FACULTY OF CIVIL ENGINEERING
CTU IN PRAGUE

A SERIES OF EXPERIMENTS AIMED AT THE VERIFICATION OF THE BEHAVIOUR OF ENGINEERED BARRIERS

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INTRODUCTION

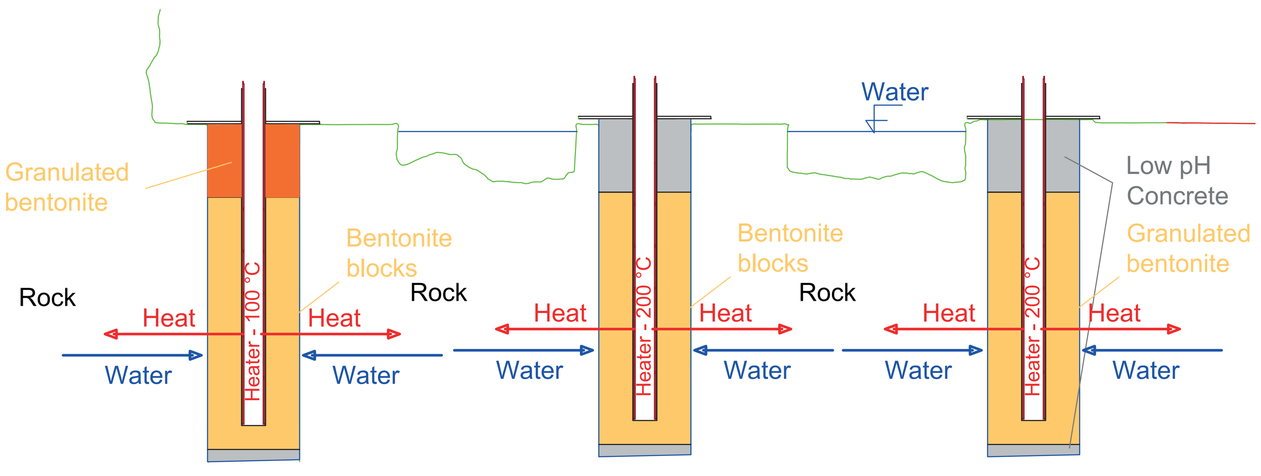
Several in-situ experiments have been conducted to date aimed at improving the understanding of engineered barrier systems (EBS) that will help to ensure the safe disposal of spent nuclear fuel.

The aim is to initiate a discussion on whether it is possible to combine the experience gained from experiments conducted internationally and to propose a series of similar experiments (dimensions, monitoring, etc.) that would be performed in a number of underground laboratories.

The participation of countries that have no (or limited) experience with similar in-situ research would be very welcome.

FUTURE

Approximately the same experimental design...
at a number of underground laboratories... in 4 URLs?
In granitic rock?...



Picture shows a first proposal
(three vertical experiments).

WHY?

- Use of "the best" from previous projects.
- Sharing of knowledge between all the partners from various disposal programmes.
- Enhancement of knowledge on the behaviour of the EBS.
- Comparison of various conditi-ons (URLs) and different types of bentonites (Na, Ca-Mg; pellets vs blocks)?
- Digital twins for the experi-ments for the preparation of a "digital" DGR?

INITIAL PROPOSAL OF THE VARIOUS STEPS INVOLVED

- the presentation of the proposal
- the creation of an international team (under IGD-TP?, discussions under the IAEA platform URF NETWORK?)
- the discussion of solutions for, and the objecti-ves of, the experiments;
- the design and construction solution for a series of experiments;
- critical discussions aimed at determining potential improvements to the proposal;
- the selection of suitable underground research laboratories according to the various national requirements;
- the conducting of the experiments, the valida-tion of mathematical models and the compari son of the results obtained;
- the analysis and evaluation of the experi-ments;
- the identification of follow-up research.
- other – schedule and roadmap?; start with web questionnaire?

Josef URL

Grimsel Test Site (GTS)

Source: www.grimsel.com, © Comet Photoshopping GmbH, Dieter Enz.

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