



Contribution ID: 115

Type: **Poster**

CROCK: Crystalline Rock Retention Processes A 7th Framework Programme Collaborative Project (2011-2013)

Wednesday 19 September 2012 18:00 (1h 50m)

The EURATOM FP7 Collaborative Project “Crystalline Rock Retention Processes”(CP CROCK) is established with the overall objective to develop a methodology for decreasing the uncertainty in the long-term prediction of the radionuclide migration in the crystalline rock far-field. The project is launched in response to the need identified in conjunction with selection of retention data for the forthcoming crystalline host-rock HLW disposal Safety Case. The process of selecting a set of data for this purpose showed that the spread in data is broad and that this spread in data cannot presently be related to material properties or processes. Consequently, very conservative numbers need to be used in order to be defensible within the Safety Case.

The project makes use of the broad set of existing analytical approaches, methodologies, and general knowledge from decades of past investigations. It builds on the output and main conclusions of the 6th FP IP FUNMIG project and the Swedish site selection program. The experimental program reaches from the nano-resolution to the Performance Assessment (PA) relevant real site scale, delineating physical and chemical retention processes. Existing and new analytical information provided within the project is used to set up step-wise methodologies for up-scaling of processes from the nano-scale through to the PA relevant km-scale. Modeling includes testing up-scaling process and parameters for the application to PA and in particular, the reduction of uncertainty.

The project started on 1st January 2011 and will last 2 years and a half (2011-2013).The project is implemented by a consortium with 10 Beneficiaries consisting of large European Research Institutions, Universities and SME's and from countries with dedicated crystalline host-rock disposal programs and particular competence in this field. National Waste Management organizations participate as associated groups, contributing with co-funding to beneficiaries, infrastructure, knowledge and information. They also contribute together with national regulators to guidance with respect to application of the project to the disposal Safety Case and scientific-technical review.

The research leading to these results has received funding from the European Atomic Energy Community's Seventh Framework Programme (FP7/2007-2011) under grant agreement No. 269658 (CROCK).

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Session Classification: Poster Session

Track Classification: Radioactive elements in the environment, radiation archeometry and Health Physics