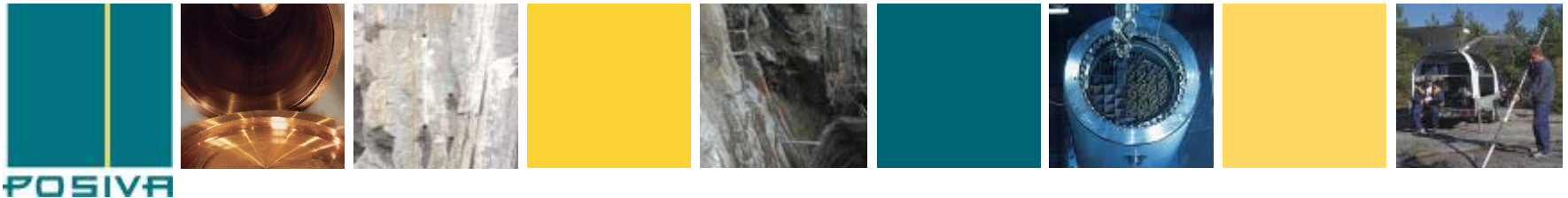


FINLAND PROCEEDS TOWARDS DIRECT DISPOSAL OF SPENT FUEL

Juhani Vira
Posiva Oy

Loughborough, 6 November 2006

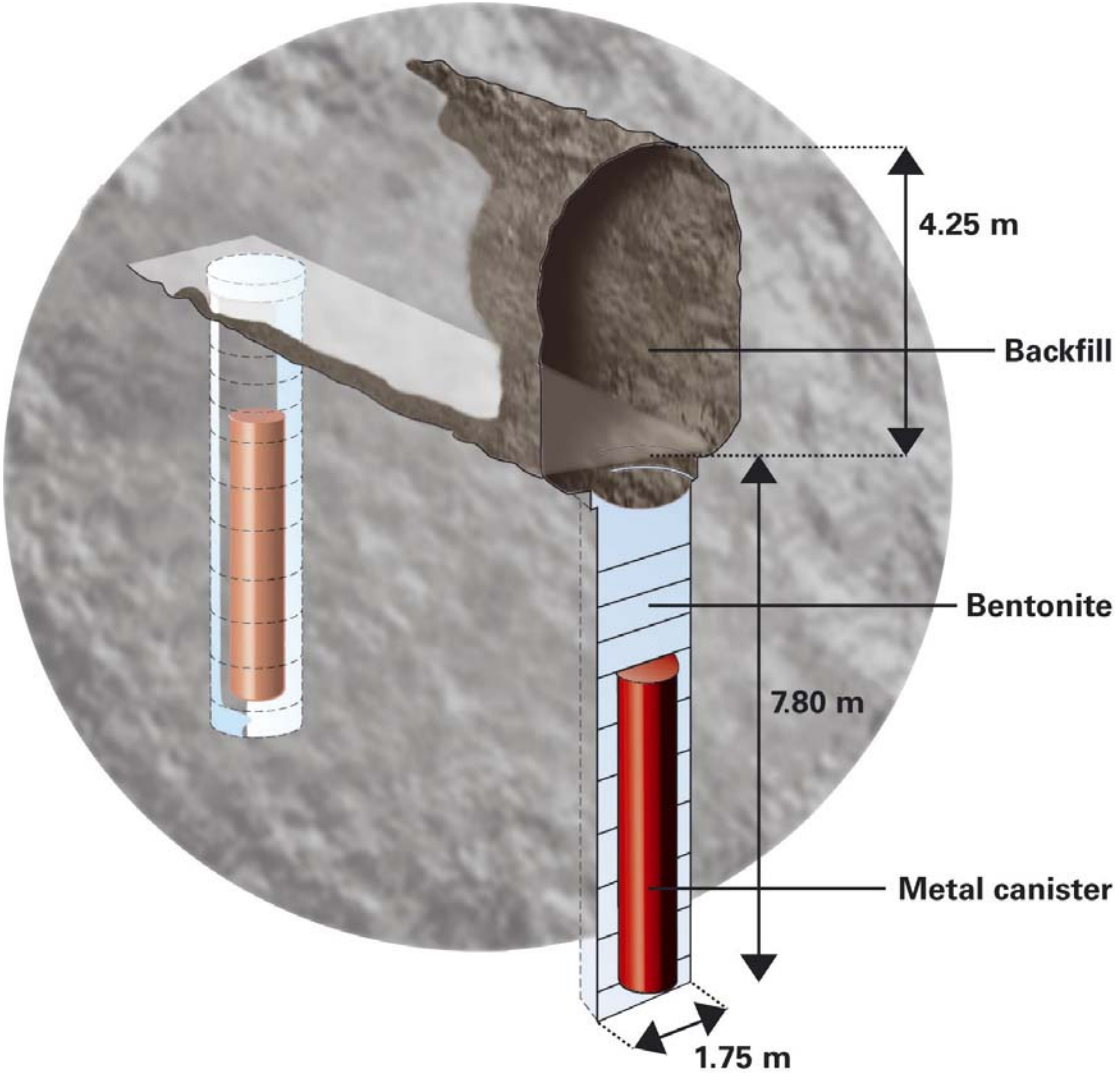


DECISION-IN-PRINCIPLE (2001)

”Construction of the final disposal facility for spent nuclear fuel produced during operation of the existing Finnish nuclear power plants, in such a form as described in the application with regard to the main operating principles of the facility and the structures aimed at ensuring its safety, at Olkiluoto in the municipality of Eurajoki, is in the overall interest of society.”

