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

Covering the period – 01 October – 31 March 2021

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 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 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

TABLE OF CONTENTS

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
C10	Compartment 10
C&I	Control and Instrumentation
CA	Competent Authority
CDM	Construction (Design and Management) Regulations 2015
COMAH	Control Of Major Accident Hazard (Regulations 2015)
EA	Environment Agency
EIADR	Environmental Impact Assessment for Decommissioning Regulations 199
EOD	(Army) Explosives Ordinance Disposal
EPS	Encapsulation Product Store
EPS	Encapsulation Product Store
FGFL	First Generation Finishing Line
FGMSP	First Generation Magnox Storage Pond
HAL	Highly Active Liquor
HALES	Highly Active Liquor Evaporation and Storage
HLWP	High Level Waste Plants
HPCP	Hold Point Control Plan
HSWA74	Health and Safety at Work Act 1974
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 Condition
MDF	Mixed oxide Demonstration Facility
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
OB	Original Building

OFSG	Oxide Fuel Storage Group
ONR	Office for Nuclear Regulation
OR	Operating Rule
PFCS	Pile Fuel Cladding Silo
PFSP	Pile Fuel Storage Pond
PIRP	Package Integrity Recovery Programme
PPP	Programme and Project Partner
PSR	Periodic Safety Review
SBI	System Based Inspection
SCIE	Sellafield Compliance, Intelligence 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
SRP	Sellafield (Product and Residue) Retreatment Plant
SSB	Self Shielded Box
THORP	Thermal Oxide Reprocessing Plant
WTR	Waste Transfer Route
WVP	Waste Vitrification Plant

1 INSPECTIONS

1.1 DATES OF INSPECTIONS

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

Period: 01 October 2020– 31 March 2021	**October 2020**	**November 2020**	**December 2020**	**January 20201**	**February 2021**	**March 2021**
Special Nuclear Materials	7-8		15			
Retrievals Value Stream	10, 12 & 26		11, 27 & 28			23-24
Remediation Value Stream	7		3			
Remediation: THORP	6	17				09-10
Spent Fuel Management (SFM) - HALES and HLWP	24	12	17			09-10
SFM - Effluent and Encapsulation	14-15	16				
SFM- Magnox	7	4	9		09-10	
SFM - OFSG	6	17				09-10
Site Infrastructure	27-29		8-9	21-22	24-25	
Corporate	2, 10, 30	13, 17-18, 22, 26			4, 9, 16, 24	5

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 regular 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 regular telecon meetings with the SL senior management team

The latter part of this reporting period coincided with the third national lockdown. Consequently, due to the COVID-19 restrictions in place, ONR undertook a number of targeted assurance visits at the site in place of the planned compliance inspections. The purpose of these visits was to gain assurance that the facilities continue to be operated in a safe manner in terms of both nuclear and COVID-19 safety. These visits were unrated.

The Licence Conditions and inspection themes selected by ONR during this period were determined by the routine planned inspections, 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 pandemic, 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, ONR carried out planned Licence Condition (LC) compliance inspections within the SNM value stream, covering:

- LC 15 – Periodic Review
- LC 28 – Examination, inspection, maintenance and testing

Both of these inspections were undertaken physically at the Sellafield site, albeit with some additional remote inspector support for the LC 15 inspection.

ONR judged that compliance with LC 15 and 28 was adequate and awarded Green (no formal action) inspection ratings. The LC 15 compliance inspection was undertaken as part of ONR's periodic safety review activities and is discussed further under the relevant section below.

Retrievals Value Stream

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

- LC 10 – Training
- LC 11 – Emergency arrangements
- LC 12 - Duly authorised and other suitably qualified and experienced persons
- LC 26 - Control & supervision of operations
- LC 27 – Safety mechanisms, devices and circuits
- LC 28 – Examination, inspection, maintenance and testing

All of these inspections were undertaken physically at the Sellafield site.

Pile Fuel Storage Pond (PFSP)

A planned compliance inspection was conducted at the PFSP 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.

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

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 11, 27 and 28.

ONR judged that compliance with LC 11, 27 and 28 was adequate and awarded Green (no formal action) inspection ratings.

In addition, during the latter part of this reporting period, ONR undertook an assurance visit at FGMSP and gained assurance that this facility continues to be operated in a safe manner in terms of both nuclear and COVID-19 safety during the pandemic.

