The British Dam Society

EVENING MEETING

Monday 13th January 2020 at 6:00pm

One Great George Street, London (Nearest tube: Westminster)

Pipework, Valves and Associated Equipment in Dams. A guide to operation, maintenance, condition assessment and rehabilitation

Susana Martins Lopes, Arup
David Brown, Canal and River Trust
Stuart King, SSE

For brief presenter biographies see overleaf | Admission free | Teas available from 5.30pm

This meeting will be streamed live on the internet. For more details, including enjoying the live stream as part of a group at one of our Regional Hubs around the UK, please visit the meetings page on the BDS website: www.britishdams.org
For more information please contact the ICE on 020 7665 2147 or email: societyevents@ice.org.uk

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Synopsis

The average age of UK reservoirs is circa 125 years and this also generally applies to the associated pipework systems. Pipework systems in dams is a collective term for pipes, valves, gates and associated equipment, along with fittings, joints, jointing materials, supports, restraints and drainage pipework, which are critical to the safe operation of a dam. The failure of such elements to operate properly, whether routinely or in an emergency, can have severe consequences.

The new CIRIA report is an update, review and extension of the Report 170: Valves, Pipework and Associated Equipment in Dams – Guide to Condition Assessment (Reader *et al*, 1997) published by CIRIA. This subject was ranked fourth in the 2016 Defra reservoir safety research strategy review due to the gaps in available guidance with respect to selection and operation of valves and gates for dam structures and because there is no consistent recent UK guidance for this subject. This report is of paramount importance to dam safety in existing assets and draws on a further 20 years' experience of good practices and incidents, along with challenges that have been overcome. An overview to the new guide will be followed by two case studies:

1. The Canal & River Trust is responsible for many very old dams. The challenges which would result from their draw-off arrangements were not appreciated at the time of construction. Pressurised pipelines with downstream control have been updated by lining using a variety of techniques and by installing upstream valves. The Trust has a duty to conserve its heritage. Where appropriate, original equipment is restored and remains in use. Sometimes it must be replaced but may be conserved, interpreted and displayed on site or at a museum.
2. SSE Renewables refurbish critical gates and valves, typically on a 24-year cycle. A number of examples of these refurbishments were presented as case studies in the guide. Since these case studies were submitted SSE have undertaken further refurbishment projects. Stuart will provide some examples of what works were undertaken, what issues were found, and how these were resolved.

Presenter Biographies

Susana Martins Lopes is a Senior Civil Engineer in the Arup Water Group. She was the CIRIA guide Project Manager and one of the main authors. Susana has over 16 years' experience in water supply systems, water distribution networks and wastewater systems. Her skills include hydraulic design, surge analysis, civil engineering and project management. Susana has international experience having previously worked on several different projects for clients established in Angola, Cape Verde, Morocco and Portugal.

David Brown is the Principal Reservoir Engineer for the Canal & River Trust. The Trust is responsible for 72 large raised reservoirs, built in the 18th and early 19th Centuries to supply water to the canals of England and Wales. He is a Fellow of the ICE and has been a Supervising Engineer for 19 years.

Stuart King has over 20 years' experience in dams and reservoir water resources. He is the Reservoir Safety Engineer at SSE Renewables, delegated responsibility for the safety of 77 reservoirs and has worked in this role for over 11 years. He has been a Supervising Engineer for almost 15 years and currently supervises 20 reservoirs.