

Function as natural barrier of the various geological units in Japan from the perspective of uranium mineralization

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Long-term stability of the geological environment is one of the important keys for HLW disposal in the geologically active Japanese Islands. Uranium mineralization in Japan has been subjected to many geological processes inherent to the island-arc setting. Mode of occurrence of the uranium mineralization in Japan would be expected to provide useful information on function as the natural barrier of various rock types.

Uranium is mostly adsorbed onto clay, limonite and organic matters. Coffinite is dominant primary mineral. It is generally associated with clay. This mode of occurrence suggests adsorption onto clay and then mineralization. Occurrence of secondary mineral indicates mineralization in the oxidized zone. These modes of occurrences indicate retardation.

The function as the natural barrier to retard the radionuclides with groundwater would be expected in various rock types, because such occurrences are recognized in many rock types throughout Japan.

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