Magnox Swarf Storage Silo (MSSS)

During the latter part of this reporting period, ONR undertook an assurance visit at the Magnox Swarf Storage Silos (MSSS) and gained assurance that this facility continues to be operated in a safe manner in terms of both nuclear and COVID-19 safety during the pandemic.

Remediation Value Stream

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

- LC 22 – Modification or experiment on existing plant
- LC 25 – Operational Records
- LC 32 – Accumulation of Radioactive Waste
- LC 35 – Decommissioning
- LC 36 – Organisational capability
- Nuclear Reactors (Environmental Impact Assessment for Decommissioning) Regulations 1999, as amended (EIADR)

All of these inspections were undertaken physically at the Sellafield site.

Calder Hall

A planned compliance inspection was conducted at Calder Hall on the Sellafield site. The purpose of the inspection was to confirm SL's compliance to its corporate arrangements for LC 35 and the Nuclear Reactors (Environmental Impact Assessment for Decommissioning) Regulations 1999, as amended (EIADR).

ONR judged that compliance with LC 35 and EIADR, was adequate and awarded a Green (no formal action) inspection rating.

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 25 and 32.

ONR judged that compliance with LC 25 and 32 was adequate and awarded Green (no formal action) inspection ratings.

Thermal Oxide Reprocessing Plant (THORP)

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 22 and 36.

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

In addition, during the latter part of this reporting period, ONR undertook an assurance visit to THORP and gained assurance that this facility continues to be operated in a safe manner in terms of both nuclear and COVID-19 safety during the pandemic.

Spent Fuel Management Value Stream (SFM)

During this period, ONR carried out planned LC compliance inspections within the spent fuel management value stream, covering:

- LC 7 – Incidents on the site
- LC 22 - Modification or experiment on existing plant
- LC 28 – Examination, inspection, maintenance and testing
- LC 32 – Accumulation of radioactive waste
- LC 36 – Organisational Capability

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

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

Planned compliance inspections were conducted at HALES and HLWP on the Sellafield site. The purpose of these inspections was to confirm SL's compliance to its corporate arrangements for LC 32 and the Ionising Radiations Regulations 2017 (IRR17).

Due to the COVID-19 restrictions, the IRR17 compliance inspections at HALES and HLWP were undertaken in two parts: a remote discussion (held on 12 November for HALES and 24 October for HLWP) and then a physical inspection of both HALES and HLWP on 10 December 2020.

For these IRR17 compliance inspections, ONR judged that compliance was adequate and rated the inspection GREEN (no formal action) in both cases. Additionally, as part of the same inspection, ONR inspected the COVID-19 control measures and was satisfied with the precautions in place.

The planned compliance inspection against LC 32 was conducted at HLWP only. This was combined with an inspection carried out by the Environment Agency (EA) against compliance with the permit granted under the Environmental Permitting Regulations 2016. Whilst this inspection was undertaken remotely, it was supported by information and photographs collected by the ONR site Inspector during the IRR17 inspection visit.

For the LC32 compliance inspection, ONR judged that compliance was adequate and awarded a Green (no formal action) inspection rating.

In addition, during the latter part of this reporting period, ONR undertook assurance visits to both these facilities and gained assurance that both these facilities continue to be operated in a safe manner in terms of both nuclear and COVID-19 safety during the pandemic.

Effluent and Encapsulation Plants

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

For this compliance inspection, ONR judged that compliance with LC 28 was adequate and awarded a Green (no formal action) inspection rating.

Magnox Operating Unit

Planned compliance inspections were conducted within the Magnox operating unit on the Sellafield site. The purpose of the inspection was to confirm SL's compliance to its corporate arrangements for LC 7, 22, 28 and 36.

For the compliance inspections undertaken at Magnox East River (MER), ONR judged that compliance with LC 22 and 36 was adequate and awarded Green (no formal action) inspection ratings.

For the compliance inspections undertaken at the Magnox Reprocessing Facility (MRF), ONR judged that compliance with LC 7 and 28 was adequate and awarded Green (no formal action) inspection ratings.

In addition, during the latter part of this reporting period, ONR undertook an assurance visit to MRF and gained assurance that this facility continued to be operated in a safe manner in terms of both nuclear and COVID-19 safety during the pandemic.

Oxide Fuel Storage Group (OFSG)

Planned compliance inspections were conducted at the OFSG on the Sellafield site. The purpose of the inspection was to confirm SL's compliance to its corporate arrangements for LC 22 and 36.

