



# Design and commissioning of a solidification plant for nuclear waste, Finland, 2004-2014

The objective was to prepare and implement a plan for solidification plant in order to seal the radioactive substance into the concrete containers. This prevents radioactive release into the environment during final disposal of the nuclear waste.

Power Plant: PWR, VVER-440  
Location: Loviisa, Finland  
Customer: Fortum Power and Heat Oy/ Loviisa NPP  
Project duration: 2004-2014

## DESCRIPTION OF THE PROJECT

The project included design and commissioning of the solidification plant at Loviisa NPP site. The solidification plant has been designed by Fortum and the aim of the project was to ensure that there is a well-designed waste routes from the liquid waste storages to the solidification plant. The last part of the project, conducted between 2010-2014, include about 60 sub-projects, such as:

- Extension of the storage capacity of the liquid waste storage in the Loviisa NPP with a one more tank for medium level waste (resins)
- Design, testing and installation of the pumping systems for evaporate condensates and resins from the liquid waste storage to the solidification plant

- Design of the alternative treatment and conditioning system for low level waste (resins), which do not require a storage capacity at the liquid waste storage facility
- Updating FSAR of the solidification plant
- Preparation of the operation strategy for the storage of the solidified waste at the solidification plant
- Licensing and commissioning of the repository for solidified waste at Loviisa NPP site
- Preparation of the operation strategy for the solidification plant
- Commissioning testing of the solidification plant

## RESULTS

After installation work and test period 2010-2014 the solidification plant is working and ready for production.