Achievements and Current Challenges for the Swedish Waste Management Program

Christopher Eckerberg
President

Swedish Nuclear Fuel and Waste Management Corporation
License application submitted March 2011

Spent Fuel Repository at Forsmark

Encapsulation plant in Oskarshamn
Nuclear Sweden

• 10 (12) operating reactor units at 3 sites
• ~ 45% of electricity
• Operation since 1972/85
• Full responsibility for NPP owners to implement waste management
• Early financing system
• Early waste management system based on a national approach
The KBS-3 method for disposal of spent nuclear fuel

Primary safety function: Total containment
Secondary safety function: Retardation
Research, development and siting

- 1976: m/s Sigyn in operation
- 1985: Canister Laboratory
  - 1988: SFR in operation
  - 1990: Clab in operation
- 1995: Äspö Hard Rock Laboratory
  - 2000: Methodology development
  - 2005: Site investigations, Technology development
  - 2010: Site selection Forsmark
  - 2015: m/s Sigrid in operation
  - 2029: Deposition begins

RD&D programme reviewed and approved every three years
Siting of the repository for spent nuclear fuel

Knowledge accumulation

Study sites
1977-1985

General siting studies
1990s

Feasibility studies
1992-2001

Site investigations
2002-2007

Licensing
ca. 2011-2018

Construction
ca. 2019-2028

Siting process

Hultsfred
Malå
Nyköping
Oskarshamn
Storuman
Tierp
Älvs Karleby
Östhammar

Oskarshamn (Laxemar)
Östhammar (Forsmark)

Decision on site
2009
Public consultation and involvement - key to success

- Broad national information
- Focused dialogue with potential local communities
- Strong local involvement of SKB and municipalities
- Ear-marked funding for municipality involvement
Factors for success

• Clear responsibilities for implementation and financing
• Scientific/Engineering approach
• Trustworthy regulator
• Strong public involvement
• Close cooperation with local municipalities
Remaining challenges

• Licensing and accepting a First of a Kind facility
• Going from theory to practice – Industrialization
• Keeping public confidence
In summary

• KBS-3 concept mature for licensing

• Result of 40 years of dedicated goal-oriented RD&D performed in a cost-effective way

• Responsibility to implement lies with the waste producers. Complete the work by the generation benefitting from the electricity

• Challenges remain for licensing, industrialization and public acceptance

• Key factors for success:
  • Solid scientific foundation
  • Applied technology
  • Public acceptance
More details in coming presentations

Thank you for your attention