

## Study on Methodology of Development of Perturbation Scenario of Climate Change on a HLW Disposal System

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A climate change is a slow and broad-based phenomenon, and is considered to be one of the factors of change of precipitation and/or sea level change. When evaluating the safety assessment of high level radioactive wastes geological disposal, it is necessary to take into consideration. We set up concrete development of the change scenario resulting from a climate change as a subject. The purpose is for a climate change to consider the impacts affect geological environment using 'Systematic Relationship Diagram'. We examined the collection / arrangement method of the information about how to deal with a climate change phenomenon. Moreover, the methodology which connects change of a climate change and geology environmental conditions was also examined. As main impacts of a climate change has on a surface and geological environment, 'change of a flow state of groundwater ranging from the surface to a sea level and underground by change of amount of recharge' and 'change of animals and plants of ecology activity and the biosphere by change of precipitation and temperature' can be considered. In this examination, we set up the 'index' which represents the state of climate first. By considering that change of the index is a climate change, we decided to improve useful information to construction of the change scenario resulting from a climate change. We extracted annual average temperature and year precipitation as an index of a climate change. Next, with two indices, annual average temperature and year precipitation, we constituted the two-dimensional plane and set up the climate zone using it. And the climate zone was set up as a 'place'. Furthermore, we examined the methodology of grasping the impacts which a climate change has on geological environment using the information based on the point on the earth which can refer to the environment according to this 'place'. As a result, we acquired the prospect which deals with rationally changes of geological environment also including change of surface-of-the-earth environment, and is possible by making annual average temperature and year precipitation into an 'index' about the climate change. Moreover, we acquired collection and the prospect which can be arranged by making change of geological environment conditions into THMCG: Thermal - Hydrological - Mechanical - Chemical - Geometrical information by using 'Systematic Relationship Diagram'.