



Seismic Hazard Assessment for Azerbaijan

Arif Akhundov (1), Tahir Mammadli (2), Etibar Garaveliyev (2), Qurban Yethirmishli (2), and Gulum Tanircan (3)

(1) The Ministry of Emergency Situations, Baku, Azerbaijan (arifakhundov@hotmail.com), (2) Republic Seismic Survey Center of Azerbaijan, Baku, Azerbaijan., (3) KOERI, BU, Istanbul, Turkey (birgore@boun.edu.tr)

Seismic Hazard Assessment for Azerbaijan is studied in the frame of a NATO SFP project “Seismic Hazard Risk Assessment for Southern Caucasus – Eastern Turkey Energy Corridors”. The territory of Azerbaijan which is included into the Alpine folded system is characterized by a high seismic activity. In the territory fault zones with different direction create a very complex geological structure. Such a heterogeneity of distribution of seismicity is connected with a various level of activity of separate parts of fault zones.

Probabilistic seismic hazards of the territory were calculated by defining source zones at high seismicity areas.

Hazard maps were prepared, in terms of intensity, spectral accelerations at 0.2, 1.2, 2.0 , 4.0 sec periods, PGA, PGV and PGD for 10% probability and 2% probability in 50 years. Max PGA and PGV for 10% probability in 50 years reach up to 0,216 g and 31.3 sm/s at Sanqachal, Shamakhy-Ismaily regions respectively.

Maps of maximum earthquake intensities for Azerbaijan and adjacent Caspian Sea territory have been plotted and analyzed.

The analysis of these maps show high level of hazard are observed in Vandam fault zone, in the regions Shamakhy, Ismailly.

The background level of seismic hazard in terms of intensity is equal to 8 (MSK - 64). High seismic hazard 9(MSK - 64) is expected in a zone of the Great Caucasus which covers territory from the city of Shamakhy up to border of Georgia. Other zones with the same potential danger are allocated within the limits of Small Caucasus.

This information about seismic hazard will be used at seismic risk assessment of the pipelines.