Posiva Oy, Finland
World leader in final disposal of spent nuclear fuel - sharing the experience benefits the whole sector

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Posiva Oy

**Mission**

Safe and cost efficient final disposal of spent nuclear fuel for our owners

**Vision**

Forerunner in industrial final disposal of spent nuclear fuel

- Established in 1995
- Private company owned by Finnish NPP operators TVO and Fortum
- Turnover 67 M€ (2017)
Only safe final disposal is possible

- The principle of final disposal: Several release barriers back up each other and ensure long-term safety.
Posiva has the site and has reached the final disposal level underground

- Construction work started in 2004
- ONKALO™ research facility has been built in accordance with the requirements of a nuclear facility
- Study of the details in the bedrock
- Development of rock construction methods and tests/demonstrations in real conditions
Construction of above- and underground facilities started in 2016
Encapsulation plant construction
Raise boring of the canister shaft started 4th April 2018
Encapsulation plant main equipment ordered

Constructions Industrielles de la Mediterranee SA (CNIM)

Transport cask vehicle

Spent fuel transport vehicle

Canister transport car

12.4.2018
Encapsulation plant main equipment ordered

NKM Noell Special Cranes GmbH

Bridge crane

Confidential

Canister lift
Full Scale In-Situ System Test 2018 - 2019

- Full Scale In-Situ System Test (FISST) is being constructed in ONKALO™ demonstration area at the disposal depth of 420 metres
- Design, installation and comprehensive monitoring of EBS components:
  - 2 copper canisters (with heating equivalent to the fuel decay heat)
  - buffer in two deposition holes
  - about 50m backfill
  - deposition tunnel plug
- Installation started in June 2018
  – external partners are participating
FISST-preparation in ONKALO™
FISST-preparation, canister and clay components
Final disposal facility around 2120

- Repository capacity is 6500 tU (about 3250 canisters)
- Depth of the tunnel system -400-450 m and the extent is about 2 km²
- Construction and operating time approximately 100 years
- The volume of the cave about 2 million m³
- Tunnel length about 60-70 km
Co-operation models with other WMOs

- Waste Management Organisation
- Topic X

- WMO Consulting

- POSIVA
  - Topic Y

- Posiva Solutions

- External Client 1

- External Client 2

12.4.2018
Pohjonen Mika
14
Posiva Solutions Oy

- Provides tailored expert services related to final disposal of spent nuclear fuel in collaboration with an extensive network of partners
- Expertise is based on Posiva's decades-long experience in design, research and development
- Established in June 2016, subsidiary of Posiva

With our experience you can save time and money!
Posiva Solutions can help you in e.g. the following areas:

1) Preparation of Deep Geological Repository development strategy and project management plan

2) Selection and characterization of the site for deep geological disposal
   - assessment and development of procedures and methods as well as investigations,
   - preparation of site descriptive models of the selected sites,
   - development of information database and interfaces, specific site characterisation methods, safety case and supporting safety assessments, procedures and methods for the development of engineered barriers.

3) Design and engineering of the final repository, disposal machinery and affiliated facilities like e.g. encapsulation plant

4) Cost estimates and cost optimization of the preparation and construction of the deep geological repository and funding of nuclear waste management cost

5) Stakeholder management and acceptability; roles and responsibilities, communication and interaction with stakeholders like general public, relevant authorities, NGOs etc.
Our Clients

- SÚRAO, Czech Republic
- Nagra, Switzerland
- Fennovoima, Finland
- CNPE, China
- BRIUG, China
- RWMC, Japan
- KNEA, Korea
- NWMO, Canada
- SKB International, Sweden
- ANDRA, France
- RWM, UK
Posiva Solutions can offer a wide range of expert services for organizations engaged in nuclear waste management operations. With our experience you can save time and cost.