CLEAN ENERGY AND WATER INSTITUTE

entura

DAM SAFETY PRINCIPLES AND PRACTICE

Dam safety programs are important to minimise commercial, social and environmental risks and to ensure sustainable hydropower generation or water management operations into the future. This involves the development of policies, processes and procedures, risk and asset management strategies and plans, stakeholder engagement and communication plans, surveillance, maintenance planning and implementation, and compliance auditing.

This course provides a detailed technical engineering program for the elements and implementation of dam safety programs. It covers consideration of types of dams and related structures such as earth filled dams, rockfill dams, concrete dams, spillways and floodgates, forebays, diversions, intakes and outakes, and tailraces.

The course material is derived from Entura's experience supporting Hydro Tasmania to design, build and maintain over 50 major dams using a variety of methods, together with our wealth of experience working on many of Australia's major dams over the last decade, as well as some iconic international projects.

After completing the course, participants will have a good understanding of the key elements involved in a dam safety program and they will have the knowledge and tools to effectively inspect and monitor dam infrastructure.

COURSE CONTENT

Background and overview of dam safety

- History of dams and dam safety
- Types of dams
- Elements of an effective dam safety program
- Governance, and legal compliance
- Industry practice and guidelines
- National and international standards

Dam safety planning

- Dam safety risk assessment
- Dam safety program design
- Portfolio risk assessment
- Dam break modelling
- Emergency response planning

Dam design

- Geology, soils and foundations
- Floods and spillways
- Embankment and concrete dams

Dam construction

- Construction methods
- Foundation preparation and grouting
- Embankment construction
- Concrete construction

Dam operation and maintenance

- Inspections and monitoring
- Data management
- AMS (automated dam monitoring system)
- Condition and deficiency evaluations
- Dam upgrades
- Failure modes surveillance and responses

PARTICIPANT PROFILE

- Dam safety managers
- Hydropower and dam engineers
- Dam surveillance engineers

LEARNING OBJECTIVES

To provide participants with an understanding of the technical elements and the risks and issues specific to dam safety.

LEARNING METHODS

- Lectures
- Case studies
- Exercises and assignments
- Optional field visits

COURSE PROVIDERS

Entura's lecturers include:

- Accredited training professionals
- Technical specialists and professionals with extensive experience and qualifications in the water and hydropower infrastructure industry

CUSTOMISATION

This course can be customised in content and duration to suit participant requirements. This could be to create a particular focus, level of depth, or additional/alternative topics.

COURSE DURATION
4-7 DAYS

LOCATION:
Tasmania, Australia
(Includes site visits)
Client site as negotiated

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