

National policies on the long-term management of higher activity wastes

Introduction

This note provides an update to Nirex Technical Note (Doc number 436003v9) "A survey of national policies and programmes relating to long-term radioactive waste management" originally published in 2004.

An attempt has been made to cover all countries with arisings of long-lived intermediate-level waste (LL-ILW), high-level waste (HLW) or spent fuel (SF) which cannot be managed in the long-term by near surface disposal. The information encompasses all countries that have operated a civil nuclear programme (including those with no currently operating programmes, e.g. Italy) plus a number of others which have / will have to implement long-term management of LL-ILW, HLW, or spent fuel (from research reactors unless returned to US or Russia). All these countries will eventually require a national policy and implementation programme for the long-term management of its wastes and many have these in place and are well advanced in implementing their declared policies.

Sources of information

The main sources of information are the Joint Convention (JC) national reports available through the IAEA website (www.iaea.org). The latest versions were produced in 2005-06 in preparation for the JC meeting in May 2006.

For countries outside of the JC, other sources were used such as host organisations websites, or references from the original Survey report.

Table 1: Countries covered by this note

Europe	Bulgaria	Czech Republic	Denmark	Hungary	Latvia	
	Lithuania	Poland	Romania	Slovakia	Slovenia	
	Belgium	Finland	France	Germany	Italy	
	Netherlands	Norway	Spain	Sweden	UK	Switzerland
Pacific Basin countries	Australia	China	Japan	N Korea	S Korea	Taiwan
Former Soviet Union Countries	Armenia	Kazakhstan	Russian Federation	Ukraine		
Americas	Argentina	Brazil	Canada	Mexico	United States	
Rest of the World	India	Iran	Israel	Pakistan	South Africa	

Abbreviations:

DGD – deep geological disposal;

SF – Spent Fuel;

RF – Russian Federation

RR – Research Reactor

Green – decision taken in favour of DGD

Light green – no decision but preference for DGD

Amber – No decision yet**Red** – not known.**Table 2: Policy summaries**

	Region /Country	Policy	Source
Europe			
1	Belgium	DGD of SF	Joint Convention National Report 2005/2006
2	Bulgaria	SF repro in RF with return of waste. Then DGD.	Joint Convention National Report 2005/2006
3	Czech Republic	DGD of SF	Joint Convention National Report 2005/2006
4	Denmark	Some RR SF will return to US. Other RR SF – no decision.	Joint Convention National Report 2005/2006
5	Finland	DGD of SF	Joint Convention National Report 2005/2006
6	France	Repro of SF then DGD	Joint Convention National Report 2005/2006
7	Germany	DGD of all waste	Joint Convention National Report 2005/2006
8	Hungary	No decision yet	Joint Convention National Report 2005/2006
9	Italy	Repro then deep DGD of returned waste	Joint Convention National Report 2005/2006
10	Latvia	RR SF back to RF, but DGD for long lived ILW	Geological Challenges in Radioactive Waste Isolation. April 2006. Witherspoon & Bodvarsson.
11	Lithuania	DGD of SF	Joint Convention National Report 2005/2006
12	Netherlands	Store 100y then decide on DGD or storage	Joint Convention National Report 2005/2006
13	Norway	DGD	Joint Convention National Report 2005/2006
14	Poland	DGD	Joint Convention National Report 2005/2006

	Region /Country	Policy	Source
15	Romania	DGD	Joint Convention National Report 2005/2006
16	Slovakia	DGD	Joint Convention National Report 2005/2006
17	Slovenia	Decide in 2020	Joint Convention National Report 2005/2006
18	Spain	Storage now decide definitively in the future	6 th General Radioactive Waste Management Plan, 2006
19	Sweden	DGD	Joint Convention National Report 2005/2006
20	Switzerland	DGD	www.nagra.ch
21	UK	DGD	
Former Soviet Union			
22	Armenia	No decision yet but DGD preferred	Based on original Programme and Policies document (2004) and web research. (Previous version of Geological Challenges ...)
23	Kazakhstan	No decision yet but DGD preferred	World Nuclear Association
24	Russian Federation	DGD of reprocessed SF	Joint Convention National Report 2005/2006
25	Ukraine	DGD	Joint Convention National Report 2005/2006
Americas			
26	Argentina	DGD	Joint Convention National Report 2005/2006
27	Brazil	No decision yet on repro or DD – implication is DGD	Joint Convention National Report 2005/2006
28	Canada	DGD	Joint Convention National Report 2005/2006
29	Mexico	DGD	Geological Challenges in Radioactive Waste Isolation. April 2006. Witherspoon & Bodvarsson.
30	United States	DGD	Geological Challenges in Radioactive Waste Isolation. April 2006. Witherspoon & Bodvarsson.
Pacific Basin			
31	Australia	No decision yet	Joint Convention National Report 2005/2006
32	China	No decision yet but DGD preferred	Geological Challenges in Radioactive Waste Isolation. April 2006. Witherspoon & Bodvarsson.
33	Japan	DGD	Joint Convention National Report 2005/2006
34	N Korea		No reliable information

	Region /Country	Policy	Source
35	S Korea	No decision yet but DGD preferred	National Academy Press, 2005 Workshop paper
36	Taiwan	DGD	Joint Convention National Report 2005/2006
Rest of World			
37	India	DGD	Based on original Programme and Policies document (2004) and web research
38	Iran	No policy	Based on original Programme and Policies document (2004) and web research
39	Israel		No reliable information
40	Pakistan	No decision yet	Based on original Programme and Policies document (2004) and web research
41	South Africa	No decision yet but DGD preferred	Department of Minerals and Energy Radioactive Waste Management Policy and Strategy for the Republic of South Africa 2005

Summary statement:

There are some 39 countries which will have to address the long-term management of long-lived wastes arising from either civil nuclear power production or research reactor operation, on the assumption that we exclude the two countries (N Korea and Israel) for which there is no information. As of 2006, 25 have taken a policy decision in favour of deep geological disposal (although most are not yet implementing the policy). A further 14 had taken no decision, although 6 of these have a preference for geological disposal. No country has adopted a policy in favour of indefinite (as opposed to interim) storage.

The US has an operational facility (the Waste Isolation Pilot Plant (WIPP)) which is disposing of transuranic wastes (broadly equivalent to LL-ILW) and is about to apply for a licence to construct a geological disposal facility at the Yucca Mountain site which will take spent fuel and HLW. Germany has taken a decision to have disposal facilities for all waste available by 2030 (studies at the proposed Gorleben facility have been suspended), and is preparing to operate the Konrad facility for non-heat generating wastes in 2013; it is in the process of backfilling the Morsleben facility which contains LLW. Canada is developing a geological disposal facility for L/ILW at Kincardine.

Sweden will make a choice between two sites it is currently characterising for the disposal of spent fuel in 2009. Finland is characterising its preferred site for the disposal of spent fuel. Several other countries are also undertaking site investigations for geological facilities, including, Switzerland. France is investigating the area around its underground research laboratory at Bure in NE France with a view to it becoming the location for a geological disposal facility for high activity long-lived waste.

NDA

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