COMPARATIVE STUDIES OF RADIONUCLIDE TRANSPORT IN GEOLOGICAL FORMATIONS

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By today, the enterprises of different countries have accumulated large volumes of radioactive waste (RW) ranging by the level of activity, as well as spent nuclear fuel (SNF) which are the source of actual and potential radioactive contamination. Thus new approaches to the long-term planning and problem solution in the field of RW and SNF management should be elaborated. In this context, radionuclide transport peculiarities in different geological conditions have to be investigated.The main aim of our investigation is to analyse the separate radionuclides and sites, and to develop of comparable transport codes as well as to evaluate and harmonize the proper performance assessment approaches.During the progress of comparative studies the following underground research centers and potential repository sites have been considered:- Salt formations: WIPP(USA), Gorleben site (Germany), sites in Russia (Baltic, Volgograd, and Tula regions);- Basalts: Mayak site (Russia), Hanford site (USA);- Granite and granito-gneiss: Grimsel Test Site (Switzerland), Aspo Hard Rock Lab (Sweden), Tono-Kamaishi sites (Japan), Research Tunnel Olkiluoto (Finland), AECL (Canada), Kola Peninsula and Krasnoyarsk sites (Russia);- Welded tuffs and ignimbrites: Yucca Mountain (USA).Some preliminary results from consideration are discussed and is shown the necessity of more close international co-operation for harmonization of practices and standards for solving of the mentioned problems.