Survey on clay formations as the host rock for geological disposal repository of HLW

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Site selection is the basis and one of the key processes for geological disposal of high-level radioactive waste (HLW). Regarding to the selecting of host rock type and the final decision from the authorities for HLW repository, there should be various alternatives in the vast mainland of China. The results approved that there are suitable clay formations in the mainland of China for HLW geological disposal.

The systematic survey on clays in the mainland of China indicated that the major clay formations are distributed in Northwest China Gansu, Qinghai provinces, Xinjiang and Inner Mongolia autonomous regions, in North China Songliao basin and in East China Shandong, Jiangsu, Anhui, Jiangxi and Zhejiang provinces. Systematic survey on the distribution of clays has been conducted according to the request of the National Plans. The results approved that there are suitable clay formations in the mainland of China for HLW geological disposal. Two clay areas as the candidate area for HLW repository have been recommended for future investigating.

Four distribution areas have been selected as the potential areas with the suitable clay formation. including Zibo area of Shandong province with Tertiary Minghua clay formation, East potion of Gangsu Province with Cretaceous Huanhehuaci(K_1h)clay formation, North margin of Caidamu basin in Qinghai province with Tertiary Gancaigou(ENg)and Youshashan(Ny) clay formations, Tamusu of Bayingebi basin in Inner Mongolia with Cretaceous bayingebi upper clay formation(K_1b^2). While two areas including North margin of Caidamu basin in Qinghai province and Tamusu of Bayingebi basin in Inner Mongolia have been selected as the candidate area for HLW disposal repository in China after preliminary assessment on geology, hydrogeology, geography and economy& society conditions in above four potential areas.