

## Influence of structural deformation and chemical alteration by fault activity: -along the Atera fault Gifu, central Japan-

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In a geological disposal system for high-level radioactive waste (HLW), maintenance of a geological environment is considered to be important for long-term safety. And it is also important factor for long-term safety that the changes of feature of fluid flow with fault activities. If a fault form in the Earth's crust, structural deformations and geochemical changes affect geological environment. In particular, elemental migration from geochemical changes along fault is matter that is had to reveal from light of disposal system. We carried out out-crop scale observation of fault zone, fracture system and geochemical, mineralogical analysis on intrafault materials collected at fault zone of the Atera fault in order to reveal the structural deformation and geochemical changes and influencing area.

Observation of fracture system reveals that the influencing area defined by fracture density and fracture fillings is about 250 meters along the fault plane and fault zone is suffered from influence of rain-water penetration. Observation of fault structure and geochemical, mineralogical analysis on intrafault materials reveal that each faults show the influence of hydrothermal alteration and rain water penetration from at the depth of several kilometer to nearby ground surface. Those results suggest that fault zone works as the fluid-flow conduit systems from starting fault activity to present, whereas some faults which are formed at deep underground and didn't reactivation may work for set back or adsorption for elemental migration by presence of clay minerals at fault gouges.