

The background of the slide is an aerial photograph of a vast, forested landscape. In the foreground and middle ground, there are numerous small, dark blue lakes and ponds interspersed among dense green forests. The terrain appears to be a mix of water and land, with some sandy or cleared areas visible. In the far distance, a larger body of water, likely the Baltic Sea, stretches towards the horizon under a clear blue sky with some light clouds. The overall scene is serene and natural.

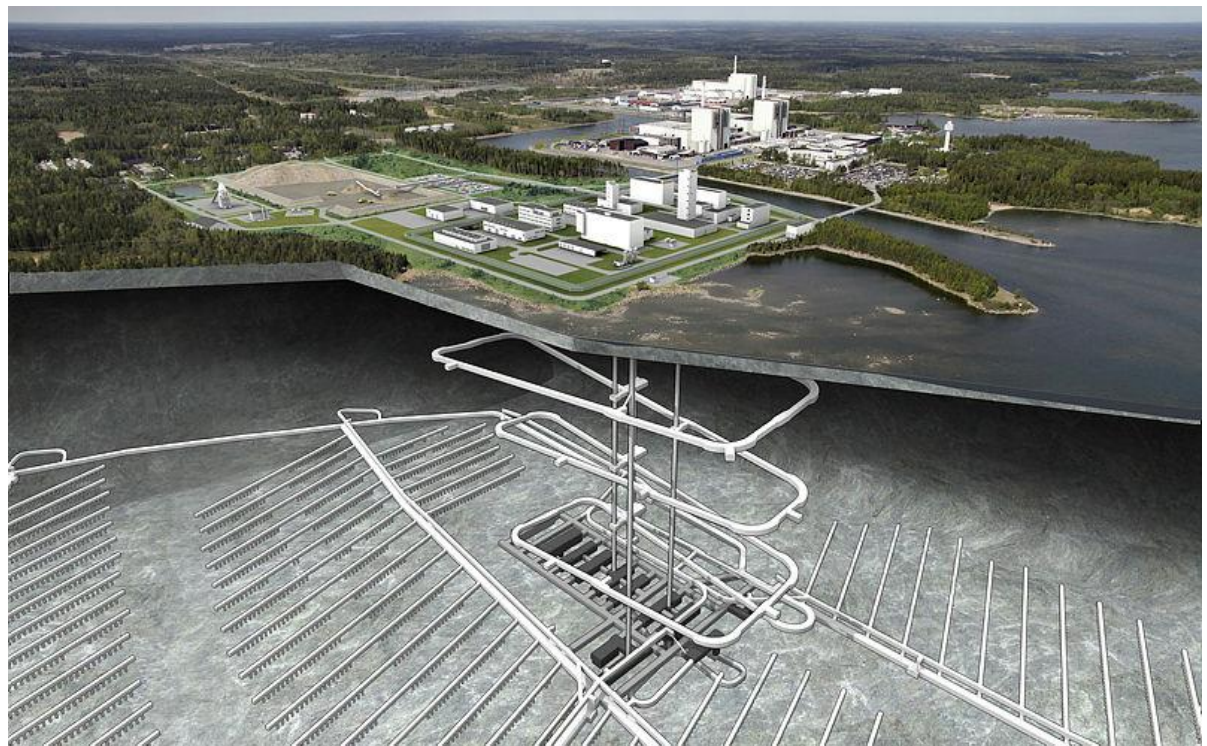
Communication regarding technical reliability

Magnus Odén, SKB

SKB - communication of technical reliability



- Stakeholder-specific communication
- Explaining complex concepts
- Building and measuring trust



Cooperation with universities and research institutes



- SKB collaborates with a large number of Swedish and international universities and research institutes to obtain critical knowledge in important areas
- Access to such expert competence has in many cases been a key factor in being able to resolve critical research and investigation issues



Establish our technology within the research community



The RD&D Programme

- Programme for *Research, Development and Demonstration of methods for the management and disposal of nuclear waste and spent fuel* aims to report the comprehensive research and development activities necessary for the advancement and implementation of the remaining operations stipulated in the Nuclear Activities Act
- SKB is required to submit the RD&D Programme to SSM (Swedish Radiation Safety Authority) for review every three years
- Universities, environmental groups, municipalities follow the RD&D process
 - The RD&D programme have contributed to openness and insight into research and development issues for the final repository systems
- Information to, and dialogue with, the municipalities



Assessment of technology maturity

Technology Readiness Levels (TRLs)



