DSG(2015)C045

Higher Activity Radioactive Waste Draft Implementation Strategy - Consultation

Charles Stewart Roper

17 June 2015

www.gov.scot/Publications/2014/12/8263

The Scottish Government

Higher Activity Waste (HAW) in Scotland

The challenge

Estimated there will be 42,500 m3 HAW

No HAW near-surface disposal facilities yet built

Hunterston A & B, Chapelcross and Torness

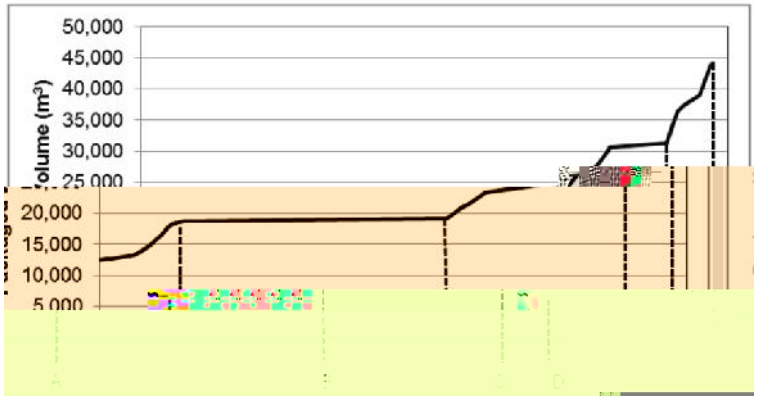
Significant HAW type will be **irradiated graphite**

Dounreay

Significant HAW type will be **Raffinate** (a by-product from the fuel reprocessing)

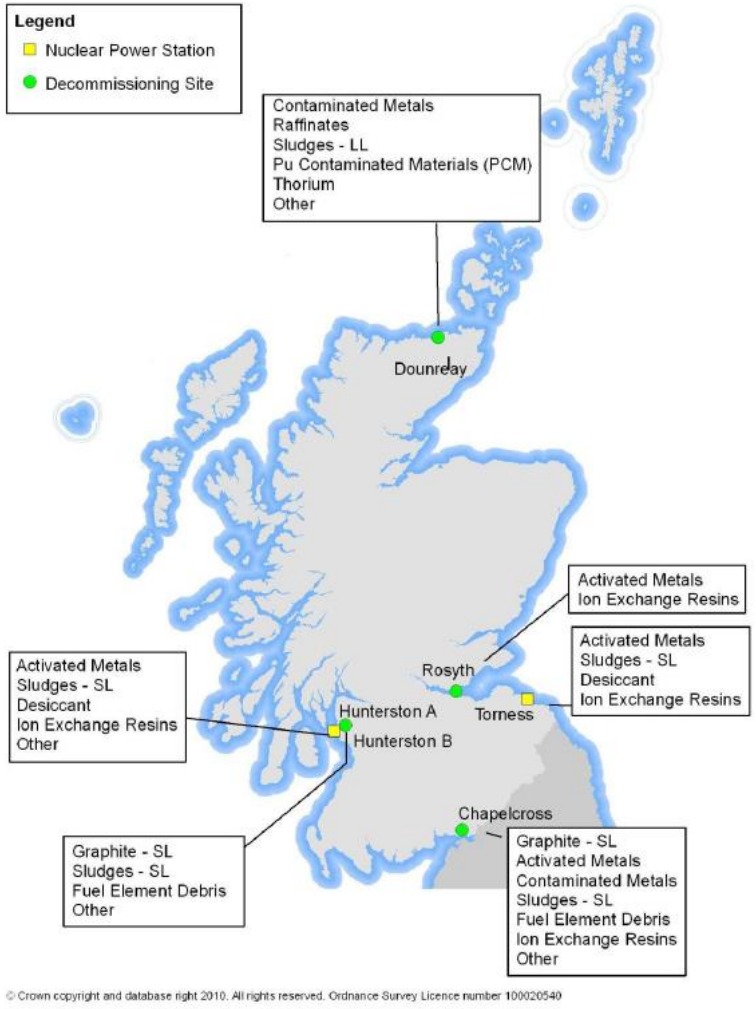
Central and Southern Scotland

NDA preferred option is ILW storage at each site except Hunterston B where resin & sludge transferred to Hunterston A