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

In addition, during the latter part of this reporting period, ONR undertook an assurance visit to OFSG and gained assurance that this facility continues to be operated in a safe manner in terms of both nuclear and COVID-19 safety during the pandemic.

Site Infrastructure

During this period, ONR carried out planned LC compliance inspections within Site Management, covering:

- LC 10 – Incidents on the site
- LC 11 – Emergency arrangements
- LC 12 – Duly authorised and other suitability qualified and experience persons
- LC 26 – Control and Supervision of Operations
- LC 28 – Examination, inspection, maintenance and testing
- LC 36 – Organisational capability

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

Utilities

A planned compliance inspection was conducted within Utilities on the Sellafield site. The purpose of the inspection was to confirm SL's compliance to its corporate arrangements for LC 10, 12, 26, 36.

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

In addition, during the latter part of this reporting period, ONR undertook an assurance visit to utilities and gained assurance that this facility continued to be operated in a safe manner in terms of both nuclear and COVID-19 safety during the pandemic.

Fellside Combined Heat and Power Plant

During the latter part of this reporting period, ONR undertook an assurance visit to the Fellside combined heat and power plant and gained assurance that this facility continued to be operated in a safe manner in terms of both nuclear and COVID-19 safety during the pandemic.

National Nuclear Laboratories (Central Labs)

ONR undertook a planned IRR17 inspection within National Nuclear Laboratories (Central Labs). 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)

Compliance against LC11 was also assessed as part of this inspection. ONR judged that compliance with IRR17 and LC11 was adequate and awarded inspection ratings 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 with its corporate arrangements for LC 11 and LC 28 as well

as the approved Sellafield Nuclear Site Security Plan. This inspection was undertaken jointly with ONR security inspectors who led on the assessment of compliance with the Sellafield Nuclear Site Security Plan arrangements.

ONR gained assurance that SL's Security and Resilience function was compliant with the SL corporate arrangements for LC 11, LC 28 and the newly approved Sellafield Nuclear Site Security Plan. No formal inspection ratings were given.

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.

During this period, ONR carried out three planned LC compliance inspections, covering:

- LC 13 - Nuclear safety committee
- LC 17 - Management systems
- LC 26 - Control and supervision of operations

The scope of the LC13 inspection covered the adequacy of the corporate arrangements and their implementation.

ONR judged that the LC13 corporate arrangements and the implementation of these arrangements was adequate and awarded a Green (no formal action) inspection rating. Notwithstanding this, some areas for improvement were noted and regulatory advice given to SL which will be monitored as part of routine business.

ONR also judged that the LC17 corporate arrangements were adequate and awarded a Green (no formal action) inspection rating. Once again, some areas for improvement were noted and regulatory advice given to SL which will be monitored as part of routine business.

During the LC 17 inspection, ONR noted that SL's internal regulator had previously identified a shortfall in the implementation of the assurance aspects of the LC 17 compliance arrangements. Whilst SL are in the process of addressing the shortfall, ONR judged it appropriate to raise a Level 3 regulatory issue to monitor SL's progress in addressing this shortfall.

For LC 26, ONR judged that the corporate arrangements required improvement in relation to the control and supervision of operations on the Sellafield site being undertaken by tenants, and therefore awarded an Amber (seek improvement) inspection rating for these arrangements. Progress against this shortfall is being monitored via a Level 3 regulatory issue.

In the previous period ONR reported that, in response to COVID-19, SL has developed variations to some of its corporate arrangements in order to introduce a degree of flexibility, but in a way that maintains compliance with legal obligations. ONR has continued to provide oversight in this area and will continue to do so 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. ONR has now closed a regulatory issue relating to legacy training materials as SL has now put in place the necessary underpinning justifications for the priority facilities.

SL has also made satisfactory progress against another regulatory issue concerning its delivery model for disciplined operations and human factors, with the key improvement milestones now agreed. 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 regulatory issues relating to safety management, specifically the quality of, and adherence to, working level instructions. ONR is satisfied with SL's progress in addressing these regulatory issues.

