Dam Safety Interest Group

Many of the dams around the world were designed and built over 35 years ago. As these structures age, the level of safety becomes more difficult to evaluate, particularly where original design details are not known. Moreover, safety and design standards have changed over the years and many of these aging structures must be upgraded to meet current standards. Research is required for the development and evaluation of new diagnostic monitoring tools and techniques for the assessment of the stability and safety of existing dams. New repair materials and techniques can reduce the cost of required dam safety improvements.

The Dam Safety Interest Group (DSIG) is composed of dam owners who jointly sponsor research & development projects designed to help assess and improve the safety of dams. Today, the DSIG is represented internationally by participants from Canada, the United States, Australia, Sweden, France, the United Kingdom, and Germany.

Topics & Issues

Risk assessment for dam safety

The use of geophysical methods in the diagnostics and monitoring of embankment dams

Erosion and piping in dams

Reliability of discharge facilities

Ice loadings

Probability (frequency) of extreme floods

Emergency preparedness

Testing of embedded dam anchors

DSIG Technology Coordinator

Mr. Constantine G. Tjoumas provides insight accumulated over more than 25 years with the Federal Energy Regulatory Commission (FERC). He most recently held the position of Director, Division of Dam Safety and Inspections with FERC, overseeing the establishment, maintenance, and review of policies, procedures, and standards for the inspection and supervision of more than 1,700 licensed hydroelectric projects comprising 2,600 dams across the United States. This included supervising the work of a highly specialized staff of engineers and geologists engaged in activities related to the construction and the operation and maintenance of projects, and the establishment of a continually evolving dam safety and dam security inspection program. He is a Member of the American Society of Civil Engineers and formerly served as Chairman of the Committee on Dam Safety and Dam Security with USCOLD (now the USSD) and is currently the Vice Chairman of the ICOLD Committee on Dam Safety.

Projects

for a complete project listing, please visit: www.ceatech.ca/dsig

- Prediction of Extreme Floods Using Multifractals and Physically-Based Estimates
- Risk and Uncertainty in Dam Safety
  - Part I Guiding Principles
  - Part II Commentary on Risk Analysis
  - Part III Theoretical Considerations
- Evaluating Manpower/Technology/Technique/Organization (MTTO) to Improve Dam Safety
- Debris Management in Spillways and Waterways During Floods
- Non-Destructive Testing of Bar or Cable Anchors Embedded in Concrete Dams
- Embankment Dam Erosion Project
- Debris Management in Spillways and Waterways During Floods
- Investigation of Geophysical Methods for Assessing Seepage and Internal Erosion in Embankment Dams
- Static Ice Loads on Hydro-Electric Structures: Summary Report, Ice Load Design Guide and Ice Load Prediction Computer Program
- Dam Safety Surveillance Training
- Sliding Resistance of Concrete Dams
- Dam Overtopping Erosion
- Dam Concrete Deterioration

Workshops

- Dam Safety Risk Assessment
- Emergency Preparedness
- Evaluating Manpower/Technology/Technique/Organization (MTTO) to Improve Dam Safety

CEATI INTERNATIONAL

Annual Activities

2-3 Meetings

1-2 Workshops

5-7 Conference Calls

Weekly Information Exchange

Participation is open to:

Dam Owners

Project Reports

Over the years more than 1300 projects have been completed and published in the fields of:

Generation; Transmission
Distribution; Utilization

For a complete listing, please consult our website.

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