# ASSESSMENT OF CLOSURE CONCEPTS FOR CAST IRON DISPOSAL CANISTERS

Nagra (National Cooperative for the Disposal of Radioactive Waste) is responsible for developing and implementing safe and sustainable long-term solutions for the disposal of radioactive waste in Switzerland. Posiva Solutions supported NAGRA in 2017.

Schematic representation of the evaluated closure concepts. (Image: Nagra)

## DESCRIPTION OF THE SERVICES

Preliminary development of a closure concept for a copper-coated spent fuel disposal canister with a nodular cast iron structure and a hemispherical steel lid:

- Identify potential joining methods and joint designs
- Develop criteria allowing the evaluation of joining concepts covering technical feasibility and structural quality. Estimate the technology readiness levels.
- Evaluate the weldability of nodular cast iron-carbon steel and cast iron dissimilar joints based on available literature and the evaluation criteria. Identify the most promising concepts for further development.

In addition, the Nagra technical report NTB 17-04 “An evaluation of sulphide fluxes in the near field of a HLW repository” was reviewed.

## DELIVERED CLIENT VALUE

The evaluated closure concepts contributed to the assessment of options of spent fuel disposal canisters. Professional review ensured a high-quality technical report.