EXPERIENCE FROM THE OLKI 3 PROJECT FROM THE AUTHORITY PERSPECTIVE

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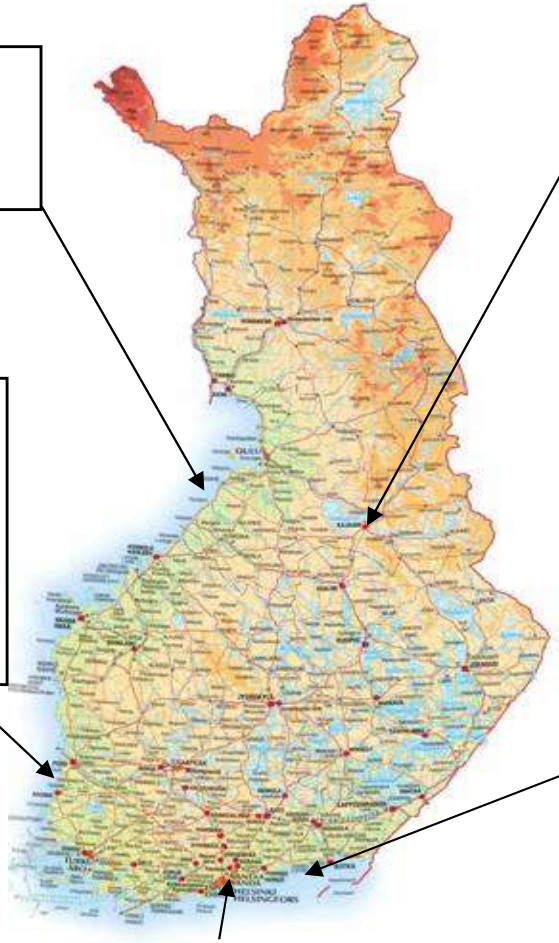
NUCLEAR FACILITIES IN FINLAND

Terrafame Mining company
Nickel mine. Plan for uranium production.

Fennovoima Ltd
- Construction license application phase terminated in spring 2022



Loviisa NPP (Fortum)
- 2 operating units – VVERs
- Interim Spent Fuel Storage at site
- L/ILW repository

Photo: Fortum

Olkiluoto NPP (TVO)
- 3 operating units -
  - OL 1/2 ABB's BWRs
  - **OL3 (EPR)**
- Interim Spent Fuel Storage at site
- L/ILW repository
- Posiva "Onkalo" in operating license phase

Photo: TVO

FiR research reactor – under decommissioning

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Olkiluoto 3: Safety Control

Teollisuuden Voima Oyj has built the Olkiluoto 3 nuclear power plant in Olkiluoto, Eurajoki. Olkiluoto 3 is based on the European Pressurised Water Reactor (EPR), a concept developed in French-German collaboration.

OL3 regulatory control at STUK

- 480 person-years
- Over 100 experts
- Several thousand inspections in approx. 30 countries
- Over 10,000 on-site inspections
- Over 24,000 applications

2000 TVO's application for a decision in principle

2001 STUK provides the Government with a statement of the preliminary safety assessment.

2002 The Parliament approves the Government's decision in principle on the building of OL3.

2004 TVO submits an application for a construction licence. STUK initiates a safety assessment.

2005 STUK's statement on the application for the construction licence. The Government grants the construction licence.

2006 STUK supervises construction work at Olkiluoto and the manufacturing of various components in different countries, e.g. the manufacturing of a reactor pressure vessel in Japan.

2011 After the Fukushima accident, particular attention is paid to the impact of extreme natural phenomena. After stress tests, STUK states that the planning of OL3 has already factored in such phenomena.

2014 STUK supervises: the results of the containment building's pressure and leakage tests are as expected.

2015 STUK supervises the testing of automation in Germany.

2016 TVO submits an application for an operating licence.

2019 STUK's statement on the operating licence. The Government granted the operating licence to OL3.

2021 STUK granted the fuel loading permit in March and permit for making the reactor critical in December. Nuclear commisioning starts.

2023 OL3's regular electricity production starts

STUK's regulatory control at Olkiluoto continues throughout the plant's entire life cycle, all the way from decommissioning to final disposal.

20XX *Decommissioning commences.*

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STUK supervision of design - Lessons learned

Requirements must be managed transparently and traceably

New design features require special attention

Design configuration, change and requirement management

Design and implementation requirements need to be explicitly defined

Design should be as ready as possible prior to construction

The documentations are processed in the right order first the high-level materials and only last the more detailed plans

Requirements from plant level to the design of systems, structures and components

Interfaces are managed between technical disciplines and between design and procurement

Open communication between all parties!

THANK YOU!