ONR has also 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 SL's proposals for alternative delivery models for both Group Business Services and the Procurement of Information, Communications and Technology Services project, and the establishment of an improved Intelligent Customer capability for the procurement of Manufactured Products. ONR has also continued to monitor improvements to the SL Management System (SLMS) including development of the Sellafield Enterprise Management System (SEMS). ONR performed a follow-up to the August 2018 inspection of the implementation of Intelligent Customer capability for the Programme and Project Partners (PPP) Contracts. This follow-up inspection, which was conducted on 17, 18 and 26 November 2020, was rated 'Green' (no formal action).

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 similar event in the MRF, in August 2020, highlights the requirement for continued focus on chemical management and for ONR to secure regulatory confidence in SL's delivery plans. ONR conducted a remote inspection of Calder on 19th February 2021, where good practice for chemical management was observed. Significant progress has been made with the implementation of the workstreams set out in the improvement plan and additional work has been identified. The work-streams address the site chemical inventories, disposal of waste chemicals and the use and storage of chemicals. ONR continues to monitor this implementation through a regulatory issue.

Conventional Health and Safety inspectors have provided support and advice on the Construction (Design and Management) Regulations 2015 (CDM). SL has developed a CDM improvement programme and ONR meets regularly with the project team to monitor progress with the plan. Advice continues to be provided 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. The report has been examined and assessed by ONR and the EA acting together as the joint COMAH Competent Authority (CA). The process involved a range of technical assessors and was conducted in accordance with the CA Safety Report Assessment Manual (SRAM) and focused on the inactive tank farm as a sample point. The assessment is now complete and the CA issued a COMAH conclusions letter to SL. The CA concluded that there was no evidence of potential serious deficiencies. Revision plan items identified by the assessment team, have been incorporated into the inspection plan for the 2021/2022 work year.

The SL off site emergency plan implemented by Cumbria County Council is currently being reviewed. The updated version will also incorporate the COMAH external emergency plan and completion is anticipated by the end of 2021. Correspondingly, the SL on site operator emergency plan will be modified to ensure alignment and 'dovetailing' between on and off-site arrangements.

Asbestos management across the Sellafield site remains a regulatory priority for ONR. SL has developed an asbestos strategy and action plan which is now in the implementation phase. ONR will maintain focus on the implementation of the strategy and action plan to ensure risks are being effectively controlled. This is being monitored via a level 3 regulatory issue.

Periodic Safety Review

SL's Periodic Safety Review (PSR) programme has recovered from the challenges caused by the pandemic and has returned to a scheduled delivery. ONR is continuing to engage with SL over identified opportunities for improvements within the PSR programme. ONR is continuing to monitor and support delivery of improvements identified during earlier PSR inspections. The safety case arrangements are supporting adequate attention being applied to those improvements which have the greatest impact on nuclear safety.

During the reporting period, ONR carried one planned LC 15 compliance inspection of a product store within the SNM value stream. As discussed above ONR judged that compliance with LC 15 was adequate and awarded a Green (no formal action) inspection rating.

ONR has also commenced 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.

Permissioning Activity

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

- HPCP 487: WVP Line 3 throughput improvements - Operating rule D4/OR/7
- HPCP 492: sites emergency arrangements operator emergency plan v19 incorporating REPPIR 2019 (planning zone of 50km)
- HPCP 520: Endorsement to operate Central Lab facilities
- HPCP 547: LC35 improvements - remediation technical and new capability
- HPCP 559: Thorp Cell 336 and FL 6 washout

The Sellafield site Waste Vitrification Plant (WVP) processes Highly Active Liquor (HAL) from the HALES facility, which contains 99% of the radioactivity from spent nuclear fuel, into vitrified form which allows it to be stored passively in stainless steel product containers, pending long-term storage in a future geological disposal facility (UK-generated material), or return to the licensee's customers. The vitrification of HAL in WVP is a key step to hazard and risk reduction. The throughput of WVP, therefore decides to a certain extent, the rate of hazard and risk reduction on the Sellafield site.

The throughput of WVP depends on the HAL feed rate, of which the maximum limit is specified as one of the operating rules of the WVP operations.

Since the end of THORP reprocessing in 2018, the concentration of the higher thermal output oxide derived waste within the HAL waste feed to WVP has decreased substantially, i.e. HAL is significantly diluted. As a result, it takes longer to produce a vitrified waste container than when the WVP facility first operated.

SL has undertaken a "Vitrification Assist Programme" to assess options to increase throughput. This programme was conducted in collaboration with operators of similar plant in Europe and therefore sought to learn from their experience. The programme identified the option to increase the feed rate for WVP Line 3 and modifications necessary to implement. It is estimated that the increased feed rate proposed could accelerate the HAL programme by up to 2 years, which would be a benefit to the strategic objective of site-wide hazard and risk reduction.

