

Creation of Reference Biosphere Model for Safety Assessment of Deep Geological Repository

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Abstract. In order to evaluate the long-term safety of the deep geological repository, a model of the disposal system, geosphere and initial model of the reference biosphere was developed, considering the scenario of the agricultural habitat (normal evolutionary scenario). It is assumed, that an individual from the critical exposure group consumes contaminated crops and animal products and drinks contaminated water from the well. This model includes different biosphere components and multiple exposure pathways, such as inhalation, ingestion and external exposure. The aim of the safety assessment is to determine the annual individual effective dose for an adult from critical exposure group. The model was created using the GoldSim simulation tool.