

Dambreak and Emergency Planning: meeting end user needs

MW MORRIS, HR Wallingford Ltd, Wallingford. UK.

AK HUGHES, Atkins Ltd, Epsom. UK.

F BUIJS, HR Wallingford Ltd, Wallingford. UK.

SYNOPSIS. With changes to UK legislation and the European Floods Directive on the point of implementation, dam owners will face more stringent requirements to consider flood risk from reservoirs and to take preparatory steps in terms of dambreak flood risk assessments and emergency planning. Guidance on emergency planning in the UK is under review and a number of significant research projects are underway to advance our understanding and ability to analyse and manage flood risk. With the continued rapid pace in development of computing power, modelling and mapping technology, it is a good time to review current practice and capabilities, and to identify what should be considered as reasonable practice for dambreak modelling and emergency planning.

In reviewing practice, it is essential to consider the range of end user applications that the results of any study might be used for, and to ensure that the uncertainty and resolution of any predictions are suited to such applications. A failure to recognise the significance and magnitude of uncertainty within these predictions, and applications, undermines the value of undertaking and using such studies.

This paper presents a brief history of dambreak and emergency planning development in the UK leading towards the current convergence of a number of projects and drivers. This includes how modelling and data management tools have developed over the last decade, particularly within the field of flood risk management in general, to now provide us with powerful tools for flood risk assessment and management planning. Different approaches for dambreak analysis and emergency planning are considered, leading to a recommended type of approach that steps towards greater integration with wider Environment Agency flood risk management principles and is driven by the practicalities of end user needs and a consistent approach to dealing with uncertainties.