

Re-evaluation of Large Dams in Van Inner Basin, Turkey

Hasan Tosun¹

¹Eskisehir Osmangazi University, Civil Engineering Department
Odunpazari, Eskisehir, Turkey
htosun@ogu.edu.tr

Abstract - In Turkey, there are twenty-five river basins. One of them is Van Inner Basin, which is located near Iran border, having 1.79 million hectares of surface area in East Turkey. This basin includes more than 40 dams. Most of them are small embankment dams. Major earthquakes with the potential of threatening life and property occur frequently in the basin. A national safety program was commenced to re-evaluate large dams of the basin. This paper summarizes the methods considered for earthquake safety evaluation and introduces the results of the study, which was performed for six large dams, namely Kockopru, Morgedik, Patnos, Sarımehmet, Sihke and Zernek dams in Van Inner basin. The seismic hazard analyses have indicated that peak ground acceleration changes within a wide range for dam sites of this area. The total risk analyses depending on the seismic hazard rating of dam site and risk rating of the structure have concluded that most of these large dams have high-risk class and can need design and construction measures to tolerate requirements resulting from updated seismic codes.

Keywords: Embankment dam, Seismic hazard, Total risk.