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Change of hydro-geological and geochemical conditions of rocks of a near zone of storages

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The construction and operation of storages of the radioactive waste brings indignations in structure and properties of containing rocks of a near zone of object. Containing rocks get new hydro-geological and geochemical parameters. Change of geochemical conditions in a zone of accommodation of storages defines speed of migration of components in rocks and parameters of process of degradation of a design of engineering barriers. The degree of hazardous of radiating objects is defined by speed of development "technogenic" water horizon, size of water exchange, structure of an acting filtrate, quantity and forms of migrating substances, conditions of their migration and change of geochemical conditions in a zone of accommodation of storages of the radioactive waste

Carrying out of researches on studying a geochemical condition of environment in a zone of accommodation is radioactive hazardous objects allows to analyze at early stages of development of processes a condition of constructive elements of a construction, development of processes of degradation of engineering barriers, migration and really to estimate ecological safety of similar constructions and operatively to spend the actions directed on increase of their reliability.

Containing rocks of a near zone of object which should play a role of a hydro impenetrable barrier, as a result of building operations get the raised filtration properties. Increase of filtration properties of containing rocks of a near zone of storages of the radioactive waste will cause development of process of accumulation in broken rocks atmospheric precipitation.

Researches have shown that for 20 years term of preservation of object the water level within the limits of broken rocks a near zone has raised on 5 m. Increase of a level of subsoil waters has occurred not in all territory of accommodation of object, but only in a near zone of a construction.

Formation of a file broken rocks within the limits of a near zone of storage and accumulation in them of atmospheric precipitation is the precondition for change of geochemical conditions of environment in immediate proximity from a construction.

Collecting in broken rocks atmospheric precipitation contain free oxygen and have neutral or poorly sour parameter pH (atmospheric precipitation can sometimes have size pH up to 4-4,5). Waters influence external constructive elements of storage, causing their hydration and chemical destruction.

The structure of a filtrate of a near zone substantially depends on age and a degree of degradation of storage. In an initial stage from concrete chemically active elements (such as, Na +, K +, etc.), and finally - Ca+2 are taken.

Thus it is necessary to note, that shift pH environments in alkaline area in a near zone can be caused by process of chemical corrosion of a concrete design of storage or an output a solution from its volume. Therefore change of size pH environments of a near zone is reliable the indicator of process of destruction of designs of storage.

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