

The rating of large dams situated on Bistrita and Siret Rivers (Romania) in seismic risk classes

Iren Adelina Moldovan (1), Dragos Toma-Danila (1), Angela Petruta Constantin (1), Anica Otilia Placinta (1), Emilia Popescu (1), Felix Borleanu (1), Victorin Emilian Toader (1), and Traian Moldoveanu (2)

(1) NATIONAL INSTITUTE FOR EARTH PHYSICS, MAGURELE, ROMANIA (irenutza_67@yahoo.com), (2) GEOTEC LTD, BUCHAREST, ROMANIA (geotec.trm@mailbox.ro)

The most important specific requirements towards dams' safety is the seismic risk assessment. Probabilistic seismic hazard (PSH), vulnerability and risk studies for dams situated on Bistrita and Siret Rivers (Romania) and their tributaries will be realized in this study.

The dams rating into seismic risk classes will be accomplished using the theory of Bureau and Ballentine (2002), and Bureau (2003), taking into account the maximum expected peak ground motions at the dams site, values obtained using probabilistic seismic hazard assessment approaches for different exposure periods, the structures vulnerability and the downstream risk characteristics (human, economical, historic and cultural heritage, etc) in the areas that might be flooded in the case of a dam failure.

This work is supported from PCCA 2013 Project DARING 69/2014, financed by UEFISCDI, Romania and NUCLEU Program, Project PN 16 35 03 01/2016, and its final goal is to provide the local emergency services with warnings of a potential dam failure and ensuing flood as a result of an large earthquake occurrence, allowing further public training for evacuation.

Bureau GJ (2003) "Dams and appurtenant facilities" Earthquake Engineering Handbook, CRS Press, WF Chen, and C Scawthorn (eds.), Boca Raton, pp. 26.1-26.47.

Bureau GJ and Ballentine GD (2002) "A comprehensive seismic vulnerability and loss assessment of the State of Carolina using HAZUS. Part IV: Dam inventory and vulnerability assessment methodology", 7th National Conference on Earthquake Engineering, July 21-25, Boston, Earthquake Engineering Research Institute, Oakland, CA (CD ROM).