Indicative timeline for HAW packaged waste in Scotland

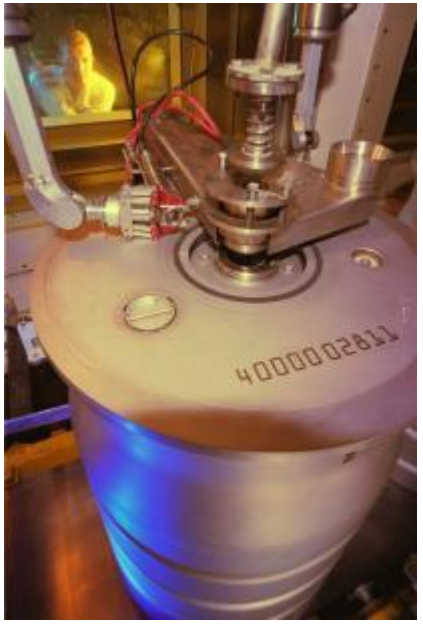
A - 2030
B - 2070 – 2085
C - 2115
D - 2120



The Scottish Government

Raffinate

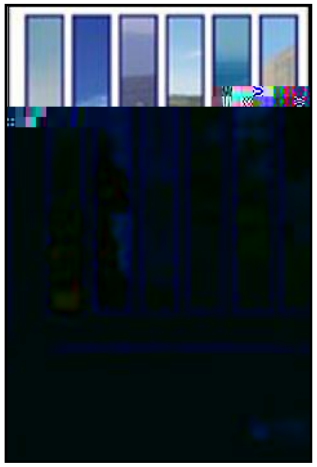
- DRSL images of cementation



The Scottish Government

HAW Policy Statement

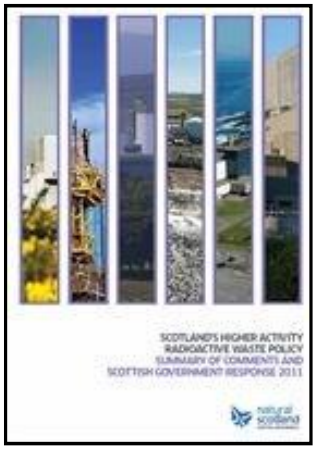
'*Long-term management of higher activity radioactive waste (HAW) should be in near surface facilities*' and as near to the site where the waste is produced as possible



Developers will need to demonstrate how the facilities will be monitored and how waste packages, or waste, could be retrieved.

All long-term waste management options will be subject to robust regulatory requirements.

The Policy is not prescriptive in its approach, recognising that it applies to Waste which may not be produced for decades and for which long-term management options may not be feasible at present or have yet to be developed.



Policy includes a commitment to develop an **implementation strategy**

The Scottish Government

Implementation Strategy Development

Process

Draft Implementation Strategy was drafted by the Scottish Government

Project Board

- Advising the Scottish Government on the scope and objectives of the project.
- Monitoring progression of milestones and helping ensure outcomes are delivered.
- Providing advice and assistance to the Scottish Government on the development of the Strategy.

Project Board members	
NDA Site Licence Companies (Dounreay, Hunterston and Chapelcross)	ONR
SCCORS (Scottish Councils Committee on Radioactive Substances)	EDF Energy
NDA (Nuclear Decommissioning Authority)	Babcock / Rosyth
Scottish Environment Protection Agency (SEPA)	Magnox

Observers

- Site Stakeholder Groups
- CoRWM (Committee on Radioactive Waste Management)

The Scottish Government

Phase 1: present – 2030

Current plans

- Chapelcross and Hunterston A prepare for the sites entering Care and Maintenance in 2028 and 2022 respectively.
- Dounreay expected to reach Interim End State in 2029/30, by which point all HAW waste is expected to be in two ILW stores.
- Torness and Hunterston B operate until 2023 and then prepare for the Care and Maintenance phase.

Key Scottish Government actions

- Develop SG HAW IS Strategy
- Assist in development and approve NDA Strategy and NDA Business Plan*
- Maximise opportunities in R&D and innovation
- Working with industry to review and enhance energy skills and supply chain capacity
- Ensure radioactive waste policies and plans remain compatible with EU's Radioactive Waste and Spent Fuel Management Directive
- Prepare for review of SG policy

* in relation to Scotland and in consultation with UK Government

The Scottish Government

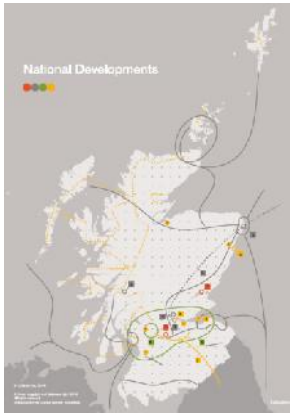
Phase 2: 2030 – 2070

Current plans

- All HAW arising at Dounreay and some of the HAW from Hunterston A and Chapelcross will be in storage
- Hunterston A and Chapelcross will be in Care and Maintenance with only the HAW associated with the dismantling of the reactors yet to be retrieved
- EDF Energy sites execpted to enter Care and Maintenance in 2033 (ten years after projected closure).
- During this phase little HAW is expected to arise from the sites.
- The existing ILW stores will be under management by the NDA's Site Licence Companies or EDF Energy.

