



EVENING MEETING

MONDAY 19^h MAY 2014 at 6:00 PM

One Great George Street, London

(Nearest tube: Westminster)

**ICOLD Bulletin 164: Internal erosion of existing
dams, levees and dikes, and their foundations**

By

Rodney Bridle (Dam Safety Ltd)

For a brief synopsis see overleaf

Admission free

Teas available from 5.30pm

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.



ICOLD Bulletin 164: Internal erosion of existing dams, levees and dikes, and their foundations

By

**Rodney Bridle MSc(Eng) CEng FICE CGeol FGS
(Dam Safety Ltd)**

Internal erosion causes about half of all embankment dam failures, about one third are in existing dams. The Bulletin shows that failures initiate in concentrated leaks, by backward erosion, by contact erosion or by suffusion when the hydraulic forces imposed by seepage through them exceed the capacity of the soils in the dam and its foundations to resist them. The greatest hydraulic forces occur during periods of high water level as floods pass through the reservoir. If the materials in zoned dams have no filtering capacity, erosion will continue and progress towards failure. Homogeneous (unzoned) dams are particularly vulnerable because if erosion initiates, no other materials that may arrest it are present. Using case histories where sufficient details are available, the presentation explains how the ICOLD Bulletin makes it possible to investigate if a dam is vulnerable to internal erosion by assessing the water level at which erosion will initiate, and to investigate the capabilities of the materials in zoned dams to arrest erosion, sometimes after considerable leakage and damage.

Biography details of presenter

Rod Bridle is an international consulting engineer on dams. He is a member of the Expert Engineering Panel with Dr Kaare Hoeg and Prof Robin Fell advising BC Hydro on the 180m high WAC Bennett Dam in Canada. He was a Partner and Director in Watson Hawksley and Montgomery Watson (now MWH). He joined the firm to design and supervise construction of Empingham Dam, retaining Rutland Water, under the guidance of Prof AW Bishop and Prof PR Vaughan of Imperial College. He is an associate of the Geotechnical Consulting Group. He is a past Chairman of BDS and is the UK representative on the ICOLD Embankment Dams Committee. He was principal author of Bulletin 134: Weak Rocks and Shales in Dams, and is editor, part-writer and enthusiastic disseminator of the new understanding of internal erosion presented in Bulletin 164: Internal erosion of existing dams.

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