatory confidence in SL's delivery plans. ONR will monitor the implementation of the work-streams detailed in the improvement plan. The work-streams address the site chemical inventories, prioritised disposal of waste chemicals and the use and storage of chemicals.

Conventional Health and Safety inspectors have provided support and advice in relation to the Construction (Design and Management) Regulations 2015 (CDM) on a number of projects. This has included a remote inspection of Box Encapsulation Plant Product Store following COVID 19 lockdown and providing advice during the mobilisation of the PPP contracts.

Under the Control of Major Accident Hazard (COMAH) Regulations 2015, the Sellafield site moved from a Lower Tier to an Upper Tier COMAH establishment in September 2017, due to a change in hazard classification of nitric acid. As required by these regulations, SL has produced a COMAH safety report. This is currently being assessed by the COMAH Competent Authority (CA), consisting of ONR and the Environment Agency (EA), to establish that the relevant requirements of the regulations have been appropriately addressed and that SL has taken the necessary

measures to prevent major accidents and limit the consequences to human health and the environment. The COMAH CA, will conclude the assessment in December 2020.

Asbestos management across the Sellafield site remains a regulatory priority for ONR. SL is developing and implementing an asbestos strategy and action plan, to enable a site-wide and prioritised approach to asbestos management. ONR will maintain focus on the implementation of the strategy and action plan to ensure timely implementation of the actions and to ensure risks are being effectively controlled. This is being monitored via a level 2 Regulatory Issue which has ONR senior management oversight.

Periodic Safety Review

SL's Periodic Safety Review (PSR) programme has been affected by the response to the COVID-19 challenge, however there was been no material effect on nuclear safety. In order to support the SL's primary focus of responding to immediate challenges presented by a response to COVID-19, ONR has agreed an extension with SL to some PSR submission deadlines. Whilst there is a small number of outstanding PSR related reports, the regulatory milestones of providing 10 yearly PSR reports are being fulfilled.

ONR is continuing to engage with SL over opportunities for improvements within the PSR programme and continues to monitor and support delivery of improvements identified during earlier PSR inspections. SL has approved and published new PSR arrangements that incorporate the learning about PSR processes and optimise the safety case improvement process.

During the reporting period, ONR carried out no planned LC 15 (Periodic review) compliance inspections.

Permissioning Activity

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

- Fuel Handling Plant Gamma gate open tube interlock project
- HALES modification to Operating Rule (OR) 27

The modifications to the Fuel Handling Plant gamma gates involve the replacement of around 10 gamma gate computer-based interlocks with a hardwired solution. This proposed modification addresses lessons learnt from a previous related event.

ONR fault studies, control & instrumentation, human factors and mechanical engineering specialists have assessed the safety submission and were satisfied that it has demonstrated the risks associated with the change have been reduced So Far As Is Reasonably Practicable (SFAIRP).

The HALES modification implements the changes to arrangements for hazards associated with using the Highly Active Storage Tank (HAST) 10. HAST 10 was commissioned in 1974 but during commissioning, leakage was found from the jacket

cooling pipe to cell and was subsequently drained and isolated. HAST 10 has since been operated without jacket cooling, and as a result, can only store low heat generating liquor.

In recent years, HALES has moved to store greater volumes of more dilute liquor, which results in a decrease in the HASTs volume margin but increase in the cooling margin. The modification proposed relating to change of OR 27 was to optimise the use of HAST 10 to achieve the long term HALES objective of supporting hazard and risk reduction.

ONR fault studies, chemical engineering and radiological protection specialist inspectors have assessed the safety case by focusing on potential radiological consequences, adequacy of their control measures, provision of adequate cooling capacity and adequate shielding. Overall, ONR is satisfied that the safety case has demonstrated the risks associated with the change have been reduced SFAIRP. On this basis, in May 2020, ONR permissioned HALES implementation of the change to OR 27.

2.2 Other Work

Project Delivery Sub-Division

The ONR Project Delivery sub-division regulates the programmes, projects and activities, associated with the delivery of high hazard and risk reduction on the Sellafield site. This includes projects in the legacy ponds, legacy silos, decommissioning, high level waste and infrastructure areas of the site. In addition to regulating these areas, the sub-division also has several improvement themes, aimed at encouraging SL to accelerate risk and hazard reduction, namely:

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

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

Analytical Services

ONR continues to engage with SL over the need to secure long-term provision of analytical services for the Sellafield site. This is necessary to support the safety of ongoing operations and, specifically, hazard and risk reduction activities across the site. The project continues to progress its preliminary design having gained NDA and Government sanctions which will enable it to progress to completion of detailed design. ONR has also continued to engage with SL to regulate asset care improvements and the reduction of legacy waste presently stored within the existing Analytical Services facility.