The SL proposal was brought to the attention of ONR through the hold point control plan (HPCP 487) and therefore forms part of the planned work in assessment of LC22 modifications on the Sellafield site.

ONR has completed the assessment of this proposed modification and concluded that SL's safety case demonstrated that the potential risk increase as a result of increased HAL feed rate has no significant impact on the existing safety case for WVP Line 3. The safety case also provided confidence that the proposed modification ensures risks are maintained As Low As Reasonably Practicable (ALARP), but crucially, the increased throughput brings an overall benefit of accelerated risk reduction on the Sellafield site. On this basis, in March 2021, ONR issued Licence Instrument 532 agreeing to SL's implementation of the increased feed rate of WVP Line 3.

2.2 Other Work

PROJECT DELIVERY SUB-DIVISION

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 approval 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 continued 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's regulatory assessment of SL's proposal to deploy divers into two bays to remove the last remaining items in preparation for final isolation is now underway. This will support the permissioning decision to enable the commencement of diving as a pilot for the interim state. ONR continues to engage on the wider Bay Interim State Pilot and expect SL to submit a proposal to isolate and dewater the bays later in the year. ONR is working closely with the EA to ensure regulatory alignment.

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 reliable quality assured supply of SSBs to support the timely retrieval of legacy waste.

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 (C10) within the MSSS. ONR previously permissioned SL's request 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 C10 can commence. SL has now completed this trace active commissioning of the retrieval ventilation system.

On 3rd December 2020, ONR released the hold point associated with moving Silo Emptying Plant №2 (SEP2) onto C10 and commence its trace active commissioning while connected to the compartment. SL plans to move SEP2 onto C10 in April 2021.

COVID-19 restrictions and delays in completing inactive commissioning work on SEP2 mean that SL's retrievals programme has been extended, and waste retrieval from C10 is unlikely to commence until late 2021, possibly early 2022. 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 ALARP. ONR expects to commence C10 waste retrievals permissioning engagements in May 2021.

MSSS Original Building leakage

In November 2019, SL reported falling liquid levels from the MSSS original building 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 0.5m3/month to 2.6 m3/day.

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 any migration of significant contamination through the ground would 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 as a result of this leak. ONR's concurs with Sellafield Ltd's current judgment on this matter.

The leak was categorised against the International Nuclear and Radiological Event Scale (INES) as a Level 2 event on a seven-point scale. ONR and the Environment Agency have investigated, with ONR's work concluding with enforcement action. As a result of this action, ONR requires SL to demonstrate it has implemented feasible options that may prevent, minimise, mitigate or remediate the consequences of leaks from this facility. The company must also ensure that risks from leakage remain as low as reasonably practicable.

As of April 2021, the Environment Agency's investigation is ongoing.

ONR has raised a level two regulatory issue to monitor SL progress with managing the risks associated with the leakage. The issue has 10 associated actions which Sellafield Ltd is required to address within appropriate timescales.

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

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.

Waste Retrievals

To support waste retrievals from the legacy silos, MSSS and PFCS, SL needs to progress the construction of several new build facilities and implement modifications to existing facilities. 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). ONR is also engaging with SL regarding the impact of quality issues associated with the manufacture of $3m^3$ boxes and MSSS skips.

During February, ONR released the hold-point associated with the inactive safety commissioning of BEPPS/DIF. This will allow SL to progress the activities associated with inactive commissioning.

ONR has continued to engage with SL remotely to understand the impact of COVID-19. Whilst construction activities have been hampered by COVID-19 restrictions, SL has continued to make significant progress. ONR is satisfied that the impact of COVID-19 on this programme of work is being adequately managed by SL.

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 submitted the safety case to enable active commissioning of the waste retrievals equipment installed on PFCS compartment 5. ONR is progressing the assessment and inspection activities to inform the regulatory decision to permission active commissioning of the waste retrievals equipment located on compartment 5. COVID-19 restrictions mean that SL's overall timescale for commencing active commissioning has slipped from May 2021 to July 2021. This delay in on-site preparatory activities has meant that ONR has not yet been able to complete readiness inspection activities. ONR now expects to reach its permissioning decision in June 2021, subject to completing the inspection activities in early June 2021.