Finnish Parliament, 18 May 2001

KBS-3 CONCEPT FOR GEOLOGIC DISPOSAL OF SPENT FUEL



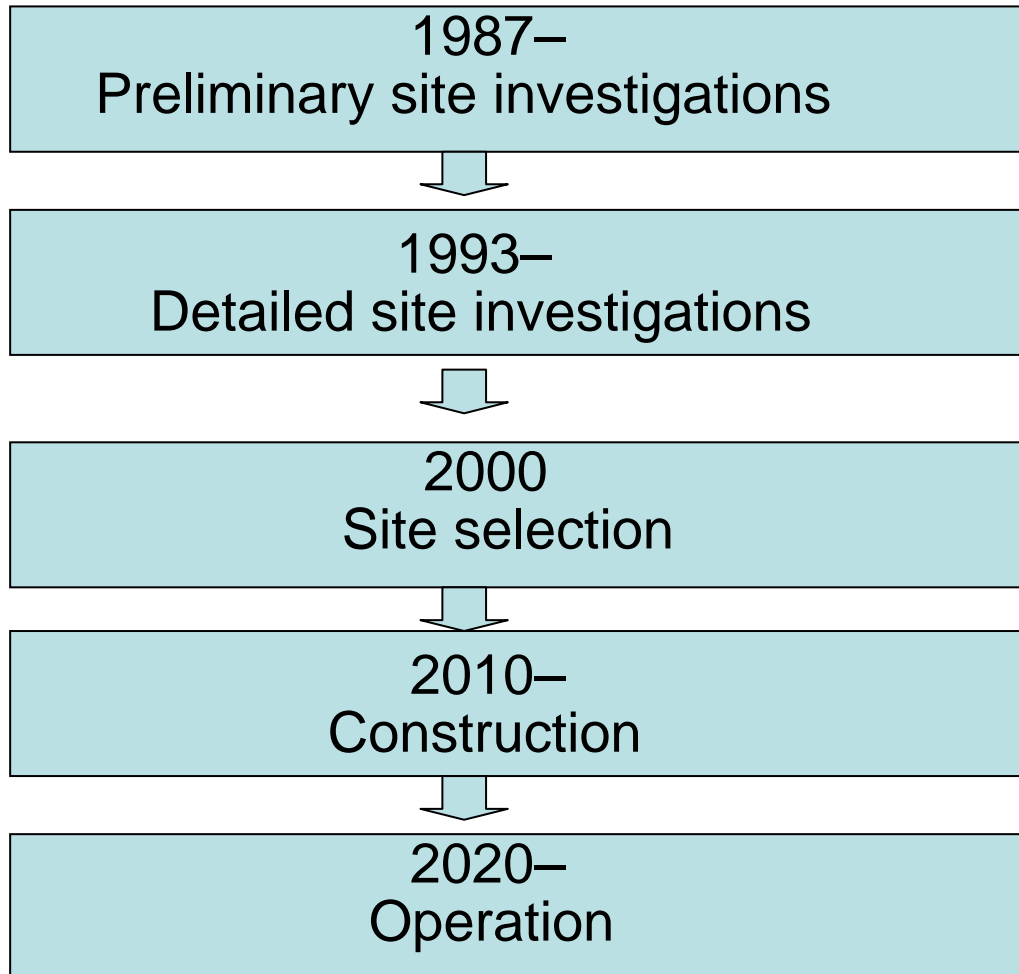
LOCATION OF OLKILUOTO



DEVELOPMENT OF THE POLICY FOR SPENT FUEL MANAGEMENT

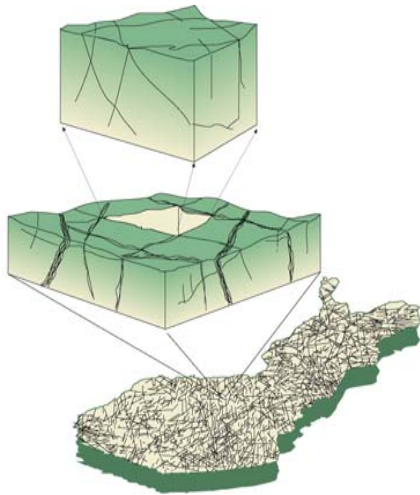
- Early plans of 1970's based on reprocessing
 - relying on services available in UK, France or Soviet Union
- Government guidelines of 1983
 - "international/foreign solutions" recommended
 - in the absence of other permanent solutions for spent fuel management, prepare for geologic disposal in Finland
 - Loviisa spent fuel was returned to Soviet Union/Russia until 1996
- Amendment of Nuclear Energy Act in 1994: nuclear waste can be neither exported nor imported
- Decision-in-Principle (DiP) on geologic disposal in 2001

GOVERNMENT GUIDELINES OF 1983: MAIN MILESTONES



SITE SELECTION PROCESS: INVESTIGATIONS

SITE IDENTIFICATION 1983-1985



PRELIMINARY SITE CHARACTERISATION 1987-1992



DETAILED SITE CHARACTERISATION 1993-2000



SITE SELECTION PROCESS: STAKEHOLDER DISCUSSION

- 1980's – early 1990's: informing the local decision-makers, media and public about investigations
- (Nuclear Energy Act of 1987: introduction of local veto)
- early 1990's: first serious attempts to dialogue started
 - societal aspects of waste issues acknowledged
- late 1990's: public dialogue in the context of Environmental Impact Assessment
- late 1990's: contacts with municipalities on possibilities for enhanced cooperation
- early 2000's: national debate (Parliament)

EIA PROCESS (1997-1999)

COMBINING EXPERT STUDIES WITH PUBLIC VALUATIONS

SPECIALISTS

- Safety
- Technical feasibility
- Environmental impact
- Alternatives

EIA - PROCESS

PUBLIC PARTICIPATION

- Democracy
- Discussion
- Openness

Scientific and
technological
judgement



Evaluation of importance
and social meaning

COHERENT EVALUATION OF IMPACT

OUTCOME OF THE EIA

- impact will be small (and most likely to be primarily social)
- alternatives:
 - technology: geologic disposal or continued interim storage ("zero" alternative)
 - zero alternative cannot be the permanent solution required by law
 - sites:
 - from the safety point of view all sites would be acceptable and neither of them offers clear advantages over the others