- SKB uses a system of Technology Readiness Levels (TRLs) to assess and demonstrate the maturity of nuclear waste management technologies
 - TRL 1-2: Basic principles are observed
 - TRL 3: Experimental proof of concept is achieved
 - TRL 4-6: Technology is validated in a laboratory environment, then in a relevant environment
 - TRL 7-9: The system prototype is demonstrated in an operational environment, followed by the system being complete and qualified, and finally proven in the actual operational environment
- **The Äspö Hard Rock Laboratory played a crucial role in these demonstrations, *and hence for communicating the technical reliability of the Swedish system to different stakeholders***

Äspö Hard Rock Laboratory (HRL)



- **Pre-investigations 1986-1990**

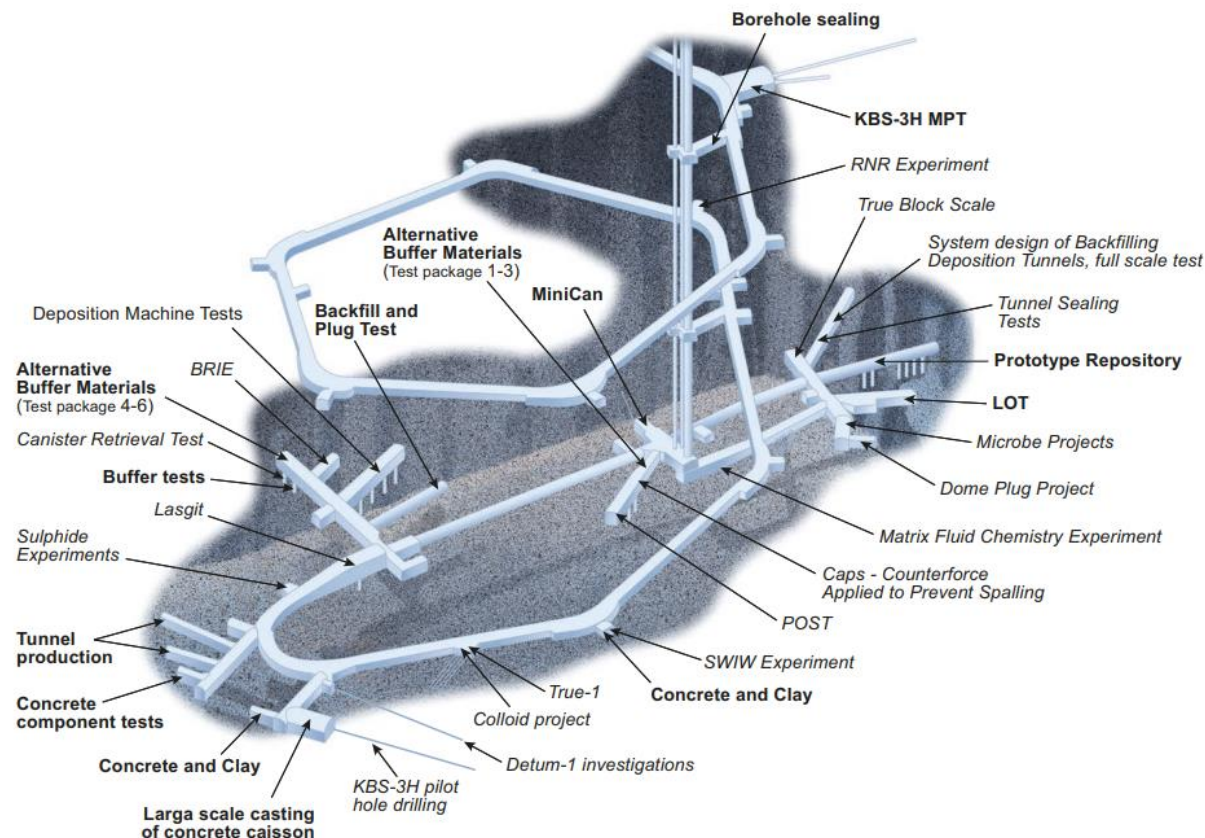
- Surface and borehole investigations
- Predictions

- **Construction 1990-1995**

- Evaluation of predictions
- Methodology for detailed characterisation

- **Operating Phase 1995-2025**

- Test models describing the barrier function of the rock
- Demonstrate technology and function of the repository system