The Intermediate Level waste (ILW) retrieved from PFCS should be transferred to BEPPS/DIF. Due to the delays in the availability of BEPPS/DIF, 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. ONR continues to engage with SL to secure regulatory confidence in the delivery plans to establish this route on timescales which support the PFCS waste retrieval activities.

Special Nuclear Material (SNM)

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 continued to make significant progress.

Decommissioning (Remediation)

ONR regulatory engagements continue 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 ILW skips from legacy ponds and the other will process redundant gloveboxes.

ONR's assessment on the demonstrator to process ILW skips from legacy ponds is underway. This will support the permissioning decision to enable demonstrator operations to commence and will enable the continued retrieval of empty ILW skips from the legacy ponds.

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. ONR are now assessing SL's proposal to remove the NW corner of the diffuser which is closest to the tied tower crane. This will support the permissioning decision to commence decommissioning of the NW corner, removing the final section of the collar.

3 NON-ROUTINE MATTERS

Spent Fuel Management Value Stream (SFM)

Highly Active Liquor Evaporation and Storage (HALES)

SL notified ONR in February 2021 that some of the routine equipment proof tests had not been carried-out at the frequency assumed in the safety case. SL also self-identified failings against its processes for implementing and reviewing the proof testing schedule and deficiencies in record keeping. ONR judged that the formal investigation criteria had been met; however, since there had been no significant associated equipment failures and SL had both promptly reported the self-identified

shortfalls and action to rectify them, ONR took the decision that a formal investigation was unnecessary.

Notwithstanding this, ONR issued an enforcement letter on 11 March 2021 to address the non-compliances which led to this event. This enforcement letter relates to Licence Conditions 22 (Modification or experiment on existing plant), 23 (Operating rules), 25 (Operational records) and 28 (Examination, inspection, maintenance and testing) and requires SL to complete a prompt review of the safety impact of these non-compliances and to mitigate any additional risks whilst the situation is recovered. SL's ongoing response will be closely monitored via a Level 3 regulatory issue which has SCIE Sub-Division management oversight.

Magnox Reprocessing Facility (MRF)

SL notified ONR in October 2020 that an electrical incident had occurred within MRF where live working led to an electrical fuse being blown. ONR judged that this event did not meet the formal investigation criteria, however, minor shortfalls were identified against relevant good practice resulting in ONR issuing an enforcement letter under the Electricity at Work Regulations 1989. ONR is monitoring the implementation and delivery of the improvements to address the shortfalls in the letter via a level 3 regulatory issue.

Site Infrastructure

Corporate (Site wide)

ONR were notified of a cable strike near miss on the Sellafield site which occurred on 7 October 2020 during excavation work in an area under the control of Morgan Sindall Construction and Infrastructure Limited. Following preliminary enquiries ONR issued an Improvement Notice to Morgan Sindall Construction and Infrastructure Limited against the Management of Health and Safety at Work Act 1999, Regulations 10(1)(a) and 10(1)(b) for failure to provide comprehensible and relevant information during ground breaking activities.

Following the incident which occurred on 24th April 2020, where one person was injured and hospitalised due to a 11kV flashover causing 20% burns, ONR undertook an investigation and made the decision to prosecute Sellafield Ltd.

This case was heard at Carlisle Magistrates Court on 18 December 2020 where SL entered a guilty plea to a charge under Section 2(1) of the Health and Safety at Work etc Act 1974. The District Judge imposed a fine of £320,000 plus prosecution costs.

In recent times ONR has been notified of a significant number of electrical events affecting safety across the Sellafield site included those discussed above. In the majority of these events similar root causes have been identified relating to training and competence, and therefore ONR has issued a site wide Improvement Notice to address the wider compliance shortfalls across the site.

In the preceding period, ONR undertook preliminary enquiries following an SL report on a supply chain event relating to a conflict of interest and where an extent of condition has shown significant weld defects. These enquiries are now complete and ONR judged that there was no direct evidence that the conflict of interest resulted in

the significant weld defects. In light of this, the fact that the goods were not in service and that the supply company has since gone into liquidation, ONR judged that it would not be in the public interest to proceed with an investigation. However, ONR is carrying out a targeted intervention on SL's supply chain strategy, supplier selection, contract award and contract delivery arrangements.

