

Updated indicators of seismic risk for the territory of the Irkutsk region and the Republic of Buryatia

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Abstract For all earthquake prone countries, including the Russian Federation, seismic risk assessment is periodically updated. The need for updating is increasing due to changes in assessments of hazard level and vulnerability properties of the elements at risk. For the earthquake prone regions of the Russian Federation classified as the priority development zones, risk indicators updating should increase the effectiveness of preventive measures implementation aimed at risk reduction. Calculations show that the development of risk maps, as well as the subsequent planning and implementation of preventive measures tied to the place marked on the map as the most dangerous, can reduce possible social and economic losses by 20-30%. The article describes the issues of updating seismic risk indicators for the territory of the Irkutsk region and the Republic of Buryatia. For the considered areas, which are included in the advanced development program, the actual values of seismic hazard and building vulnerability were used. The procedure for assessing and mapping risk indicators with the geographic information system “Extremum” application is given. Examples of thematic maps are presented, illustrating rather high estimates of individual risk for 6% of the territory of the Irkutsk region and 39% of the territory of the Republic of Buryatia. The results of the study indicate the need and importance of ensuring the seismic safety of the population in the framework of planning measures for the advanced development of territories.

Keywords Risk assessments updating, social and economic indicators of seismic risk, simulation modeling, Irkutsk region, Republic of Buryatia, information system “Extremum”.

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