

Assessing Dam Breach Hazard in Cyprus

T. D. BLYTH, Mott Macdonald Ltd, Cambridge, UK

Dr K. KYROU, Water Development Department, Nicosia, Cyprus

S. PATSALI, Water Development Department, Nicosia, Cyprus

SYNOPSIS. Accession to the European Union has driven dam safety reform in Cyprus. The Water Development Department (WDD) a sub-directorate of the Ministry of Agriculture, Natural Resources and Environment is responsible for ensuring Cyprus meets the requirements of the European "Directive 2007/60/EC on the Assessment and Management of Flood Risks". The directive requires member states to undertake flood risk assessments for all river basins and produce flood hazard risk maps and management plans where a significant risk is found to exist. The WDD is now in the process of developing Reservoir Flood Plans for its 56 International Commission on Large Dams (ICOLD) registered dams. The WDD engaged Mott Macdonald to provide advisory support and technical training in Hazard Ranking, Dam Break Hazard Analysis (DBHA), Flood Mapping and Emergency Planning.

Initial Hazard Ranking, based on dam height, reservoir capacity, downstream reach, and community characteristics, provided a, quick, semi-rigorous and rational basis for prioritizing WDD's many reservoirs for future hazard analysis and planning. Current UK guidelines and methodology - modified to account for local conditions – were then applied to assess hazard posed by individual reservoirs and to develop contingency plans for those reservoirs. Rapid and Standard methodology outlined in the Draft Engineering Guide to Emergency Planning for UK Reservoirs (2007) (herein The Draft Guide) were used to assess flood risk for a number of dam breach scenarios, at each reservoir. Risk assessments based on the Interim Guide to Quantitative Risk Assessment for UK Reservoirs (Brown & Gosden, 2004)) was also undertaken.

A number of observations and conclusions were drawn from the work which may prove valuable for others preparing Reservoir Flood Plans and on-site Emergency Plans for Reservoirs in the UK and overseas.