Ensuring robust decisions and deployable solutions in UK LLW management

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Content

- Context and background (NDA, UK LLW inventory)
- UK Nuclear Industry LLW Strategy
- LLW management decisions
- Support
- Progress
Nuclear Decommissioning Authority

- Public body created in 2004

**Core objective**
- ensure historic civil public sector nuclear legacy sites are decommissioned safely, securely, cost effectively and in ways that protect the environment.

**Also**
- operate existing commercial facilities (& use revenue)
- scrutinise the site decommissioning plans of EDFe
- implement geological disposal
- deliver and implement LLW strategy
We are involved in
• Power generation
• Reprocessing
• Decommissioning nuclear sites
• .... generating and managing waste

Also
• We own the UK Low Level Waste Repository
• UK’s Strategic Authority for LLW management
LLW Inventory
LLW Inventory
The problem...
UK Nuclear Industry LLW Strategy

2.1 Principles
2.2 Integrated Waste Management
2.3 Planning and decision making
2.4 Characterisation and waste information
2.5 The Waste Hierarchy
2.6 Packaging and transport

UK Nuclear Industry LLW Strategy

- Application of the waste hierarchy
- Make best use of existing assets
- Opening and using new routes
LLW management in the past

Transport

Compaction & Packaging

Long-term management options

LLWR

Reuse and Recycle

Alternative VLLW Disposal

Exempt waste

LLW Strategy

Characterise, Sort and Segregate

Compaction & Packaging

Metal recycling

Incineration

Reuse and Recycle

Alternative VLLW Disposal

Exempt waste
Increased choice

Increased choice = more decisions

... more decisions = more difficult...?
Decisions

…first work out what you “could” do and then work out what you “should” do
Decisions

“Benefits realisation”

Outputs

Outcomes

Benefits

What you’ve done

What is different

What is better

What is better

What is different

What you’ve done
Key factors

- Cost
- Time
- Environmental Impact
- Regulatory and stakeholder pressures
- Lots of others…

Influences…?
- supply chain involvement and development
- market forces
- economies of scale
- incentivisation through contracts and pricing
Support

LLWR

Operate LLW Repository

Operate LLW Repository

Run National LLW Programme

Widen service offering

Coordination
Support

National LLW Programme

- Projects, activities, guidance
- Led by LLWR on NDA’s behalf
- Monitor industry demand (JWMPs)
- Develop services accordingly
- Coordinate good practice sharing

Strategic BAT

Strategic level Best Available Technique (BAT) studies have been undertaken to determine and underpin the strategic decisions relating to waste treatment for VLLW, combustible waste and metallic waste. The BAT studies demonstrate systematic methodology involving technical, scientific qualitative and value for money judgements.

- Very Low Level Waste – Volume 1 (PDF)
- Very Low Level Waste -Volume 2 (PDF)
- Organic LLW National BAT Report (PDF)
- Combustible Waste (PDF)
- Metallic Waste (PDF)
- Review of Strategic Options for Metallic Waste – 2011 (PDF)

Guidance Documents

- Waste Management Hierarchy Guidance Document (PDF)
- Website on waste minimisation practices (PDF)
- LLW Segregation Guidance (PDF)
- On Site Disposal Business Case Guidance (PDF)
- Pond Furniture Strategic Guidance (PDF)
- Cross Boundary Waste Decision Making Guidance (PDF)

Technical Analysis Documents

Studies have been produced to support the development of best practices and to develop the baseline information available to support delivery of the NWP.