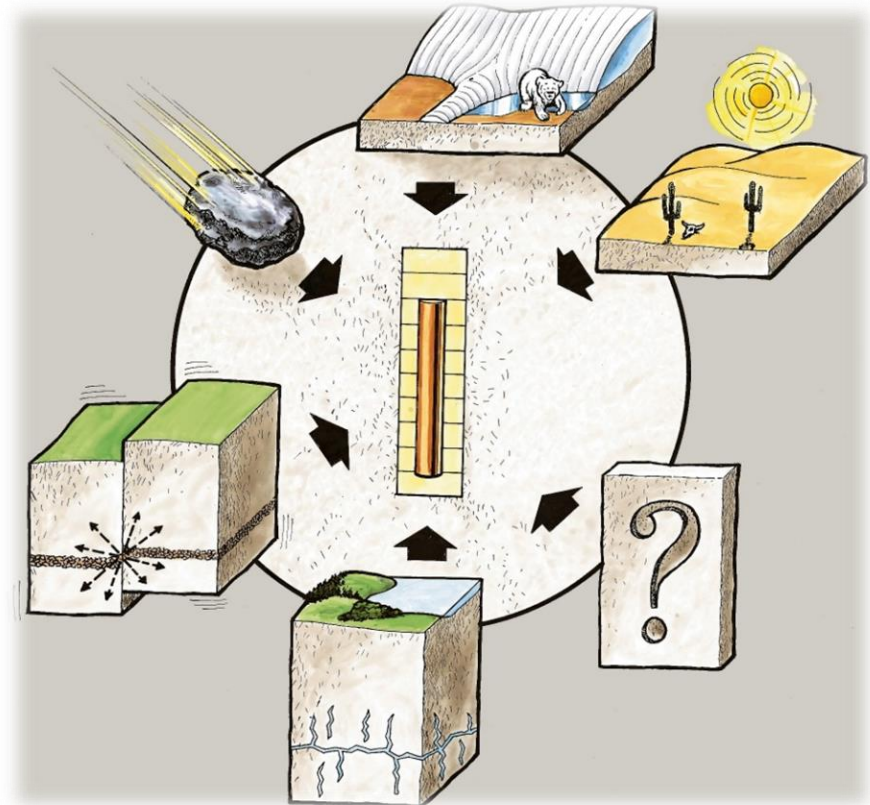
Review, openness and transparency

- The fundamental principle is that SKB 's research results will be published open access to facilitate external review
- Shared data from SKB 's site investigations, technology development and research with other researchers or institutes
 - Data are available for the authorities in their review
- SKB is also working to distribute research results outside the scientific world
 - by publishing in popular scientific journals
 - SKB's magazine Lagerbladet
 - conducting themed evenings in Östhammar and Oskarshamn municipalities
 - providing information at schools and universities

