



## ESTIMATION OF RISKS AND POSSIBLE ECOLOGICAL AND ECONOMIC DAMAGES FROM LARGE-SCALE NATURAL AND MAN-INDUCED CATASTROPHES IN ECOLOGY-HAZARD REGIONS OF CENTRAL ASIA AND THE CAUCASUS

Valyaev A.N.<sup>1</sup>, Kazakov S.V.<sup>1</sup>, Stepanets O.V.<sup>2</sup>

<sup>1</sup>*Nuclear Safety Institute, Moscow, Russia*

<sup>2</sup>*Institute of Geochemistry and Analytical Chemistry, Moscow, Russia*



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It is our international Program with the participation of 6 countries: Russia, Kazakhstan, Kyrgyzstan, Georgia, Armenia and Azerbaijan. For all presented regions we single out the following typical factors that significantly increase a risk of implementing natural and man-induced catastrophes: (1) these regions are located in the mountain areas with the high seismic level (5-9 grades by Richter scale); (2) the largest mountain rivers have cascades of powerful hydroelectric stations with their sizeable reservoirs and huge high dams (>100m); (3) on the regions' densely populated lands there are plenty of mines for extraction of metals/minerals, industrial facilities and plants with U-tailing dumps and burrows of varied pollutants with using the different radioactive, toxic and poisonous substances in their technologies; (3) the man-induced activity here increases probabilities for occurrence of not only severe man-induced catastrophes, but also natural ones; (4) An especially grave situation has been created on trans boundary lands of these countries, due to the lack of common ecological and geochemical monitoring systems, that increases political and economic tension between the countries and generating negative migration processes; (5) risks and ecological-economic damages from catastrophes are not only regional but also global by nature, since they entail contamination of vast lands, the basins of the Black, Caspian and Kara Seas, that of the Arctic Ocean and, consequently, the entire World Ocean; (6) opportunity to perform deliberate attacks of terrorists with the using of explosives, that are able to cause man-induced catastrophes and stimulate natural calamities (earthquakes, mudflows, landslips, etc.). It is easier to implement attacks of terrorists there due to the intersection of main lines, an available border with current centers of international terrorism, located in Chechnya, Afghanistan and some others. The hazard is especially great for new independent states, where the system of safety, boundary and customs control, that of strict visa control and other state safety measures have not yet been formed. Consequences of terrorist attacks in the regions will be followed by major human and huge material losses, and extremely negative irreversible global scale environmental effects.

The humankind has faced the majority of the above issues for the first time and, therefore, there are no good suitable methods provided for their solving. A purposeful activity of all countries of the world community is required. Program's results of Program 3 will be used in the following: (1) When developing a methodology/strategy to regulate and manage risks in emergencies; (2) when mapping risk allocation by various lands; (3) when developing a common system for emergency prevention/elimination.

Our Nuclear Safety Institute of Russian Academy of Sciences (IBRAE RAS) has own experience in these scientific directions (<http://www.ibrae.ac.ru>).

This Program will promote the realization of concept of substantial development with growth of economical cooperation and stability, decreasing of political stress not only for the countries- participants, but also at global scale for all countries, located at the continent.