

Prediction of Exogenic Geological Processes (EGP) for Providing Man's Safe Life Activity

SHEKO, A.I., KRUPODEROV, V.S. (All-Russian Research Institute for Hydrogeology & Engineering Geology VSEGINGEO), Moscow, Russia)

The development of effective actions on prevention or mitigation of adverse influences of exogenic geological processes on man's life activity is possible only on the basis of predicting their activity in time and space, assessment of hazard and risk of damage from them.

VSEGINGEO has developed sufficiently reliable probabilistic-determined methods for long- and short-term regional and local predictions of EGP activity, as well as for assessment of a hazard and risk of damage on territories developed and under development.

The predictions are being prepared on the basis of monitoring data for periods of 25 to 30 years (long-term prediction) and of a year (short-term). In case of catastrophic EGP-manifestations, the predictions can be operative, prepared for periods of several days.

Under a hazard of EGP of one or another genetic type one should understand a probability of its manifestation in a given place, in a given time, and with certain energetic characteristics. The hazard is an objective category and does not depend whether there are people, animals or economic constructions in the given place. At the same time, a hazard is a variable value and depends on activity of a given process in a given time.

Risk is a probability of a damage which is determined usually as a product of hazard probability of a given EGP genetic type of a given energetic class and a cost of material

values (including people) being within the
influence zone of this hazardous process.