Although progress has been hampered by COVID-19, ONR has been encouraged that SL has managed to re-start operations in the above areas and continues to make significant progress in the repackaging of legacy wastes from within this 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 continues to engage with the licensee and assess its proposals to dewater two bays as a pilot for the interim state. These proposals include the potential to use divers within the bays to improve the removal of items and final isolation. Divers have been used successfully on Magnox Ltd. Ponds previously. Following the challenges presented by the pandemic SL is reviewing its programme for deployment in 2021, and ONR continues to engage to assess the licensee's proposals before any permission is granted.

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. Early technical engagements have also begun to discuss additional waste streams for the ISF, and whether modifications are necessary for the additional materials. ONR is also engaging with SL regarding the impact of quality issues and a change of supply chain for the Self-Shielded boxes.

ONR is satisfied that the impact of COVID-19 on the FGMSP retrievals programme and Hazard and Risk Reduction on the pond is being adequately managed by SL.

Magnox Swarf Storage Silo (MSSS)

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

SL has submitted its safety case to transfer Silo Emptying Plant No2 (SEP2) onto Compartment 10 and commence its trace active commissioning while connected to a compartment. The SEP2 machine is currently completing its inactive commissioning.

On 7th September, ONR released the hold point associated with moving the SEP2 cave from Compartment 4, where it was assembled on site, to Compartment 6. This is an intermediate move before SEP2 is moved onto Compartment 10; the compartment from whence retrieval of active waste will commence

ONR has commenced its assessment of the safety case for moving SEP 2 onto Compartment 10. However, COVID-19 restrictions have delayed submission of some safety case documents and SL's commissioning activities on site. ONR now expects

to reach its permissioning decision by November 2020. The permission decision will take account of the retrieval ventilation system trace active commissioning findings.

COVID-19 restrictions mean that SL's overall timescale has extended again, and waste retrieval is unlikely to commence before June 2021. ONR recognises the complexity of delivering hazard and risk reduction in MSSS and continues to engage with SL to secure regulatory confidence in its delivery plans and that the overall risks to people on and off site remain reduced SFAIRP.

In April 2020, ONR permissioned the withdrawal of forced cooling in the MSSS second extension compartments. ONR judged that SL's safety case provided adequate justification that the radiogenic and corrosion heat generation in the waste has reduced sufficiently such that active cooling is no longer required. As operation of the second extension coolers had some inherent risks, the proposal resulted in lowered operational risk.

MSSS Original Building leakage

In November 2019, SL reported to ONR and the EA a second incident relating to leakage of radioactive liquor from the original building of the Magnox Swarf Storage Silos. The event was rated as INES 2 (incident) on the international event scale. The radioactivity is being discharged into the ground beneath the silos. Monitoring of groundwater boreholes and in-ground gamma activity around the facility has not indicated a release to the environment. SL's modelling and underpinning research concludes that any migration of the more significant contamination would be very slow. As such, any risk to the environment and public would be very low and over an extended timescale. The predictions are supported to date by the findings of the in-ground monitoring. SL continues to investigate the leakage to determine the cause and further characterise the losses. ONR and EA are continuing to maintain close regulatory oversight in relation to this matter to ensure, in ONR's case, that SL continues to reduce risks arising from the leakage to people on and off site SFAIRP.

Waste Retrievals

To support waste retrievals from the legacy silos, MSSS and PFCS, SL needs to progress the construction of a number of new build facilities and implement existing facility modifications that will directly support. ONR continues to maintain regulatory focus on the Box Encapsulation Plant (BEP), Box Encapsulation Plant Product Store / Direct Import Facility (BEPPS/DIF), Encapsulated Product Store 3/Waste Transfer Route (EPS3/WTR), Silo Maintenance Facility (SMF), and other key waste retrieval and storage enablers.

Due to COVID-19 lockdown, SL stopped the construction activities on these facilities in March. During May, ONR completed a remote inspection to provide regulatory confidence that these activities could re-start safely, taking into account government guidance on COVID-19.

