

# Posiva's interests in BELBaR

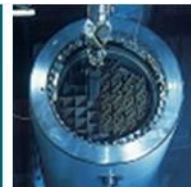
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POSIVA



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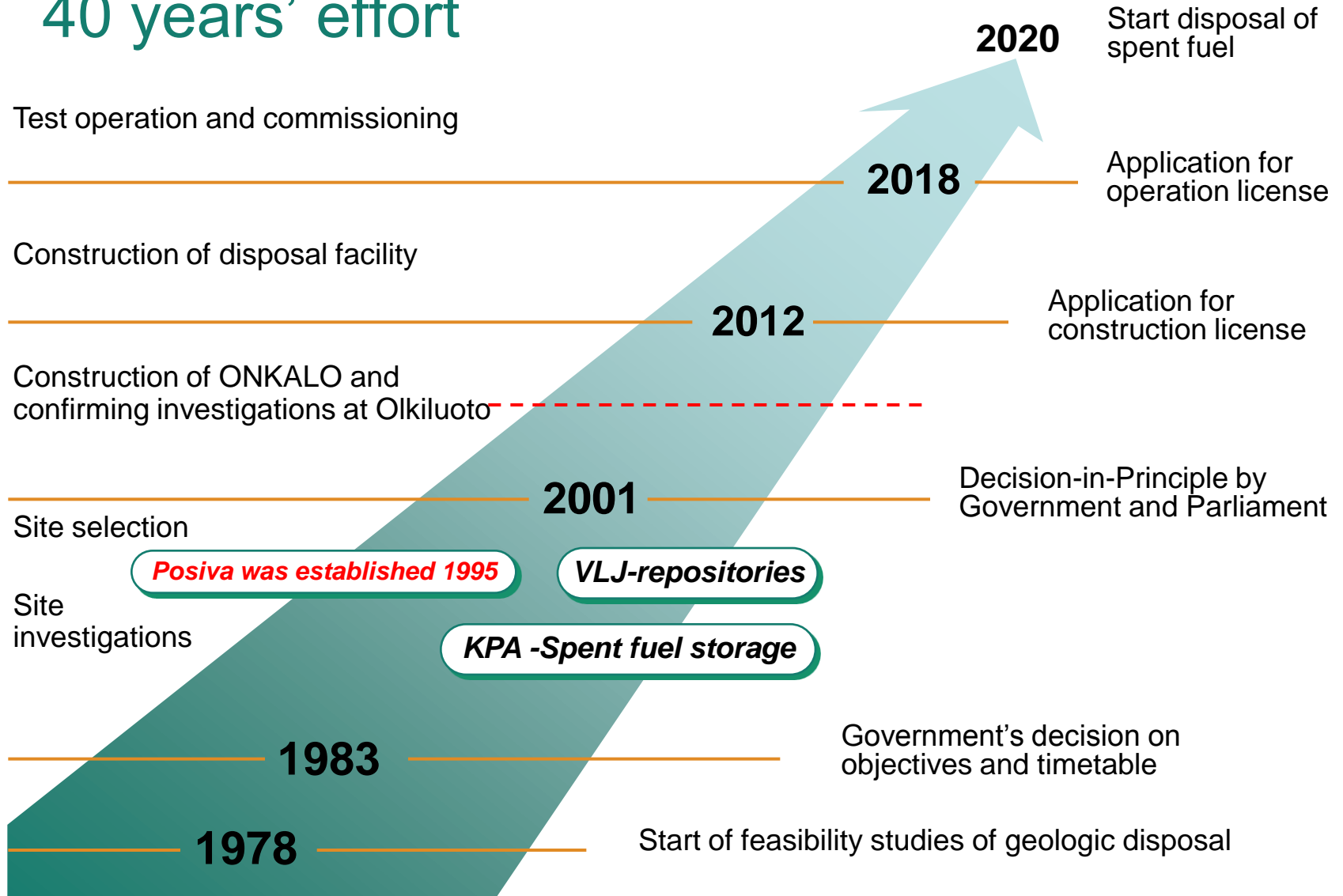
Koskinen Kari



# Outlines

- Context of Posiva
  - History and the future: 40 years' effort
  - Next step
    - Application for construction license
    - Preliminary safety analysis report, PSAR
- Starting points for BELBaR
- Expected outcomes

# 40 years' effort



# Application for construction license

- Application
- Supplements
  - ...
  - an outline of the technical principles of the planned nuclear facility,
  - a description of the safety principles that will be observed,
  - an evaluation of the suitability of the planned location for its purpose,
  - ...
  - any other information considered necessary by the authorities.

