

HYDRO-GEOLOGICAL ASPECTS OF CHOICE OF PLACE FOR RADIOACTIVE WASTES ISOLATION ON EXAMPLE OF CRYSTALLINE FORMATIONS LOCATED AT THE NORTHWESTERN PART OF THE UKRAINIAN SHIELD

VOLYK O.S. Institute of Geological Science of National Academy of Science of Ukraine, Kiev, Ukraine

The intensive development of industrial power engineering is accompanied by accumulation of non-utilized harmful wastes creating threat to ecological safety. Their availability requires an underground isolation. The problem of safe storage and burial places for toxic industrial, radioactive and other harmful wastes excites growing anxiety in the world. For Ukraine this problem is the most actual, especially after disaster on Chernobyl Power Electric Station, as the result of which the anomalous volumes of radioactive wastes were derived within the limits of Ukraine, especially of its northwestern part. Up to 95 % of them are concentrated within the limits of 30-kilometer zone of alienation of the Chernobyl Power Electric Station. This fact causes prime researches for choice of sites, favorable for RAW isolation within the limits of this territory. The main principle for all measures on RAW isolation is the maintenance of safety of the population and environment from RAW influence on any parties of vital activity of present and future of generations. The choice of place for isolation of radioactive wastes begins with preliminary estimation of territory much more extensive, than the site of burial place will take afterwards, on suitability for this aim. During choice of place one from major kinds of researches is the evaluation of hydro-geological conditions of territory, because just the underground water are the reason of possible removal of radionuclides and their hit in biosphere. The factors, defining suitability of a geological medium in this respect are intensity of water exchange, direction and velocity of movement of underground water, distance from a place of burial up to zone of unloading, structure and physical-chemical parameters of underground water. Due to complex geological-ecological and hydro-geological researches data, crystalline formations of northwestern part of the Ukrainian shield - gabbro-anorthosite and rapakivi-granite - are selected as the most favorable regions in Ukraine for isolation of high-active and long-living RAW.