The BEPPS/DIF Pre-Inactive Commissioning Safety Report has now been submitted to ONR. The regulatory assessment of this submission is on-going and will support the permissioning decision to enable the commencement of in-active commissioning on this facility.

ONR has continued to engage with SL remotely to understand the impact of COVID-19 and provide confidence that the facilities can still be delivered on timescales to support timely, safe waste retrievals from the legacy silos. ONR's regulatory focus will continue in this area to ensure we have the necessary regulatory confidence in these aspects of SL's hazard and risk reduction programmes.

Pile Fuel Cladding Silo (PFCS)

SL has continued to experience delays in the availability of the BEPPS/DIF, which is being built to house the waste removed from PFCS and the MSSS. This has delayed the "early retrievals" project (designed to retrieve waste from PFCS compartment number 5).

SL has undertaken further work to look at the options to proceed with the active commissioning of the PFCS retrievals capability in the absence of BEPPS/DIF being ready to receive filled waste containers. SL has identified a contingency route which would enable the transfer of a limited number of containers to an alternative waste storage facility on the site. Based on this, SL has now developed a clear strategy to enable the commencement of "early retrievals". ONR welcomes this progress and regulatory activities over the coming months will be focused on assessment and inspection work to inform ONR's regulatory decision to permission commencement of active commissioning and the start of waste retrievals from compartment 5.

Special Nuclear Material (SNM) Projects

Through ONR's three Level 1 regulatory issues (i.e. ONR's highest level of issue) ONR continues to engage and influence the delivery of hazard and risk reduction activities regarding the 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 improvement, SL continues to make satisfactory progress on the electrical and containment upgrade tasks within the SNM (North) facilities.

The on-going construction of the Sellafield Product and Residue Store Retreatment Plant (SRP) is fundamental to the success of the Package Integrity Recovery Programme (PIRP); and forms part of ONR's continued engagement and influence at SL 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 hampered by COVID-19 restrictions, ONR has been encouraged that SL has managed to re-start operations in the above areas and continues to make significant progress.

Decommissioning (Remediation) Projects

ONR regulatory engagements have continued on key remediation projects. SL has started to install two active demonstration facilities on site for decommissioning and dismantling redundant radioactive components. Both facilities utilise robotically deployed laser cutting machines to remotely dismantle the radioactive components. One demonstrator will process intermediate level radioactive waste (ILW) pond skips and the other will process redundant gloveboxes.

Programme delays in bringing the demonstrators into service have been amplified by COVID-19, but neither demonstrator is on the critical path for delivering high hazard and risk reduction on site. To date ONR has been satisfied with SL's justifications for the delays.

SL continues to make good progress with demolition of the Pile one chimney diffuser. With the demolition of the diffuser and collar achieved thus far, the seismic withstand of the remaining chimney section has been substantiated to that of an existing structure.

3 NON-ROUTINE MATTERS

Spent Fuel Management

Oxide Fuel Storage Group

ONR undertook preliminary enquiries at the Oxide Fuel Storage Group for a number of events reported during this period, none met the investigation criteria; however one matter, related to a detached air motor from a lifting beam, resulted in an enforcement letter being sent under the Management of Health and Safety at Work Regulations 1999, Regulation 3 (Risk assessment).

Effluent and Encapsulation Plants

ONR undertook preliminary enquiries in response to an incident reported on the site related to Encapsulated Product Store (EPS) flask crane. ONR judged that this event did not meet the formal investigation criteria, however, minor shortfalls were identified against relevant good practice resulting in ONR giving SL regulatory advice. ONR is satisfied that SL has identified appropriate actions through their internal management investigation which ONR will monitor through normal regulatory business.

Magnox

In the previous six-month reporting period it was recognised by SL and ONR that there had been several minor incidents at the Magnox Reprocessing Facility (MRF) that had the same underlying causes of situational awareness and operational focus. To address these, the duty holder has introduced a new enhanced oversight function. The Nuclear Oversight Function has seen the introduction of additional independent oversight personnel to observe, mentor and coach the operations and maintenance personnel at MRF. ONR is monitoring implementation and delivery of this Nuclear Oversight Function via a level 3 regulatory issue.

