

# **Recent Scientific and Technological Advances of Site Evolutional Modelling in the Japanese URL's Programme: NA Input**

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Geo-stability has been of great concern to safety issues in geological disposal of high-level radioactive wastes (HLW) in many countries, especially in neighbouring tectonic plates such as Japan. Generally, site evolution models (SEM) that are developed by past geological data on sites may play a central role in safety case including geo-stability from the geological past to several thousand to hundreds of thousand years into the future.

JAEA (Japan Atomic Energy Agency) has been developed/synthesised the SEM methodology utilizing two URLs (Mizunami as a crystalline rock type; Horonobe as a sedimentary rock type) data in the past dozens years. It consists of the on-site palaeohydrogeological investigations and the development of integrative modelling methods combining geology, hydrogeology, hydrochemistry and site tectonics, including uplift and erosion processes.

Here, the current status of the SEM models will be presented and its practical applicability and the potential interaction with NA will be discussed.