ONR undertook an inspection in November 2020 relating to strategic enabler and organisational factors for cyber security and information assurance. The inspection identified some shortfalls in compliance with the Management of Health and Safety at Work Regulations 1999. As a result, ONR issued an enforcement letter requiring SL to make improvements to the assessments of cyber security risks relating to nuclear safety.

ONR followed-up on allegations made in a BBC news article on 10 March 2021 concerning racism, bullying and harassment at the site potentially endangering nuclear safety. We were naturally concerned to hear the claims, particularly any suggestion that staff have been subjected to racist abuse of any kind. As a regulator, if we had any concerns or evidence that bullying and harassment was impacting safety at the site, we would take robust action to ensure this is addressed as a matter of urgency.

As part of our follow-up actions we held discussions with affected staff, Safety Representatives and SL management on 31 March 2021. Based on these discussions, ONR is aware that incidents of racism, bullying, and harassment have occurred but was satisfied that there is no validity to the allegations made in the BBC news article that these incidents at the site challenge safety or security.

In view of the events that have occurred, ONR will follow-up with the OneLGBT+ and BAME networks, as well as SL management, to ensure that the improvement measures set out by SL are being effectively implemented across the site to ensure that safety and security expectations are met.

4 REGULATORY ACTIVITIES

Licence Instruments and Enforcement Notices Issued by ONR during this period

Date	Type	Ref No	Description
18/12/2020	Prosecution		Sellafield Ltd entered a guilty plea to a charge under Section 2(1) of the Health and Safety at Work etc Act 1974 on 18th December 2020 following an incident which occurred on 24th April 2020. SL was fined £320,000 plus prosecution costs.
21/12/2020	Improvement Notice	ONR-IN-20-005	Following a number of electrical incidents on the Sellafield site with similar root causes relating to training and competence,

			ONR issued a site wide Improvement Notice to address the wider compliance shortfalls across the site.
25/01/2021	Improvement Notice	ONR-IN-20-006	An Improvement Notice was issued to Morgan Sindall Construction and Infrastructure Limited for failure to provide comprehensible and relevant information during ground breaking activities.
5/3/2021	Agreement	LI532	Agreement to WVP Line 3 HAL Feed Rate Increase

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 six months. Further detail is available on our website.

Covid-19 (Coronavirus) (ONR position)

We are 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. Our latest position can be found on our website.

Enforcement Action

In December 2020, we announced that The Atomic Weapons Establishment (AWE) had been fined £660,000 after pleading guilty to an offence under Section 3 of the Health and Safety at Work etc. Act (1974). AWE was also ordered to pay costs of £9,945.71 during a virtual hearing at High Wycombe Magistrates Court. It followed an electrical 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.

***

In January 2021, we agreed to extend two Improvement Notices served on the Atomic Weapons Establishment (AWE), recognising the good progress made so far. The Notices, which were served in June 2019, relate to the way the company controls changes to organisational structure and resources which may affect safety.

Regulatory Updates

In October 2020, we announced an Information Exchange Arrangement (IEA) with the Canadian Nuclear Safety Commission (CNSC). The IEA is a bilateral agreement between our two organisations which provides a framework for the sharing of information, experience, and good practice to enable both parties to learn from and train each other on technical regulatory issues. It also allows for more effective communication between the two regulators.

Publication of Chief Nuclear Inspector's annual report

In November 2020, our Chief Nuclear Inspector (CNI), Mark Foy, published his annual report detailing the performance of Great Britain's nuclear industry during 2019/20.

As the regulatory head at the ONR, the CNI reported he is satisfied that overall the nuclear industry has continued to meet the high standards of safety and security required to protect workers and the public. In areas where dutyholders have fallen short of these standards, the CNI is satisfied that these facilities remain safe and that ONR has intervened in a proportionate manner to ensure plans are in place to improve performance.

***

In November 2020, we also announced the appointment of a new member to the Chief Nuclear Inspector's Independent Advisory Panel (IAP). Chris McDonald has joined the panel, which was set up in in 2016 to provide independent advice on technically complex nuclear matters by engaging with industry experts to inform our regulatory strategies and approaches. Chris has a wealth of experience in industrial strategy and manufacturing research. Chris has a degree in Chemical Engineering and has been the CEO of the Materials Processing Institute since it was founded in 2014. He has a proven record in the areas of innovation and low-carbon energy which will be of great benefit to ONR.