An incident occurred at MRF in August 2020 which was subsequently reported in the media. During routine inspections within MRF, an organic peroxide chemical was found to have changed in composition and required specialist disposal due to its explosive potential. The Army EOD successfully disposed of the chemical and there were no injuries or release of radioactive material as a result of the incident.

ONR undertook preliminary enquiries into this incident and concluded that it did not meet ONR's investigation criteria. SL has an ongoing site wide chemical improvement plan to improve their arrangements for managing waste chemicals across the site, including safe storage and disposal. ONR have continued to maintained oversight of

the chemical improvement plan progress through an ONR Regulatory Issue and regular interventions.

An incident also occurred at MRF in September 2020 relating to a leak of Uranyl Nitrate liquor from a pipe bridge where the radioactive material leaked was above the statutory reporting limits in IRR17. There were no radiation dose consequences from the incident to the workforce or the public. SL safely stopped and contained the leak and is exploring options to remediate the ground local to the leak site. The leaked material remains on the site near the pipe bridge leak location. ONR is satisfied with SL's response to the incident and are maintaining regulatory oversight of SL's progress in fixing the pipe bridge and remediating the ground.

Retrievals Value Stream

During this period ONR concluded its investigation into the release of radioactivity through a leak from the Redundant Settling Tank. This has resulted in ONR issuing an enforcement letter under the Management of Health and Safety at Work Regulations (MHSWR) 1999 Regulation 3(1) and Licence Conditions 23(1) & 34(1) to secure compliance with the law and prevent a reoccurrence. SL has responded in an appropriate manner and has completed remedial action taking robust, timely steps to restore appropriate radiological conditions within the facility and permanently stop the leak.

During this period ONR also concluded its investigation into the release of radioactivity through a leak from the Magnox Swarf Storage Silos. ONR has raised a number of actions on SL including the requirement to demonstrate that it has evaluated, and where appropriate made arrangements to implement options to prevent, minimise, mitigate or remediate the consequences of leaks from MSSS. These actions are being closely monitored via a Level 2 Regulatory Issue which has ONR senior management oversight.

Site Infrastructure

We have notified Sellafield Ltd that it will be prosecuted under Section 2 (1) of the Health and Safety at Work etc. Act (1974). The charge relates to an incident on 24 April 2020 at the Sellafield site where an employee sustained injuries while working on high voltage electrical equipment. The incident was a conventional health and safety matter and there was no radiological risk to workers or the public. The decision to commence legal proceedings follows an investigation into the incident by ONR.

ONR conducted preliminary enquiries on an event whereby steam was lost to the site following severe thunderstorms in August. This event did not meet ONR's investigation criteria and further follow-up will be dealt with as part of normal regulatory business.

An update to SL's Operator Emergency Plan to incorporate changes required by REPPiR 2019 was due to be implemented by SL in May 2020. Although the necessary updates to the plan were completed by SL, it was not possible for SL to implement the plan due to issues with the ability to train responders about the changes to the plan due to COVID-19 restrictions. SL requested an extension to the time required to complete implementation of the plan. The updated plan is on track for

implementation on 17 November 2020 aligning with the planned implementation of the Off-Site Emergency Plan by Cumbria County Council.

Corporate (Site wide)

ONR undertook preliminary enquiries following SL report on a supply chain event relating to a conflict of interest and where an extent of condition has shown significant weld defects. The enquiries are nearing completion and ONR are considering what regulatory action is required.

4 REGULATORY ACTIVITIES

Licence Instruments and Enforcement Notices Issued by ONR during this period

Date	Type	Ref No	Description
30/09/2020	Approval	LI530	Approval of an amendment to the arrangements made by SL under Licence Condition 35(2) for the production and implementation of decommissioning programmes for each plant

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

5 NEWS FROM ONR

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

COVID-19 (Coronavirus) (ONR position)

ONR is continuing to obtain assurance that nuclear site licensees and other dutyholders are adequately resourced to continue to safely and securely carry out their activities.

We remain satisfied with industry's response at this time and there has been no significant change to dutyholders' safety and security resilience.

As COVID-19 restrictions change, our focus is on the preparedness for the weeks and months ahead and maintaining safe and secure operations in the face of any further escalation in COVID-19 transmission.

ONR staff continue to work at home, primarily. We are increasing our on-site regulatory work in accordance with public health advice. We'll also continue to inspect, assess and permission remotely where necessary to protect staff, workers on site, and the public around sites.