Key Scottish Government actions

- Deliver options for managing the waste identified during phase 1
- Develop plans for the siting and construction of new near surface disposal facilities
- Ensure no obstacles to the responsible development of such facilities and infrastructure (eg planning)

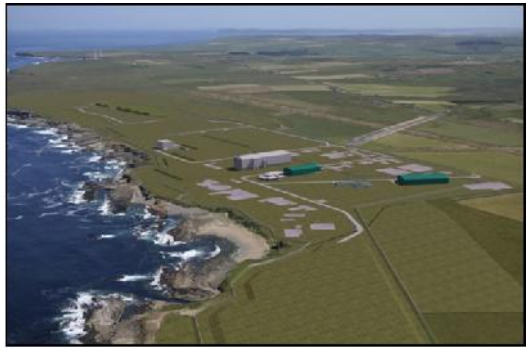


The Scottish Government

Phase 3: Post 2070

Current plans

- Reactor dismantling is expected to take place at the decommissioned sites and over 60% of the HAW in Scotland is expected to arise.



- Final decommissioning work during this phase will include safely dismantling and storing, in accordance with appropriate long-term management requirements, the reactor vessels contained within the remaining reactor safestores.

Key Scottish Government actions

- Suitable disposal facilities at this stage important to avoid building more stores for the retrieved waste.

- Long term storage **does not mean indefinite storage** but it may mean waste is stored for many decades.

- Understand advances in radioactive waste management and maintain a suitable programme of research

The Scottish Government

Supply chain, skills & R&D

Nuclear Supply Chain

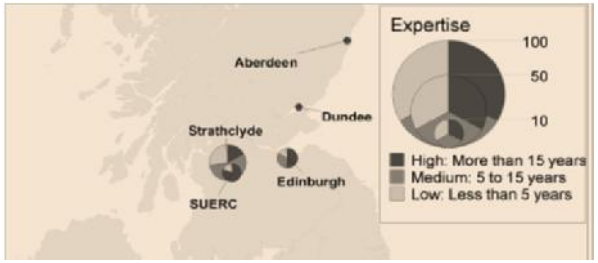
- Working with the NDA, industry and Scottish development agencies to enhance the nuclear supply chain in Scotland
- Focus on support for SMEs
- Opportunities at home and abroad

Skills

- Working with SDS, NDA and NSAN to understand, review and enhance skills in energy sector
- Energy Skills Investment Programme

R & D

- NDA Research Board
- Nuclear Innovation and Research Office (NIRO)
- Nuclear Innovation and Research Advisory Board (NIRAB)
- Horizon 2020



The Scottish Government

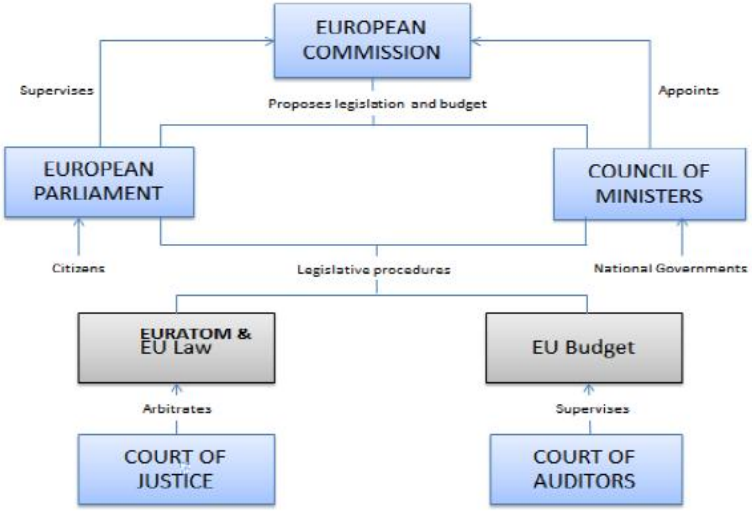
International Framework

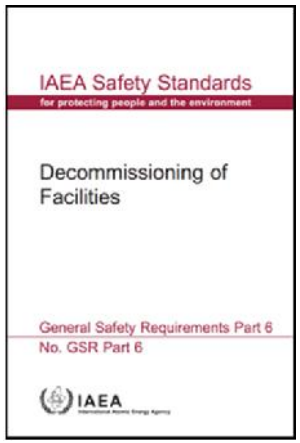
IAEA (International Atomic Energy Agency)

- International Decommissioning Network
- Peer Reviews
- IAEA Safety Standards

EURATOM & EU Law

- All EU Member States must have National Programmes to deliver spent fuel and radioactive waste management policies





The Scottish Government

Please respond

Consultation closes 7 August

The Scottish Government