# Preliminary safety analysis report, PSAR

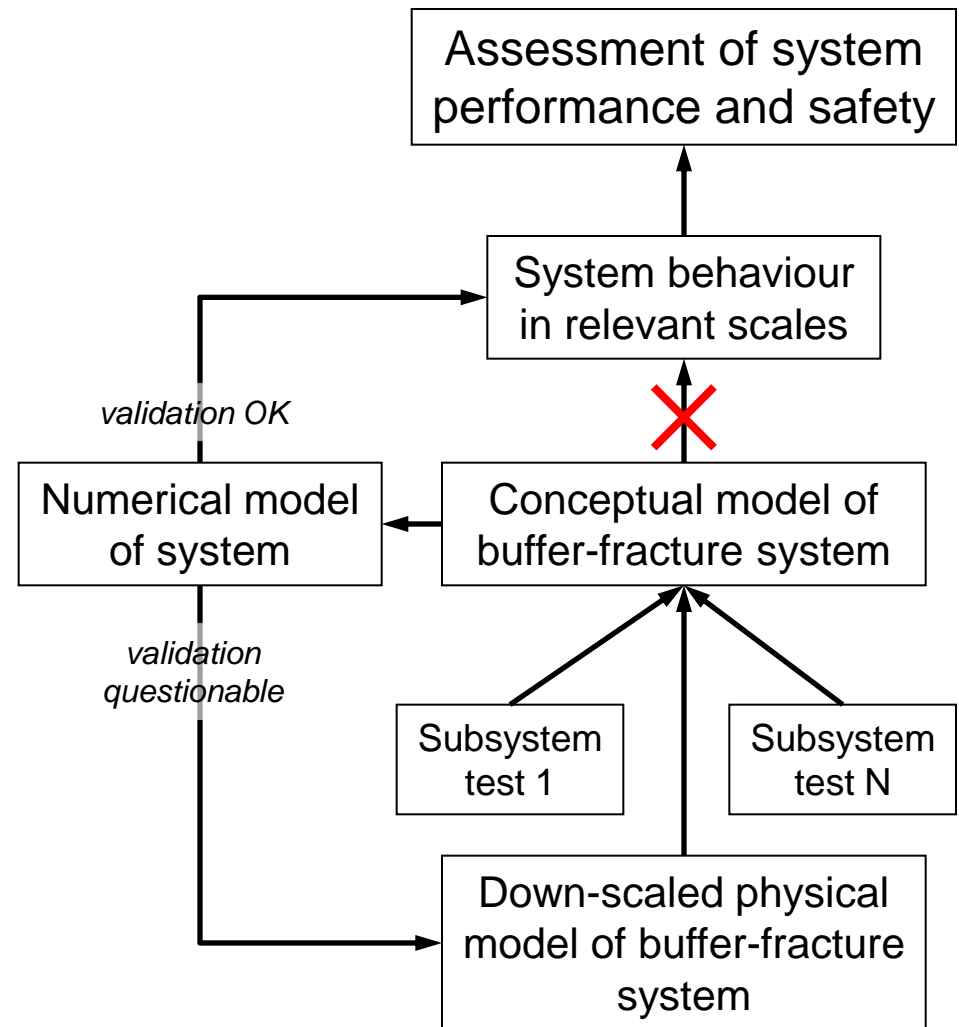
- Shall include
  1. the general design and safety principles,
  2. a detailed description of the site and the facility,
  3. a description of the operation,
  4. a description of the behaviour during accidents,
  5. a detailed description of the effects that the operation has on the environment, and
  6. any other information considered necessary by the authorities;

# Starting points for BELBaR

- Wide range of estimates of clay mass loss in dilute waters
- Site conditions in terms of groundwater ionic strength
  - current  $\text{TDS}_{\text{reference}} = 10.5 \text{ g/l} \sim 350 \text{ mM}$
  - volume occupied by diluted groundwater increases due to land uplift
  - ionic strength of fresh groundwater remains  $>10 \text{ mM}$  should water infiltrate through till layer
  - in postglacial condition penetration of  $<10 \text{ mM}$  groundwater to repository can't be excluded

# Expected outcomes

- Elaborated guidelines for performance and safety assessments
- Scaling principles or "laws"
- Validation of numerically implemented conceptual process models
  - with relevant material data and
  - boundary conditions
- Elaborated conceptual process models
- More and systematic empirical evidence





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