

The use of the “Unified Method of Risk Analysis” on a United Utilities Pennine type dam.

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SYNOPSIS. United Utilities has been using Portfolio Risk Assessment (PRA) since 2002 to evaluate the vulnerability of their dams to piping and internal erosion. Remedial works have been proposed on a number of dams but the degree of risk reduction likely to be achieved by these works cannot be ascertained at Portfolio level. It was recognized that a method was needed to estimate dam performance before and after remedial works to justify the expenditure. Therefore UU engaged their engineering service provider, MWH, to research and develop a methodology based on event tree methods. Research by MWH in the UK and America indicated that the recently developed “Unified Method of Risk Analysis for Dam Safety” (referred to as a Toolbox) would provide the required methodology.

The paper outlines UU’s approach to risk assessment, summarises the history and the principles behind the Toolbox, and describes the experience of UU/MWH in using it on a trial dam.