- Independent Metal Decontamination Study (PDF)
- Consolidated R&D Recommendations for Hazardous and Orphan Wastes (PDF)
- Recycled Concrete Aggregate Stakeholder Dialogue (PDF)
- Transport Feasibility Study (PDF)

Training

We have developed e-learning modules to support Waste Consignors in the delivery of the UK Low Level Waste Strategy. For course registration details please contact the National Programme Office at NWP@ilwsite.com
Support

LLWR Service offering

- Characterisation
- Packaging
- Transport
- Metal treatment
- Combustible waste services
- Supercompaction
- Disposal at commercial landfill
- Disposal at LLWR

One contract

http://llwrsite.com/national-waste-programme/services/
Support

BAT Guidance

- “...the principles, processes and practices that should be used when identifying and implementing BAT for the management of radioactive waste”

Support

Regulators

• Amendments to permits / authorisations
• Engagement at programme level (in addition to site level)
• Guidance
• Communication
Support

Emphasis on planning
- Licence condition 35 – Decommissioning
- Lifetime Plan
- Integrated Waste Strategy
- Joint Waste Management Plan
- “Flywheel” projects

Progress

![Bar Chart]

- **Total Diversion**
- **Total Disposal to LLWR**

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Waste Volume, m³</th>
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<tbody>
<tr>
<td>Q1 11/12</td>
<td>500</td>
</tr>
<tr>
<td>Q2 11/12</td>
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<tr>
<td>Q3 11/12</td>
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<td>Q4 11/12</td>
<td>500</td>
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<tr>
<td>Q1 12/13</td>
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<td>Q4 12/13</td>
<td>1500</td>
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<tr>
<td>Q1 13/14</td>
<td>500</td>
</tr>
<tr>
<td>Q2 13/14</td>
<td>1000</td>
</tr>
</tbody>
</table>
Progress

[Graph showing waste volume over time with categories: Metal, VLLW & LA-LLW, Combustible]
Progress

- Financial pressure…
Progress

- Disposal capacity availability
Thank you!
Reserve slide 1

SLCA = Site Licence Company Agreement
PBA = Parent Body Agreement

Diagram:
- NDA
- PBA
- SLCA
- Parent Body Organisation
- Ownership
- Site Licence Company
- Regulators
February 2014 Waste Metric Dashboard
Period 11: 20th January to 22nd February FY 2014

UK Waste Diversion

The National Waste Programme aims to communicate progress in the implementation of the Waste Hierarchy and the Nuclear Industry Strategy for Low-Level Waste Management across the UK. This dashboard shows key metrics that demonstrate the continued diversion of waste away from direct disposal and the effective use of key national assets, such as LLWR and waste treatment facilities, in the UK. This is based on delivery of Joint Waste Management Plans (JWMPs). The objective is to encourage transparency and communicate progress to all stakeholders.

<table>
<thead>
<tr>
<th>JNWP Targets</th>
<th>JNWP Targets</th>
<th>LLWR Targets</th>
<th>LLWR Targets</th>
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<tbody>
<tr>
<td><strong>Sellafield Ltd</strong></td>
<td><strong>Magnox Ltd</strong></td>
<td><strong>Sellafield Ltd</strong></td>
<td><strong>Magnox Ltd</strong></td>
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<tr>
<td>2013/14</td>
<td>2015/16</td>
<td>2013/14</td>
<td>2015/16</td>
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<tr>
<td>Cumulative</td>
<td>Total</td>
<td>Cumulative</td>
<td>Total</td>
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<tr>
<td>Direct Disposal</td>
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<td>2015 135</td>
<td>2013 112</td>
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<tr>
<td>Indirect Disposal</td>
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<td>2015 135</td>
<td>2013 112</td>
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<tr>
<td>Total</td>
<td>2013 224</td>
<td>2015 270</td>
<td>2013 224</td>
</tr>
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</table>

**Notes:**
- LLWR targets have been revised in line with new nuclear waste management standards.
- JNWP targets are based on the latest information available at the time of publication.
- LLWR targets are based on the latest information available at the time of publication.

**Graphs:**
- Cumulative waste diversion by facility.
- Total waste managed by facility.
- Comparison of waste diversion targets and actuals.

**Maps:**
- UK waste diversion by region.
- Waste management sites across the UK.

**Data Sources:**
- Sellafield Limited.
- Magnox Limited.
- Low Level Waste Repository Limited.

**Contact:**
- Sellafield Limited.
- Magnox Limited.
- Low Level Waste Repository Limited.