

Mott MacDonald has been involved in the design verification, safety cases and assessments on a large number of above ground Intermediate Level Waste (ILW) and Low Level Waste (LLW) stores in the UK. The requirement for a waste store is to provide a safe and secure environment for the waste package so that it will meet Nirex specifications for long-term disposal.



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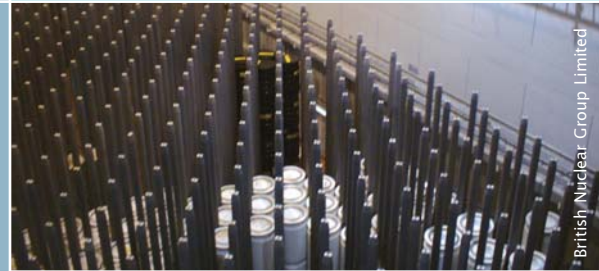
Nuclear services

Waste stores

Mott MacDonald employs key experts to deliver waste stores in the UK. We have experienced engineers and managers who can help customers define a robust strategy through to implementation. Mott MacDonald is a registered practitioner in the Directory of the UK Society of Earthquake Engineering and Civil Engineering Dynamics and our foundations and geotechnics team is the focus of our activity in this field.

Mott MacDonald's in-depth knowledge of waste store engineering, planning and environmental aspects allows the company to align itself to the needs of any waste project and the needs of its customer. Our specialists have reputations that are recognised by not only our peers but by our competitors.

At Mott MacDonald, we have undertaken various design studies to explore cost effective alternatives and viable methods for the safe retrieval of intermediate level waste located in underground storage tubes. Our approach identified practical means for the removal of structures by utilising the latest cutting and drilling techniques. Our methodology also employs the latest well proven techniques to achieve a high performance rate for the retrieval of two structures per week.



British Nuclear Group Limited

We deliver

- Buildability
- Containment
- Innovation
- Operations
- Optioneering
- Maintenance
- Multi-disciplinary design services
- Project management
- Safety case led design
- Shielding
- Stakeholder engagement

**Innovative integrated design
and management solutions for
today and tomorrow**

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MacDonald



Project overview

Dounreay – D3900 Project

Mott MacDonald was responsible directly to UKAEA for the outline design for a newly proposed contaminated waste store. Our scope of work comprised the development, in consultation with stakeholders, of a comprehensive specification for the new waste store along with an outline scheme design. We also provided important design input into the structural and civil aspects and analysed these components to confirm that the design met all seismic withstand criteria to support the safety case. Studies into the availability and reliability of mechanical/electrical systems were also performed as part of the operational justification for the throughput of the facility.

Mott MacDonald also provided project management services associated with the procurement of the contractor and undertook engineering substantiation of the detailed design to confirm its suitability for a waste store.

Contact us

Terry Elliott

T 0161 926 4000

F 0161 926 4050

E terry.elliott@mottmac.com

David Powell

T 0208 774 2000

F 0208 681 5706

E david.powell@mottmac.com

As part of any waste store design we also employ innovators in the field of safety, risk and environment. Our specialists understand the complex regulatory, planning and environmental aspects in the consideration of waste store design. We are also leaders in the field of foundations, geotechnics and seismic assessment to ensure that any LLW/ILW waste store that is ultimately constructed, is built on stable ground and able to withstand external hazards at the required acceleration. Our waste store designers also have the capability to design the store against internal hazards such as flood, fire and dropped loads during container movements.

In addition, we have expertise in designing the internal mechanical and electrical systems within the store, capable of controlling contamination spread and minimising radiation exposure of operators during the waste stores operational period. We employ experts in the fields of ventilation, mechanical and electrical engineering plus civil and structural engineering.

Our skills

Acoustics

Blast, pipe whip and jet loads

Building services

Civil and structural engineering

Containment

Finite element analysis

Fire engineering

Geotechnics and foundations

HVAC

Independent technical assessment

Mechanical and electrical engineering

Missile generation

Seismic engineering

Shielding

Shock and blast

Ventilation

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