Enforcement Action

In June we publicised the serving of an [Improvement Notice on EDF Energy Nuclear Generation Ltd \(EDF Energy\)](#) for contravention of the Pressure Systems Safety Regulations (2000) at Heysham 1 Power Station. The notice was served after shortfalls were discovered in the examination and inspection of the Reactor 1 pressure vessel at the Lancashire plant.

In July we publicised the serving of an [Improvement Notice on Rolls-Royce Submarines Ltd \(RRSL\)](#) for procedural safety breaches at its Derby site. The notice was served after shortfalls were identified against the safety case requirements at a nuclear fuel production facility on the site.

In September we announced that an [Improvement Notice had been served on EDF Energy Nuclear Generation Ltd \(EDF NGL\)](#) for shortfalls in safety procedures at its Heysham 2 Power Station in Lancashire. The notice was served after some of the equipment which is used to measure reactor power was incorrectly configured during the reactor's restart process following a planned outage in April 2020.

In September we announced that an [Improvement Notice had also been served on Devonport Royal Dockyard Ltd](#) for shortfalls in maintenance procedures at its Plymouth site. The notice was served after Devonport Royal Dockyard failed to carry out scheduled maintenance tests on an effluent extraction system which is used to support maintenance and repair activities within the licensed site.

In September we publicised our intention [to prosecute AWE plc under Section 3 of the Health and Safety at Work etc. Act \(1974\)](#). The charge relates to an incident on 20 June, 2019, at the AWE Aldermaston site which resulted in a contractor narrowly avoiding injury when a flash over of electricity occurred from a 415V electrical source. The incident was a conventional health and safety matter and took place in a 'non-nuclear' building, so there was no radiological risk to workers or the public.

Regulatory updates

In June ONR received an application for a nuclear site licence from [NNB Generation Company \(SZC\) Limited](#), to construct and operate two EPR TM reactors, at its proposed development in Sizewell, Suffolk. We will now assess the application, partly informed by our previous assessment of the EPR TM at Hinkley Point C – including using the relevant lessons from that assessment, while focusing on aspects specifically relevant to Sizewell C.

Whilst we are satisfied that the application is sufficiently complete to proceed to assessment stage, there is still a lot of work to do – and we do not expect to reach a decision until at least the end of 2021.

In July the Government published its response to the International Atomic Energy Agency's final report on the [Integrated Regulatory Review Service \(IRRS\) mission to the UK](#). The IRRS mission took place between 14 – 25 October 2019 was hosted by ONR, and saw a team of 18 independent experts from across the globe scrutinising the regulation of nuclear and radiological safety.

In August we provided EDF NGL with permission for [Reactor 3 at its Hunterston B site to return to service](#) for a limited period of operation (16.425 Terawatt days, approximately six months' operation). In September we also gave [permission for](#)

[Reactor 4 at the same site](#) to return to service for a limited period of operation (16.25 terawatt days, which is approximately six months operation). The decision to permission the restart of these reactors was given after extensive and detailed assessments of the respective safety cases by specialist ONR inspectors.

Corporate updates

In July we published our new [2020-25 Strategy](#), which sets out our direction and priorities for the next five years. It builds on our strengths and continues to focus on protecting society and addressing the changing demands we will face as the UK's nuclear regulator.

In late September we published our [Annual Report and Accounts](#) highlighting our performance and key achievements for 2019/20.

The report notes that we continued to deliver our mission of protecting society by securing safe nuclear operations and that the majority of dutyholders have continued to meet the high standards of safety and security required. Where dutyholders have fallen short of such standards, we are satisfied that their facilities remain safe and that our regulatory focus has had a positive impact on their performance.

During the year, we completed more than 800 compliance inspections across 36 licensed sites during 2019/20, granting permission for 30 nuclear-related activities, serving three improvement notices and instigating one prosecution.

ONR Chair Mark McAllister said: "I am pleased to report that we have again delivered our mission and achieved our 2020 vision. As we look ahead, I have every confidence in our senior leadership team to see through the strategic improvement projects already underway that will enhance the organisation's information and knowledge management system, and successfully deliver the aspirations of our new strategy."

In September we announced that [Jean Llewellyn OBE](#) had been appointed to the ONR Board as the new Security Non-Executive member. Jean will take up her appointment on 1 October 2020 for a three-year term and will Chair ONR's Security Committee.

6. CONTACTS

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

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