

Your tasks

Nagra offers a variety of internship projects, mainly in the Inventory & Logistics Section within the Safety, Geology and Radioactive Materials Division.

In general, internships with a focus on the following topics are available at any time:

- **MCNP calculations and optimisations:** working with existing MCNP models to validate, optimise and review modelled geometry. The overarching goal is the characterisation of neutron activation in the facility components.
- **Data analysis tasks** for validation of computational models and assumptions.
- **Criticality calculations:**
 - setting up computational models for various configurations of the disposal canister for high-level waste (i.e., taking into account different types of spent fuel assemblies, materials, etc.)
 - calculating the neutron multiplication factor, k_{eff} , for different canister configurations using Monte Carlo code systems such as SCALE, MCNP, etc.
 - studying and evaluating different sources of uncertainty in criticality calculations.
- **Optimisation of Disposal Canister Packaging:**
 - working with computer algorithms (SIMAN program) to optimise the loading of the disposal canisters for spent fuel assemblies.
 - (further) development of scripts for logistics and loading planning of canisters, taking into account transport requirements, storage positions, etc.

Your profile

- Ability to solve problems independently using a structured approach and critical thinking skills
- Motivation and willingness to learn
- Good scientific writing skills (in English, German is considered a plus)
- Programming skills (e.g. Python, Matlab, etc.) are considered a plus

We offer

Our ongoing projects at the interface between industry and fundamental research offer the unique opportunity to explore the most fascinating aspects of these two worlds. You will be working along experts on key scientific, technical and implementation topics related to the deep geological disposal of radioactive waste, under realistic conditions. You will also have the opportunity to train and/or gain additional experience with nuclear code packages such as SCALE or MCNP, etc.

Contingent upon availability and the outcome of the internship project, an MSc. thesis topic could be proposed after completion of the internship.

Your application should include:

- Your CV
- A record of all available exam grades from the BSc. and/or MSc. programme (e.g. first semester grades)
- A cover letter not exceeding 300 words

Internships are offered primarily during the summer semester break 2024 (July to September) and last 12 weeks. Initiative applications are always welcome.