

National Waste Programme Quarterly Report

Quarter 2 FY21/22

This report provides a “snapshot in time” of the progress being made within the National Waste Programme (NWP) community to achieve the strategic objectives of the programme. The report provides updates from NDA-estate waste producers, including a look-back, focus areas for the next quarter; a status update table on projects, events and significant deadlines for the coming quarter; and updates / changes to the threats / opportunities register.

For more information, please contact nwp@llwrsite.com



1. Overview – National Programme

1.1. Quarterly Update

- The Supply Chain Waste Acceptance Criteria Mapping resource was finalised and made available to waste producers via the NWP Hub Group.
- The final deliverable for the Problematic Waste (PW) IPT project on evaluating the treatment and disposal opportunities from the PW Inventory was completed.
- The ESC Customer Working Group was convened to provide waste producer input on three Container Concepts that were developed. A Note for the Record was produced which summarises waste producers' views on the concepts.
- A stakeholder workshop was held with waste producers to discuss the developing lexicon for misconsignment (previously referred to as mis-consignment definitions), to enable feedback from recent regulatory discussions.
- The kick-off meeting was held with the successful contractor on the NWP Project Support Contract and for the Risk-Informed Waste Management project.
- The kick-off meeting was held with the successful contractor on the IWMP Cost Norms project and the project began delivery with initial stakeholder communications.
- Stakeholder engagement on views and perspectives on training relating to non-radiological aspects of radioactive waste has concluded; with a proposal to be developed in the coming months.
- A workshop was held to explore and develop a joint understanding of the concept of Risk Informed Waste Management within the context of radioactive waste.

- Stakeholder interviews commenced on the National Strategic BAT Reviews project.

1.2. Peer Reviews & Assists

- No Peer Reviews / Assists were held this period.

1.3. Key Meetings

- The NWP Office represented Low Level Waste (LLW) Repository Ltd and supported NDA at the first Ukraine-UK Joint Technical Steering Group.
- Two WMS Customer-Supplier events were held for the Characterisation Framework. Slides from waste producers have been uploaded to the Characterisation Customer Supplier Event Hub Group.
- The NWP Office chaired an Expert View, involving a multidisciplinary team from across LLW Repository Ltd, on the disposability of mercury sulphide in the LLW Repository (LLWR) disposal system.

1.4. Focus areas for next Quarter

- Continue delivery of a range of NWP projects including the IWMP Sustainability and Characterisation projects.
- Complete delivery of the IWMP (Waste Culture) Risk Informed Waste Management project.
- Complete delivery of Phases 2 & 3 of the IWMP Cost Norms project.
- Deliver Peer Learning Event on how to open new diversion routes to support DSRL.
- Prepare for and host the Delivery Overview Group meeting scheduled for the 20th October.

2. Waste Management Services

2.1. Quarterly Update

- The first two consignments of Harwell Offsite Discharge Pipeline (approx. 23te) were consigned to the Augean Port Clarence facility.
- Cyclife were awarded preferred bidder for the Sellafield mixed metals contract, which is for the treatment of up to 900te of metallic waste per year over a 3-year period.
- Waste Management Services (WMS) have engaged with representatives of the PW IPT to discuss a scope of work on treatment of mercury waste; supplier engagement is being planned.
- A further competition was issued under the metallic framework for the treatment and disposal of 49 Pond skips originating from the Sellafield Ltd First Generation Magnox Storage Pond over the next three years.
- Representatives of the Submarine Delivery Agency (SDA), an Executive Agency of the Ministry Of Defence (MOD) visited the LLWR site. A tour of the Repository site was led by the Site Director followed by a discussion with the WMS team around use of the LLWR Waste Services contract to support the SDA's work going forward.
- A Further Competition has been launched for the Atomic Weapons Establishment (AWE) "A19" tritiated wastes package of work, which involves provision by the supply chain of a treatment and disposal solution for various legacy tritiated waste items including dump driers, tritiated targets and tritiated storage beds from the Aldermaston site.

- Responses were received from incineration service providers to a streamlined further competition to provide a wheellie bin service for solid combustible waste from HMNB Clyde.
- A readiness review was held with AWE and Cyclife ahead of commencement later this month of site works on Phase 2 of the AWE Tanks Project.

2.2. Focus areas for next Quarter

- Hold a meeting with Magnox and Tradebe Inutec to discuss the requirement for a service for the treatment and disposal of five Ductile Cast Iron Containers (DCIC) containing Intermediate Level Waste (ILW) desiccant waste which are currently in storage at the Bradwell site.
- Continue the successful treatment of pipes on the Magnox Harwell ODP Project.
- Hold project start-up meeting between LLWR, Magnox and Urenco Nuclear Stewardship (UNS) for the Chapelcross Boxed Metals Project.
- Issue a further competition under the metallic waste service framework for the treatment and disposal of eight Type C flasks and one Coffin Flask originating from the Sellafield Pile Fuel Storage Pond.
- Conclude the final consignments from the Magnox Harwell Liquid Effluent Treatment Plant project.