 - from the point of view of social impact and acceptance, Olkiluoto and Loviisa would be possible
 - from the point of view of logistics and infrastructure, Olkiluoto offers advantages

DECISION-IN-PRINCIPLE (DiP) PROCESS

- Both the regulator (STUK) and Eurajoki municipality had the right of veto, neither applied it
 - Eurajoki municipality council: OK for siting (vote: 20–7)
- Government acceptance without major debate
- Parliament Ratification with votes 159-3 in favour (37 absent)

DECISION PROCESS: ANALYSIS (1)

- the ultimate question was about the alternatives for HLW management
 - Finland – other countries: Finland was chosen (according to the Amendment of Nuclear Energy Act)
 - Site alternatives: the fact that there was already HLW in Eurajoki and Loviisa made a difference among the site candidates: majority of population in Eurajoki and Loviisa considered the repository siting as a potential improvement
 - national policy alternatives: the great majority of the MP's admitted that geologic disposal is the only near-term alternative to open-ended interim storage
- reversibility and retrievability essential elements of the discussion on the national level
 - the main issue was not about the safety of disposal but on the alternative courses of action in the current situation
 - many MP's emphasised the possibility of revising the decision (e.g., should better technology become available in the future)

DECISION PROCESS: ANALYSIS (2)

- the DiP was considered as another step of the process started by the Government Decision already in 1983
 - HLW was never a big issue on the national level
- local veto "empowered" the local communities
 - although the siting process was not based on volunteering, the local people could trust that they have a say in the process (and refrained from major protests against investigations)
- the acknowledgment of the social dimension (by the industry) opened new possibilities for dialogue
- the opening of the discussion on possible benefits from the repository siting created new incentives for local decision-makers
- open discussion of technical issues created trust among national decision-makers



POSIVA