

# ICOLD-CIGB 2024

Sept 27 - Oct 3  
New Delhi, India

92<sup>nd</sup> Annual Meeting International Commission on Large Dams

**27<sup>th</sup> and 28<sup>th</sup> September 2024**

## **Short Course on Surveillance and Monitoring for Tailings and Embankment Dams**

**CBIP Building, Conference Hall (1st Floor),  
Malcha Marg, Chanakyapuri,  
New Delhi 110 021, INDIA**

ICOLD Technical Committees L and Q have combined to present this short course of interest to engineers, dam operators and dam owners wanting to develop effective surveillance and safety management for tailings and embankment dams. The 2-day course guides attendees from Potential Failure Mode Assessment (PFMA), through visual inspection practice, instrumentation selection, state of the art existing and new technologies and design and interpretation of surveillance data. The course includes presentations from leading international practitioners and panel discussions, with attendees involved in a practical training exercise.

Attendees will take part in a surveillance system design exercise with the best design as judged by the presenters receiving a prestigious ICOLD award.

Registration for this short course is additional  
to the general ICOLD 2024 registration fee

USD \$120 ICOLD members  
USD \$95 or 8,000 INR SAARC countries

USD \$60 ICOLD young delegates  
USD \$60 ICOLD research students

plus 18% GST

Register at [ICOLD 2024.org](https://www.icold2024.org)

For more information contact [david.brett@ghd.com](mailto:david.brett@ghd.com)



# Day 1

## Session 1 - Surveillance and Monitoring Overview

Welcome and Introduction – Surveillance/Monitoring –  
Dam surveillance fundamentals: where do tailings dams stand?  
Tailings Dam specific issues

*Caius Priscu, Canada  
Manuel Membrillera Committee Q  
David Brett, Australia*

## Session 2 - Failure Modes and Instrumentation Selection

Monitoring to detect potential failure -  
Monitoring and testing to confirm dam geotechnical performance  
Monitoring and testing to confirm dam environmental performance  
Designing of Monitoring Systems - What would we like to measure?

*Malcolm Barker, Australia  
Edgar Salas, Australia  
Annika Bjelkevik Sweden  
TBA - Geocon*

## Session 3 - Instrumentation Installation - What can go wrong?

Traps for unwary - What can go wrong when installing instruments

*Theo Gerritsen, Rio Tinto Australia*

## Session 4 - Visual Inspections

Visual Inspections – scale of dam vs how often, how detailed?  
Special Visual methods – underwater, remote CCTV, drones

*Panel including round-table discussions  
Arnkjell Lokke, NGI*

## Session 5 - Current Monitoring Technology

Current Monitoring Technology - Supplier presentations

*Panel of suppliers chaired - Theo  
Gerritsen*

# Day 2

## Session 6 - Glimpse to the Future

*Panel chaired by Arnkjell Lokke,  
Norwegian Geotechnical Institute*

## Session 7 - Data Acquisition and Automation

System Design

*presentation by suppliers - how data  
collected, managed, kept secure, used*

## Session 8 - System Design, Interpretation and Use

Interpretation and use of surveillance data including development of TARPs

*Panel chaired by Arnkjell Lokke*

## Session 9 - Case Histories

*Various international examples*

Suppliers presenting include: - *Geosystems/Hexagon, Terra Insights (RST and Measurand),  
Geocon, LSI-Lastem, Elaxon Mining, Hydro-research, IMS, IDS -Georadar, Sixense and others*