3. Overview – Sellafield Ltd

3.1. Quarterly Update

Q2 performance has been strong with the focus on meeting the site demand for operational wastes. The Skip Size Reduction Facility has been brought into active commissioning and actions are being undertaken for streamlining the Chemical disposal process.

Good progress has been made on a range of transformation activities, including:

- Createc have deployed a Boston Dynamics SPOT unit, with integrated payload(s) to deliver active demonstrations in Calder Hall. The demonstrations enabled learning to be captured for future use of the technology on the Sellafield Site.
- Provided input and support to the ESC Customer Working Group sessions on future container options.
- Legacy cave windows have been disposed of to Augean. These have taken some time to find a disposal solution but good supply chain working has found a solution.
- First VLLW shipment of Smart lift bags without using pallets during transport has been completed.
- The revised Waste Programme Mandate has been approved. This further clarifies the scope of the Waste Programme at Sellafield strengthening future progress.
- Active commissioning has commenced for the Skip Size Reduction Facility with the first active skip being loaded into the facility.

- Following the improvement work to increase the number of suitable waste streams that can be sent for incineration a way forward has been agreed for bags containing up to 0.4MBq. There is scope to further increase this to 0.8MBq. This has been achieved through good supply chain engagement.

3.2. Focus areas for next Quarter

- Supporting National Waste Programme project on the Mis-Consignment lexicon.
- Bring the Skip Size Reduction facility into active commissioning and operations.
- Continued progress on Decommissioning Waste Services Partnership to support High Hazard and Risk Reduction.
- Continued reduction of redundant chemical numbers on the Sellafield site through off site treatment.
- Resolution of a treatment method for the C-Type flasks and higher activity metallic waste route information gathering.
- Approval for the revised Waste Programme Mandate, Benefits Map and planning.
- Continued progress of the Waste people plan, focusing on workload planning.

4. Overview – Magnox Ltd

4.1. Quarterly Update

At the end of Q2 Magnox has shipped 308te metallic waste, 116m³ of combustible waste, 3004m³ of VLLW and has consigned one container for disposal at LLWR.

Progress has been made across a number of projects:

- Harwell ODP pipeline project – consignments began in period 4 and this has progressed to two shipments routinely being consigned per week. Service provider has begun UHP decontamination operations.
- JWMP19B forecast issued in September.
- All three waste characterisation training packages have launched including classroom (Teams) training for non-practitioners and workbook training covering application of the characterisation process and management of fingerprints.
- Rolling Programme of Decommissioning (RPD) - work has begun on development of a spreadsheet tool to facilitate sentencing of reactor dismantling LLW based upon Trawsfynydd approach.
- Active participation in LLWR's ESC development project specifically regarding container concept.
- Completion of information requirements and interviews as part of the IWMP waste metrics and characterisation projects.
- Pilot projects underway to test LLWR's new WCASS III framework.

4.2. Focus areas for next Quarter

- Participation in NWP review of national strategic BATs.
- Successfully launch the Magnox-led IWMP projects.
- RPD – completion of waste sentencing spreadsheet tool for Trawsfynydd and application to remaining Magnox sites.
- Submission of waste enquiries in support of Chapelcross legacy waste management.
- Begin retrievals of TRS waste.

5. Overview – Dounreay Site Restoration Ltd

5.1. Quarterly Update

Operations:

- LLW consignments to Waste Receipt Assay Characterisation and Supercompaction (WRACS) has slowly increased as new approved fingerprints become available.
- Non-Containerised waste characterisation work completed and items now ready for submission under Waste Services Contract.
- Oils and Solvents Waste Services Quotation received and accepted – now awaiting disposal date.

Compliance:

- The number of fingerprints implemented for use by plants / projects has increased to 23 at end of Q2 – additional resource has been sourced to accelerate delivery of the programme.
- Customer Service Level Agreements continue to permit controlled LLW generation of compliance related LLW and out of scope of regulation wastes for facilities awaiting updated fingerprints.

5.2. Focus areas for next Quarter

- Complete campaign of assay and supercompaction through WRACS and process full Half Height Isofreight (HHISO) through Compliance approvals for grout campaign.
- Submit paperwork for off-site diversion of Non-Containerised Waste via LLWR Framework.
- Implement scope of work to assess impact of fingerprint validation and underpinning project on stored legacy wastes.
- Consignment of oils and solvents for off-site disposal through LLWR Waste Services Contract.
- Continue review, revision and approval of Dounreay fingerprints.

