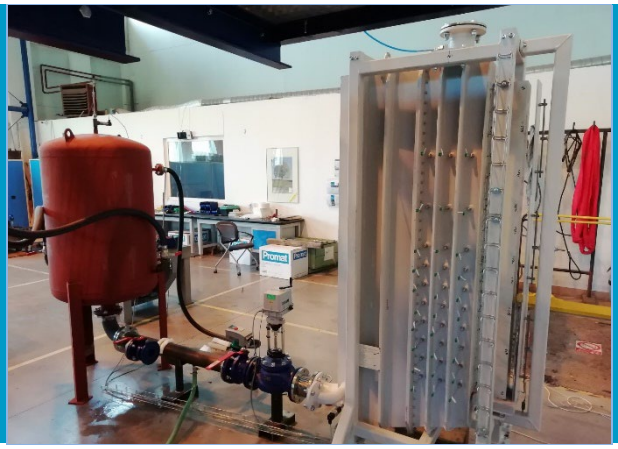
NUCLEAR RESEARCH INSTITUTE

Structural and Lifetime Assessment Department
Integrity and Technical Engineering Division



PRESSURE-THERMAL SHOCK (PTS) EXPERIMENTAL SUPPORT

"KRNEC" – Pressure thermal shock (PTS) experimental facility

Value for customers

- Test experimental facility for simulation of the flooding of the reactor pressure vessel (RPV) wall form the outside
- Temperature field measurement system along RPV wall thickness and inside RPV cavity
- Simulation of thermal processes under normal and emergency operating conditions of a reactor with real RPV steel.

Application

- Demonstration of the external cooling of RPV during IVMR strategy for pressurized water reactors and light water small modular reactors

What we offer

- Simulations leading to a refinement of computational models dealing with RPV flooding from outside
- Refinement of PTS calculations of scenarios with rapid cooling of the RPV external surface by reactor cavity flooding, which can be caused, for example, by LOCA (loss-of-coolant accident)
- Conditions which can be set – initial temperatures of RPV and water, time of flooding (cooling velocity)

Our references

- Life cycle assessment and management of RPVs and their internal parts (Dukovany and Temelin NPPs) - experimental refinement of the thermo-hydraulic model of RPV flooding

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