***

In December 2020, we became an Affiliated Organisation member of the Society for Radiological Protection (SRP). ONR has actively participated and supported SRP for many decades. This affiliation formally recognises ONR's involvement and contributions towards the radiological protection industry and enhances the links between the two organisations.

***

In December 2020, we became the UK's nuclear safeguards regulator, in charge of the domestic safeguards regime and operating the UK State System of Accountancy for, and Control of, Nuclear Materials (SSAC). Nuclear safeguards are measures to verify that countries comply with their international obligations not to use nuclear materials from their civil nuclear programmes to manufacture nuclear weapons.

Following the end of the transition period as laid out in the Withdrawal Agreement, ONR assumed its responsibilities at 2300 Thursday 31 December 2020.

This has been a major project for ONR, setting up a new team, new systems and new processes, led by Dr Mina Golshan. Since we were initially tasked by Government to establish a domestic safeguards regime after Brexit, we have developed a team of safeguards specialists, including inspectors and nuclear material accountants, and implemented a bespoke IT system, SIMRS (Safeguards Information Reporting and Management System).

***

In March 2021, we published an article about how we responded to the serious nuclear accident at the Fukushima Dai-ichi nuclear power plant in 2011 to mark the 10th anniversary.

***

In March 2021, we gave EDF permission for Reactors 3 and 4 at Hinkley Point B power station to return to service for a limited period of operation. Permission for Reactor 3 will allow it to operate to a core utilisation of 17.55 terawatt days, while permission for Reactor 4 is to operate to a core utilisation of 17.3 terawatt days, which equates to two periods of approximately six months operation for each reactor.

Corporate updates

***

In October 2020, we announced that Chief Executive Adriènne Kelbie had been appointed a Commander of the Order of the British Empire (CBE) in the Queen's Birthday Honours List 2020 for services to the nuclear industry and to diversity and inclusion.

Adriènne said: "This honour is a tribute to the ONR team and all others who work tirelessly to create a more inclusive world and safe nuclear sector, as well as those on the long and sometimes arduous journey of leadership and self-development. "Inclusion goes hand in hand with safety, because diverse teams are essential to improve decision making – therefore it's a non-negotiable in nuclear. That's why, as Chief Executive of ONR, I've been personally committed to visibly drive the inclusion agenda and encourage others to do so too.

"To be appointed a Commander of the Order of the British Empire (CBE) is an accolade for which I am enormously grateful; it strengthens my commitment to continue to inspire others to be their biggest, best, boldest selves – and change our world for the better."

***

In December 2020, we also announced that our Deputy Chief Inspector and Director of ONR's Sellafield, Decommissioning, Fuel and Waste Division, Dr Mina Golshan, had been awarded a Commander of the Order of the British Empire (CBE) in the New Year's Honours 2021, for 'services to nuclear regulation'.

Mina said: "I am very grateful to have been awarded this honour. It reflects the work of many talented and dedicated professionals that I am lucky to work with. It also shows

the significance of ONR's role in securing safe nuclear operations for the protection and benefit of the society."

Changes to ONR leadership structure

***

In February 2021, we provided an update about the leadership structural changes we initially announced in December 2020. Under existing contractual arrangements, current Chief Executive Adriènne Kelbie CBE was always expected to step down as her extended term of office comes to an end in January 2022. Current Chief Nuclear Inspector Mark Foy will step into the new combined role on 1 June 2021, when the new leadership structure will come into full effect.

We also announced that we had appointed Donald Urquhart to the newly-created role of Executive Director of Operations, which will form part of our new leadership structure. As Executive Director of Operations, Donald will be responsible for leading our regulatory work.

***

In March 2021, we announced that as part of our new leadership arrangements, we had appointed three new deputy chief nuclear inspectors (DCIs) to our regulatory and senior leadership teams: Jane Bowie, Paul Dicks and Steve Vinton, currently all senior superintending inspectors at ONR. All three new DCIs have a strong track record of delivering regulation across the organisation, and will help us maintain a focus on our Strategy 2020-25

Stakeholder Engagement

In February 2021, we encouraged interested parties to take part in a Nuclear Energy Agency (NEA) survey about building and maintaining trust between nuclear safety regulators and the stakeholders they engage with.
For the latest news and updates from ONR visit the website and sign up for our ebulletin.

6. CONTACTS

Office for Nuclear Regulation
Redgrave Court
Merton Road
Bootle
Merseyside
L20 7HS
Website: www.onr.org.uk
Email: contact@onr.gov.uk