

FINNISH KNOW-HOW AND SOLUTIONS IN SAFETY RESEARCH BY VTT NUCLEAR

(E.-K. Puska, R. Rintamaa, L. Mattila)

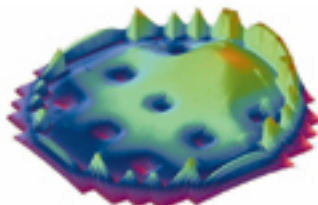
VTT Nuclear provides research and development services reaching from research of new plant concepts to waste repository studies. VTT Nuclear includes some 200 dedicated nuclear experts of VTT Technical Research Centre of Finland. VTT is an impartial, internationally respected and networked research centre with a turnover of 210 million € and a staff of 3000 persons.

VTT is the major technical support organisation for the utilities Fortum and TVO that operate the existing four Finnish nuclear power plants, two BWRs and two VVERs, for the waste management company Posiva and for the safety authority STUK, and has also numerous contracts from foreign utility, industrial and regulatory customers.

In recent years VTT's capabilities have been in extensive use in the major modernisation and power uprating programmes of the Finnish nuclear power plants and in the systematically proceeding implementation of the nuclear waste management programme. VTT has also participated in Finnish and international projects aimed at raising the safety level of Central and Eastern European nuclear installations.

In the forthcoming years, the construction and licensing of a new Finnish nuclear power plant unit, plant life extension of the existing plants, including modernisation of the I&C systems, improved fuel utilisation by higher burn-up and the next steps of the waste management programme are our major challenges.

In addition to contract and collaborative R&D projects, VTT Nuclear offers delivery and tailoring of software products and experimental and measuring devices developed at VTT.



Reactor Safety Analysis

Thermal neutron flux in a PWR reactor calculated by the AFEN code of VTT.



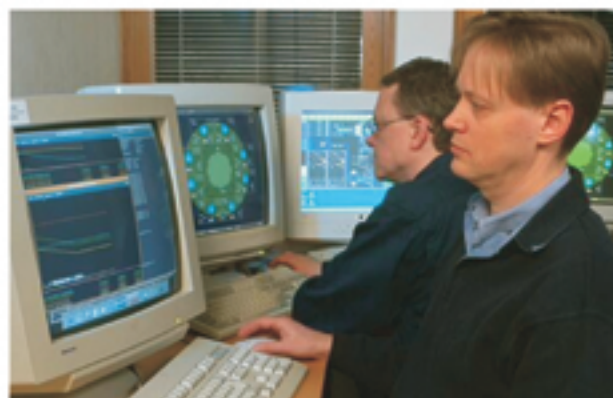
Waste Management

Spent fuel canister with an outer layer of copper strengthened by cast by iron insert.



Plant Life Management

A facility for testing fatigue performance in LWR environments.



Simulators

Factory Acceptance Testing of the APROS software for the OECD Halden Reactor Project full scope BWR research simulator HAMBO.