

# Near Field Workshop

Future Needs from End User Point of View

Ville Heino

# Status of the EBS projects in spring 2022

- Safety case and operating license application submitted in the end of 2021
  - Design freezes for the safety case were done for different barriers few years earlier
    - Design changes done after the design freezes and performance related projects which are still ongoing are discussed in a complementary memorandum and will be submitted to STUK during 2022
    - Covers the work that was planned in the Kehitysohjelma (after Safety Case 2012)
  - Work after the safety case (OLA) primarily focuses on the qualification of the EBS components
    - Construction plans presenting the planning, manufacturing and installation of the EBS components (for STUK's approval)
- Until the feedback for the safety case from STUK is ready and available...

# Future needs looking through Posiva glasses

- Optimization of the EBS designs
  - Alternative clay material for Wyoming bentonite
  - Alternative granular design for buffer
  - Alternative production methods for canister components

→ Impacts on the performance issues
- Safety Case related issues
  - Construction/operation or long-term related changes in the conditions for the EBS
    - Transient conditions in the near-field (diluted groundwater, increased sulfide, increased salinity) → the impact of operational phase transient conditions
  - Quality non-conformances particularly if designs or processes are changed → initial state deviations and their importance (for long-term evolution)

# Clay performance related issues

- Alternative clay material for buffer
  - Effects on the sulfur reactions, sulfide fluxes
  - The role of iron in the reactions
  - Microbial activity in different bentonites and needed densities
  - Other material related properties
- Alternative buffer design - Granular buffer
  - Impact on the performance issues
  - Achieving the designed initial state
- Leaving the safety net in the tunnel roof and walls (foreign material, steel)
  - Is there any impact on the bentonite performance

# Canister performance related issues

- Alternative ways to produce canister components, mainly copper tube
  - Are all requirements achievable if produced for example by applying forging, rolling, welding techniques
  - Questions are more related to production
- If different manufacturing methods are used, issues related to residual stresses, creep properties and corrosion properties have to be evaluated...

# Contacts in Posiva

Some example contact persons in Posiva for the future discussions:

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An aerial photograph of a dense forest with a winding path. The trees are mostly dark green, with some lighter green and brown patches. The path is a light brown color, winding through the forest. The overall tone is dark and moody.

# Posiva

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