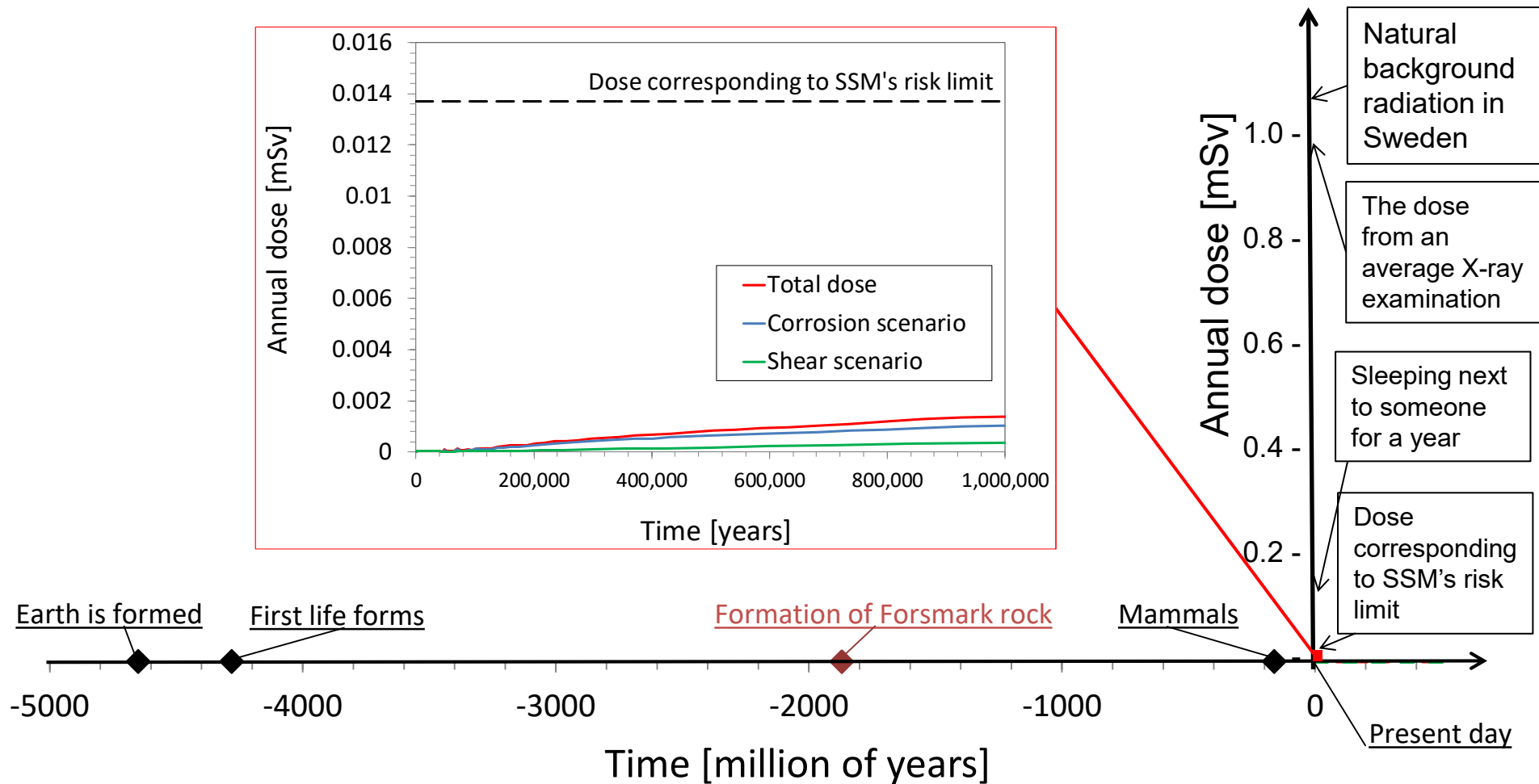


Explaining complex concepts

- Experiences in communication around the safety case for a spent fuel repository
 - Putting risks/doses in perspective
 - The time scales of the safety case