6. Overview – LLW Repository Site

6.1. Quarterly Update

- Waste Services Quotation (WSQ) received for new Metallic Service Provider.
- Continued consignment of combustibles to Tradebe.
- Continued consignment of metals to Augean.
- Consignment of 3 x filter housing units to Augean (Plutonium Contaminated Material (PCM) Demolition Scope).
- Consignment of a HHISO to Augean containing metallic waste generated from PCM demolition.
- Preparation of Large Items from PCM demolition continues.
- LLW delivery strategy documents (compliance documentation for the PCM drum recharacterisation programme of work) submitted to the LLWR Compliance team for review (comments received and are now being addressed).
- Continue providing support to the business-as-usual projects as they arise.
- TNT task team set up and established – Royal Ordnance Factory (ROF) remediation scope of work in progress (along with a remediation strategy).
- Cadmium and soft waste loaded into drums.


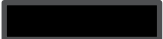


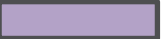
6.2. Focus areas for next Quarter

- Consignment of drums (containing cadmium & soft waste) for combustible waste treatment.
- Consignment of soft waste (>1MBq alpha) for incineration “Batch 46 combustibles”.

- Finalising assessment of contaminated oils and liquids and loading in drums for consignment (combustible waste treatment).
- Loading of ion exchange resins into drums for consignment (combustible waste treatment).
- Revisit PCM recharacterisation BAT to align with drum assay outputs (VLLW / LLW).
- Submission of Waste Characterisation Form for Recharacterised drums.
- Consignment of VLLW Batch 2 to Augean.
- Loading of metals batch 24 and Magazine demolition HHISO 2 & 3 for consignment to Augean.
- LLW Disposal Waste Enquiry – finalise and submit.
- Rework on vault disposal consignments (removal of items from HHISO containers).
- Production of Waste Consignment Information and Waste Services Variation forms for vault disposal consignments.
- Consignment of tanks 2/3 and 4/5 (magazine demolition large item wastes) to Augean.
- Consignment of other miscellaneous large items generated from demolition (i.e. shower units, assay booths etc.).
- Continuing discussions with Sellafield regarding graphite drum & radium drum population (EDS).
- Production of business case/ strategy for historic/ legacy wastes.

7. Forward Calendar

Month	Date	Activity / Event	Location
Oct	30/09/2021	Alternative Treatment Customer Supplier Forum	Virtual
	19/10/2021	LLW Programme Group Quarterly Meeting (formerly NWP Programme Managers Quarterly Meeting)	Virtual
	20/10/2021	Delivery Overview Meeting	Virtual
	27/10/2021	Oct NWP Monthly Report Waste Producer Submission	Deadline
Nov	03/11/2021	IWMP Metrics, KPIs & Incentivisation project industry workshop	FTF - Birmingham
	15/11/2021	LLW Programme Group Monthly Meeting	Virtual
	24/11/2021	Nov NWP Monthly Report Waste Producer Submission	Deadline
Dec	06/12/2021	LLW Programme Group Monthly Meeting	Virtual

KEY					
	Meeting	Project workshop	Peer Review / Peer Assist	Deadline	Customer Forum
	BM=Birmingham	MA=Manchester	WA=Warrington	C=Cumbria	T=Teleconference

8. Performance against priority business changes



Priority Business Change		Sellafield	Magnox	LLWR
Key	Overall Priority Business Change Status	Project not yet commenced	Project has commenced and is behind schedule; but is expected to recover	Project Complete
	Individual Project Status	Project commenced and is on target to deliver on or ahead of schedule	Project has commenced and is behind schedule; but is not expected to recover	








Waste management practice enables agile, efficient and effective waste flow management to support operations, decommissioning and site restoration. Waste management is fully risk-informed, enabling effective management of waste at the LLW / ILW boundary.

