

Briefing Note for the Cumbria Mineral and Waste Plan - LLW Repository Ltd

Introduction

LLW Repository Ltd is the Site Licence Company (SLC) with the legal responsibility for operating the National Low Level Waste Repository (LLWR) in Cumbria, which is owned by the Nuclear Decommissioning Authority (NDA). In 2008 the NDA awarded the contract to manage and operate the SLC to UK Nuclear Waste Management Ltd (UKNWM), an international consortium of AECOM, Studsvik and Areva. This consortium is referred to as the Parent Body Organisation (PBO). The PBO contract with the NDA not only covers the operation of the LLWR site, but also the implementation of the UK's Strategy for the Management of Solid Low Level Waste (LLW) from the Nuclear Industry (ref 1).

The purpose of this briefing note is to provide an overview of the organisation and its role in the management of radioactive waste in the context of the Cumbria Mineral and Waste Plan, as requested by the Inspector.

The LLWR Site

At the core of the organisation is the operation of the LLWR site, located near the village of Drigg in Cumbria, the UK's only national facility for the disposal of LLW. The role of the LLWR is to accept LLW from waste producers across the UK which meets the acceptance criteria for the site and which requires disposal to such an engineered disposal facility, in a way that protects people and the environment. The waste acceptance criteria are dictated by the Environmental Safety Case (ESC) and subsequently the Environmental Permit, awarded by the Environment Agency. The site receives LLW from a range of customers, including the nuclear industry, the Ministry of Defence, non-nuclear industries, and educational, medical and research establishments.

The waste is generally received at the site in large metal ISO-freight containers, which are prepared for final disposal by pouring a fluid, cement-based grout into the container to immobilise the waste. These grouted containers are then placed in the engineered vault for disposal. There are currently two vaults in operation – Vault 8, which is almost full, and the newer Vault 9. In November 2015, following robust review of the ESC and a formal request for a variation, the LLWR received a revised environmental permit from the Environment Agency for LLW disposal in these and future vaults. In July 2016 LLWR received planning permission from Cumbria County Council for installation of a final cap over Trenches 1-7, existing Vaults 8 and 9 and future Vaults 9a, 10 and 11. Incorporated in the planning consent were ancillary works to support construction activities, higher stacking and conversion of Vault 9 from storage to disposal. The planning consent is time bound to 2055.

As noted above, the site has seven clay lined, landfill style trenches which were used for the disposal of LLW from the late 1950s to the early 1990s. These are now closed with an interim engineered cap to provide protection from the elements and reduce the ingress of water.

The operational and maintenance activities on the site generate small volumes of LLW which are managed in accordance with the LLW Strategy and the waste management hierarchy. Some of the LLW requires disposal in the LLWR (where suitable, these wastes are sent to Sellafield for supercompaction before returning for disposal in the LLWR, to minimise disposal volumes), while the remainder of the waste is diverted from the site, either for metal treatment, incineration or for disposal to a permitted landfill site.

The site is also undertaking a programme of decommissioning of five legacy, semi-underground bunkers which were used for storing plutonium contaminated material (PCM) from Sellafield in the 1950s and 1960s. Whilst the bulk of this material was removed in the 1990s and returned to Sellafield; the structures had become contaminated. This decommissioning programme generates PCM waste which is packaged into drums and which will be sent to Sellafield for long term storage pending the availability of the Geological Disposal Facility (GDF).

The LLWR is regulated by the Environment Agency through its permit and by the Office for Nuclear Regulation through 36 Site Licence Conditions; and interfaces with Cumbria County Council as the Waste Planning Authority for Cumbria for all waste related planning matters.

Whilst the LLWR site is not formally designated a National Infrastructure Project, its strategic importance and the national role it performs should not be underestimated. Additionally, whilst the current planning consent, known as the Repository Development Programme (RDP), expires in 2055, it is the SLC's intention to develop the site to its full capacity subject to the necessary permits and consents being in place. This would effectively see the LLWR operating well into the next century.

The National Programme and the Waste Management Services

LLW Repository Ltd is also responsible for implementing the UK Solid LLW Strategy on behalf of UK Government and the NDA. It does this through the National LLW Programme, which works collaboratively with a wide range of stakeholders (including Government, Regulators, waste producers and the supply chain) to influence the embedding of LLW management best practice across the nuclear industry to deliver the Strategy. At the core of the Strategy is the requirement to apply the waste management hierarchy (prevention, minimisation, reuse, recycling, disposal), wherever practicable, to the management of LLW.

The success of the National Programme is evidenced by the significant reduction in the number of containers of LLW being disposed to the LLWR since 2009 (from 476 containers in 2009/10 to 172 in 2015/16); while the volume of LLW generated per year has increased from just under 5,000 m³ in 2009/10 to over 15,000 m³ in 2015/16.

A significant contribution to this change in LLW management approach in the UK has been the provision of a range of services through the Waste Management Services organisation in LLW Repository Ltd, which has implemented a number of commercial frameworks to allow waste generators (including Sellafield) to access a range of routes for the treatment and alternate disposal of LLW. These include:

- The treatment and recycling of metallic waste
- The incineration of suitable soft solid waste

- The diversion of waste to landfill sites which are permitted to accept either VLLW or lower activity LLW
- Supercompaction of soft waste to ensure that waste which does need to be sent to LLWR has minimised volume

Additional commercial frameworks are in place to enable the use of these routes, including characterisation, transport, packaging, and alternate treatment services.

The majority of the facilities operated by the supply chain are located outside Cumbria; the exceptions being the metal recycling facility at Lillyhall, operated by Cyclife; the permitted landfill site, also located at Lillyhall, operated by FCC Environment; and the WAMAC supercompaction facility at Sellafield (which accepts waste from a range of waste generators for supercompaction prior to disposal at the LLWR). As a result the majority of LLW diverted from the LLWR by Sellafield or LLW Repository Ltd is sent out of the county for treatment or alternate disposal.

References

1. DECC, February 2016, UK Strategy for the Management of Solid Low Level Waste from the Nuclear Industry