Explaining dose and time perspectives in the safety case



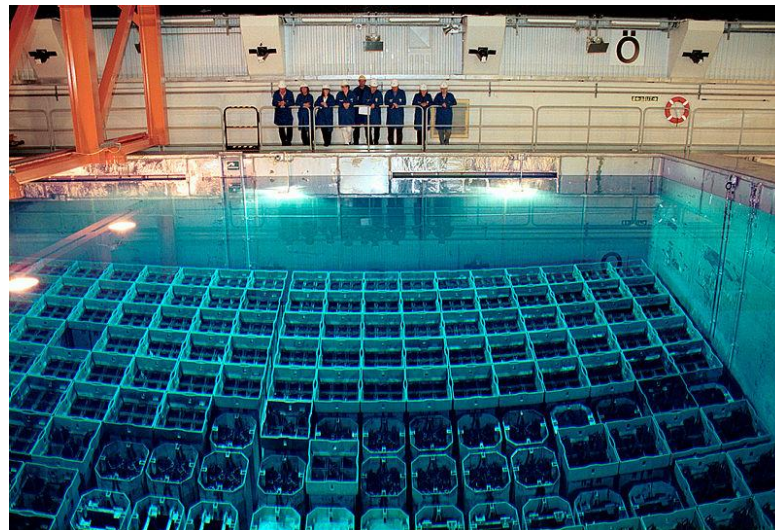
Building trust



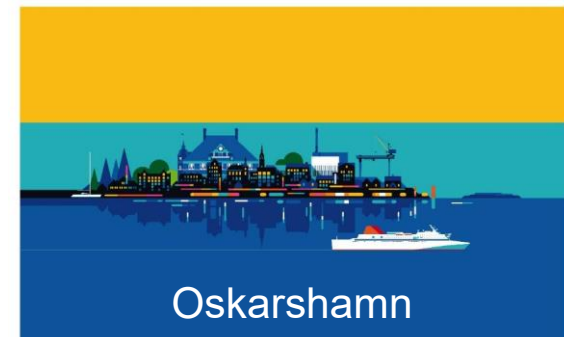
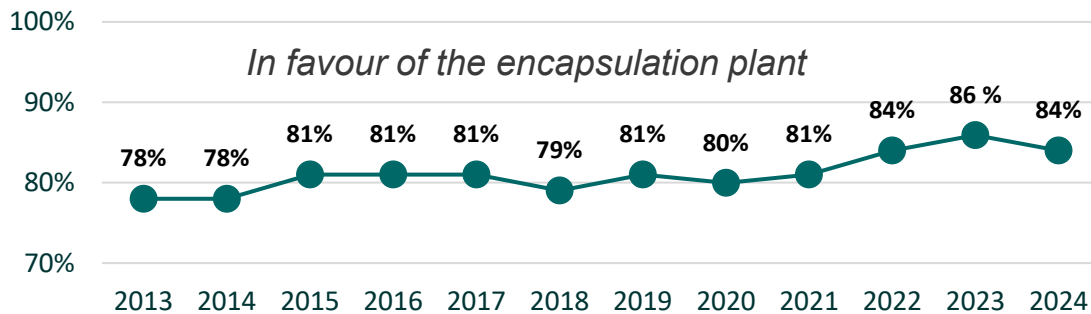
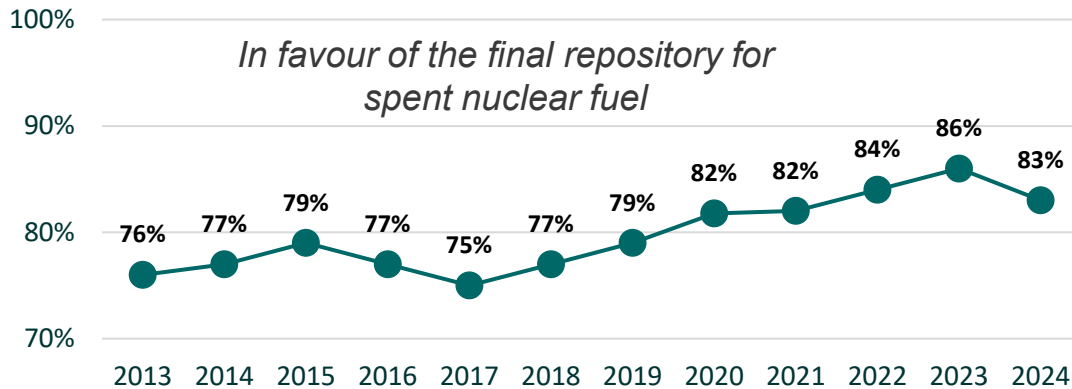
- SKB has been active in the municipalities of Oskarshamn (location of the planned Encapsulation plant) and Östhammar (location of the planned final repository) for decades
- Dialogue with landowners and nearby residents
 - Broad scope of information and dialogue activities
- The municipalities received funding to hire their own experts to review SKB's work and technical solutions



Visits to our facilities – seeing is believing

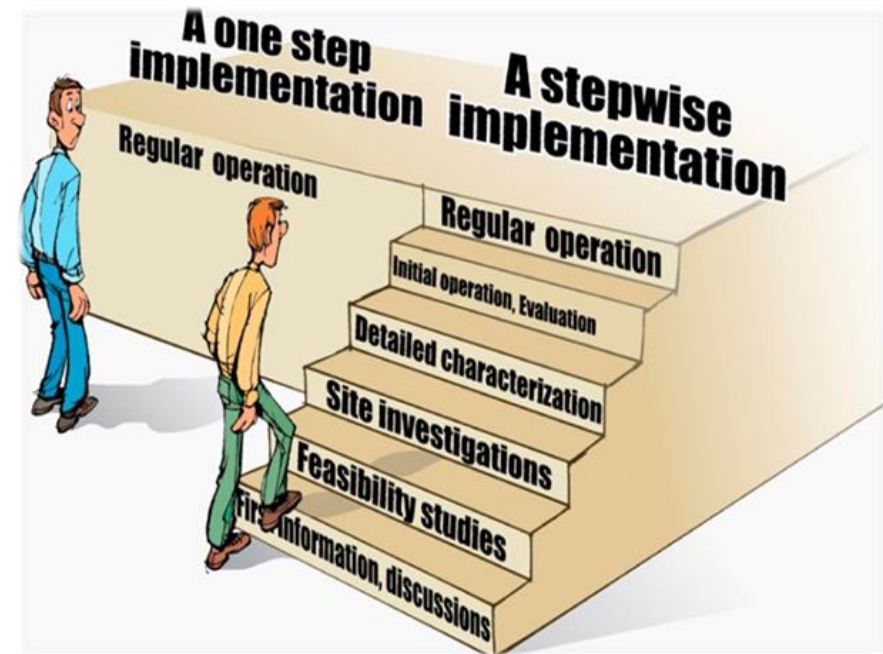


Measuring trust - local acceptance



Conclusions

- Openness and transparency has been key in communicating technical reliability and nuclear safety with stakeholders
- Step-wise implementation
 - Constant dialog, knowledge building and stakeholder involvement
- Financial support to stakeholders to allow them to be able to actively participate in the review process has built trust and confidence



A large, solid blue hexagon with rounded corners is positioned on the left side of the image. It serves as a background for the 'Thank You!' text.

Thank You!