Magnox – Site specific decommissioning strategies.	Magnox – Implementation of WCASS III and new operating model	Sellafield – Develop and implement integrated approach for complete rad and non-rad characterisation of excavated wastes.	Sellafield – Implementation of additional capability to support the 25% acceleration of the removal and management of material from high hazard facilities.
Sellafield – Work with LLWR to address the impact diversion is having on the management of material that is not suitable for diversion.	Sellafield – Develop initial site Waste Management Plan (WMP) and site-wide Environment Safety Case (SWESC) in line with the requirements of the Guidance on Requirements for Release from Radioactive (GRR) Substances Regulations.	Sellafield – Work with LLWR to develop HHISO heterogeneity guidance relevant to High Hazard and Risk Reduction.	Sellafield – Support LLWR to develop a characterisation standard.
Sellafield – Complete handover of newly developed chemicals management route to operations.	Sellafield – Undertake further analysis to establish forward approach for managing bulk VLLW arising post filling of existing CLESA capability	Sellafield – Explore and trial alternative containers to enhance the flexibility of approaches for the transfer of material diverted from LLWR disposal.	Sellafield – Develop and implement an approach to enable the incineration of asbestos contaminated material (ACM).
Sellafield – Work with LLWR to develop a case study to assess the feasibility of storing WAGR boxes on the LLWR site.	LLWR – Review of the options for future data tracking logistics systems to meet customer requirements.	LLWR – Development of a Waste Characterisation Standard to support the NDA Good Practice Guide for disposal at the LLW Repository.	LLWR – Develop scope and manage implementation of IWMP Characterisation Programme.
LLWR – Utilisation study for the LLWR Drum storage facility.	LLWR – Re-characterisation of PCM drums for disposal.	LLWR – ESC Development Programme	

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Resourcing (including specialized resource) is resilient across the industry and supports effective waste management. There is a cross-industry understanding of skill sets, needs, projections and opportunities. Work is undertaken to mitigate risks to the waste management sector.	
Magnox – IWMP (Waste Culture) Metrics, Key Performance Indicators and Incentivisation	Magnox – Implementation of Characterisation training packages
Sellafield – Continue to work with potential supply chain partners to understand the benefits of direct engagement to provide decommissioning and waste management support.	Sellafield – Review and revise Waste training, SQEP roles and career pathways in line with the Waste People Plan.
LLWR – Development and implementation of Integrated treatment services (covering Expert Services and Alternative Treatment; Waste Characterisation Assurance Support Services (WCASS); Combustible Treatment and Supercompaction	LLWR – Develop and implement plan for improving skills and knowledge in managing the non-radiological aspects of waste.

Management of problematic wastes and wastes at the LLW / ILW boundary is business-as-usual.	
Magnox – Management of Magnox problematic wastes	Magnox – Mixing and conditioning borderline and LLW sludges, resins, and other wet / organic wastes across Magnox to optimise disposability.
Sellafield – Work with LLWR to develop and implement the BAT approach for the management of 3000 drums of AGR Graphite.	Sellafield – Work with LLWR to identify the appropriate approach to handle the residual materials from the Floc Storage Tanks.
Sellafield – Work with LLWR to progress disposal of Tranche 2 of WAGR boxes that have been determined to be suitable for management as LLW.	

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9. Strategic Threats and Opportunities

Strategic Threats					
	<2%	2-25%	26-50%	51-80%	>80%
	Very Unlikely	Unlikely	Possible	Likely	Very Likely
Severe	High (11)	High (15)	High (17)	Very High (19)	Very High (20)
Major	Medium (7)	Medium (9) 3 5	High (14) 1	High (16)	High (18)
Moderate	Low (4)	Low (5) 4	Medium (8) 2	High (12)	High (13)
Marginal	Very Low (1)	Very Low (2) 7 6	Low (3)	Medium (6)	Medium (10)

	Strategic Threat
1.	Significant waste mis-consignment event causes partial or full closure of diversion or disposal route(s).
2.	Insufficient radiological, non-radiological or volumetric capacity in the supply chain. Or excessive demand for capacity.
3.	Insufficient non-radiological, radiological or volumetric capacity at LLWR.
4.	Changes in legislation, governmental policy or regulatory perspective prevents or significantly impacts execution of LLW Strategy.
5.	Large volumes of forecast and un-forecast waste from rad contaminated land remediation generated and managed off-site as lower activity waste.
6.	Non-industry stakeholder concerns over radioactive waste management constrain access to existing routes and / or development of new routes and facilities.
7.	Global event (such as a future pandemic or war) impacts functioning of all parts of the LLW community, waste management and route availability.

Strategic Opportunities					
	<2%	2-25%	26-50%	51-80%	>80%
	Very Unlikely	Unlikely	Possible	Likely	Very Likely
Marginal	Very Low (1)	Very Low (2) 3 4	Low (3) 5	Medium (6)	Medium (10)
Significant	Low (4)	Low (5)	Medium (8) 1 2 6	High (12)	High (13)
Major	Medium (7)	Medium (9)	High (14)	High (16)	High (18)
Substantial	High (11)	High (15)	High (17)	Very High (19)	Very High (20)

	Strategic Opportunity
1	Positive step change in the sustainability of the supply chain.
2	Relevant ILW diverted from HAW disposal.
3	Buffer storage capabilities can be mobilised for contingency situations (only).
4	Improved use of transport infrastructure to support management of LLW.
5	Fit-for-purpose flexible and agile packaging fleets available for LLW management.
6	Management solutions available and in use for complex, challenging and problematic LLW (PW).