



EVENING MEETING

MONDAY 27th FEBRUARY 2012 at 5:30pm

One Great George Street, London

(Nearest tube: Westminster)

A Guide to Risk Assessment for UK Reservoirs

By

Mark Morris (HR Wallingford / Samui France)
David Bowles (RAC Engineers & Economists and Utah State University)
Alan Brown (Jacobs)

For a brief synopsis see overleaf

Admission free

Teas available from 5.00pm

For more information please contact

**Tim Fuller (BDS Secretary) on 020 7665 2234 or
email: bds@ice.org.uk**

This meeting will also be streamed live on the internet. For more details on how to view this meeting online please visit the BDS website.



A Guide to Risk Assessment for UK Reservoirs

Mark Morris (HR Wallingford / Samui France)
Mike Wallis (HR Wallingford)
Alex Topple (HR Wallingford)
**David Bowles (RAC Engineers & Economists and
Utah State University)**
Alan Brown (Jacobs)
Keith Gardiner (United Utilities)
John Gosden (Jacobs)
Andy Hughes (Atkins)
Paul Sayers (Sayers & Partners)

Synopsis

The Environment Agency is undertaking a project which will provide practical advice and guidance on the use and application of risk analysis and assessment for management for UK reservoirs. The project is updating old and developing new guidance for Reservoir Owners, Inspecting Engineers and Supervising Engineers to assist in managing reservoir safety and to meet the requirements of legislation in England and Wales. It will also be suitable for wider use within the UK.

The guidance will provide:

- an updated single point of information and guidance on risk assessment practice for UK reservoirs
- a framework for UK reservoir safety risk management
- a structured procedure for potential failure modes identification
- tools and approaches for estimating the probability and consequences of failure
- methods to assess the benefits of options to reduce risk
- support for reservoir owners in managing operational and management risks
- worked examples using different pilot site applications

Following an earlier scoping phase, the project started in 2011 and aims to provide a completed Guide in time for the BDS conference later in 2012. The work is being undertaken by a team drawn from a variety of organisations. The evening presentation will provide an overview of the approach being developed, along with details on some aspects of the various methodologies being proposed. Details on the ongoing programme of industry workshops and the forthcoming programme of pilot studies will also be provided.



Mark Morris

Mark Morris has over 25 years experience of working on research and consultancy within the field of flood risk analysis and management. He has particular expertise in relation to reservoir safety including risk and breach analysis and has also coordinated and participated in collaborative research at an international level supporting the development and testing of tools and methods supporting flood risk analysis, and in particular for reservoir safety, dambreak analysis and emergency planning.

Mark spent 10 years supporting the BDS committee in various roles and is a member of the Reservoir Safety Advisory Group (RSAG) of the joint Agency / Defra research programme. Recently, after working with HR Wallingford for over 20 years, Mark relocated to France where he continues to work on international research and reservoir safety as an independent consultant (Samui France).

Alan Brown

Alan Brown has been an All Reservoirs Panel Engineer for 10 years and is Discipline lead for Hydraulic structures and dams at Jacobs. He led the Defra scoping project into comparison of the risks to dams from internal erosion and floods in 2000, which led to the publication of the Interim Guide to Quantitative Risk Assessment in 2004. He was lead author for the draft UK Guide to Internal Erosion for Defra completed in 2007

David Bowles

Since 1978 David and colleagues have pioneered the dam safety risk assessment and risk management field through R&D at Utah State University (USU) and applications for owners and regulators worldwide through RAC Engineers & Economists (RAC).

In addition to this Environment Agency project, David's current assignments include:

- Senior Advisor to Headquarters, US Army Corps of Engineers, for development and implementation of dam and levee safety portfolio risk management;
- Consultant to Tennessee Valley Authority for development and implementation of portfolio risk management and initial screening, and advice on governance;
- Individual dam and portfolio risk assessment applications and guidance development in the UK, South Korea, Mexico and Spain;
- Analysis of flood hazard regulatory frameworks worldwide for the CEATI DSIG project, "Comparison of Flood Hazard Estimation Methods for Dam Safety"; and
- Development and support of software for dam safety risk analysis (DAMRAE), life-loss estimation (LIFESim/HEC-FIA), and PRM (ResRisk).

David is the Managing Principal of RAC and Professor Emeritus of Civil and Environmental Engineering at USU. At USU he was Director of the Institute for Dam Safety Risk Management and the second largest university water research centre in the US. His career started in construction and design in the UK. In the early 1980's he was Branch Manager of Law Engineering's Denver Office. He has extensive experience as an expert witness in major lawsuits for mining impacts, water resources management, hydropower generation, toxic tort, urban flooding, reservoir operation, flood hazard classification, and dam and canal failure and downstream impacts.