

USSD COMMITTEE ON MONITORING OF DAMS AND THEIR FOUNDATIONS CHARTER

Approved by the Board of Directors April 7, 2019

COMMITTEE DESCRIPTION

The Monitoring of Dams and Their Foundations Committee supports and promotes the advancement of the state-of-the-art in the field of instrumented and visual monitoring of dams. The Committee membership includes professionals from: (1) government or private organizations that own and operate dams, (2) government organizations that regulate dam owners, (3) consulting engineers that provide engineering services to dam owners, and (4) suppliers that provide equipment used in the instrumented or visual monitoring of dams. The Committee discusses technical issues, develops guidelines and publications, presents workshops, and generally promotes the advancement and optimization of techniques with respect to the monitoring of dams, with the effectiveness of these efforts being enhanced by the diverse backgrounds, experiences, and perspectives of the various Committee members.

The Committee works in support of the mission and activities of USSD, and in support of the International Commission on Large Dams (ICOLD) Technical Committee on Dam Surveillance, which currently has the following special focus areas: (1) methods for the improvement of the quality and reliability of information, (2) data processing and representation techniques, (3) effective diagnostic analyses to determine dam behavior patterns, (4) dedicated surveillance systems for the optimization of maintenance, rehabilitation, and other life cycle costs, and (5) lessons that can be learned from monitoring case histories.

TERMS OF REFERENCE

The Monitoring of Dams and Their Foundations Committee was established by the Board of Directors of USSD. The Monitoring of Dams and Their Foundations Committee is charged with providing technical support to the USSD, focusing on the role of monitoring the stability and operational performance of water resource structures. The Committee provides other assistance and support to the efforts and programs of USSD on an ongoing basis. Further, the Committee assists and supports the efforts of the ICOLD Technical Committee on Dam Surveillance. The Committee keeps the general membership of USSD informed of developments in the area of dam monitoring and surveillance through timely publication of reports and white papers, announcements in the USSD Newsletter, input to the committees section of the USSD website, and in the organization and execution of periodic workshops. The Committee also collaborates and/or assists with other committees in developing and promoting education and training activities under the four imperatives of the 2014-2017 Strategic Plan: Advocate, Educate, Collaborate, and Cultivate.

BACKGROUND AND HISTORY

The USSD Monitoring of Dams and Their Foundations Committee has been in existence for more than 30 years. Some notable Committee publications include:

- General Considerations Applicable to Performance Monitoring of Dams (1986).
- General Guidelines and Current U.S. Practice in Automated Performance Monitoring of Dams (1993).
- General Guidelines for Automated Performance Monitoring of Dams (2002).
- White Paper: Why Include Instrumentation in Dam Monitoring Programs? (2008).
- White Paper: Development of an Instrumentation Program (2013).
- White Paper: Instrumentation Data Management and Analysis (2013).
- White Paper: Routine Instrumented and Visual Monitoring of Dams Based on Potential Failure Mode Analysis (2013).
- White Paper: Operation and Maintenance of an Instrumentation System (currently in development).
- White Paper: Dam Safety Monitoring Training for Dam Operating Personnel (currently in development)

Workshops conducted in recent years include:

- Dam Surveillance and Monitoring (2006 USSD/FERC Workshop).
- Dam Surveillance and Monitoring (2007 USSD/FERC Workshop).
- State-of-the-Art Technologies for Monitoring Dams and Levees (Workshop at 2013 USSD Annual Meeting and Conference).
- State-of-the-Art Technologies for Monitoring Dams and Levees (Workshop at 2013 ICOLD Meeting).
- Providing Appropriate Instrumentation for Dams (Workshop in Fall 2015, Oakland CA)
- ICOLD Bulletins that the Committee participated in the development of include:
- Monitoring of Dams and Their Foundations – State-of-the-Art (ICOLD Bulletin 68, 1988).
- Improvement of Existing Dam Monitoring – Recommendations and Case Histories (ICOLD Bulletin 87, 1992).
- Automated Dam Monitoring Systems – Guidelines and Case Histories (ICOLD Bulletin 118, 2000).
- General Approach to Dam Surveillance (ICOLD Bulletin 138, 2009).
- Dam Surveillance Guide (ICOLD Bulletin 158, currently in development).

The Chairmen of the Committee since 2000 have been James Brown (U.S. Army Corps of Engineers), James Hummert (URS Corporation), Jay Stateler (U.S. Bureau of Reclamation), Chris Hill (Metropolitan Water District of Southern California), and Georgette Hlepas (U.S. Army Corps of Engineers).

CHAIR, AND VICE CHAIRS AND RELATED RESPONSIBILITIES

Chair: Georgette Hlepas

Vice Chair (Young Professionals): John Hynes

SUBCOMMITTEES

The Committee currently has formed the following Subcommittees to address specific issues:

- A. Subcommittee on Fully Grouted Piezometer Installations
- B. Subcommittee on Seismic Instrumentation of Dams
- C. Subcommittee on Training of On-Site Dam Operation Personnel
- D. Subcommittee on Determining and Using Threshold Values and Action Levels for Instrumentation
- E. Subcommittee for Planning a 2019 USSD Technical Workshop on the Topic: “Providing Appropriate Instrumentation for Dams – Implementing Properly Focused, Cost-Effective Monitoring Programs”

MEMBERSHIP AND CURRENT SUBCOMMITTEE INVOLVEMENT

Member Name	A	B	C	D	E
Ali Ebrahimi		X*			
Amanda Sutter			X		
Andrew Fisher				X	
Anthony Paschall					
Brad Long					
Brent Randall					X
Brett Cochran	X		X		
Bruce Rogers		X			
Chris Hill		X			X
Daniel Huang					
Dustin Mortensen	X				
Erwin Supranata					
Georgette Hlepas	X			X	
Gerald Robblee	X*				
Greg Dutson		X			X
Jay Stateler	X		X*	X	X
Jeff Barrett					

Member Name	A	B	C	D	E
Jim Hummert					
John Hynes	X			X	
John Paxton					
Josh Brown					
Kevin Zitzow				X	
Loic Gallison					
Manoshree Sundaram			X		
Matt Sullivan				X	
Matthew Alan Pruchnik			X		
Melih Demirkan	X			X	
Meghan Quinn		X			
P. Emeruwa Anyanwu			X	X	
Paul Booth	X			X	X
Pierre Choquet	X				X
Rick Anderson					
Rudy Saavedra	X*			X	X
Shaun Dustin				X	
Tim Newton	X			X	
Todd Roberts					
Travis Tutka					X
William Walker	X			X	X
Will Brown		X*		X*	X*
Collaborative Committee Associates					
Dina Hunt (Seismic Committee)		X			
Christina Winckler (Tailings Committee)					
X* - denotes subcommittee leadership					

At the present time, the Committee has an appropriate number of active Committee members, and has a good mix of members from: (1) government or private organizations that own and operate dams, (2) government organizations that regulate dam owners, (3) consulting engineers that provide engineering services to dam owners, and (4) suppliers that provide equipment used in the instrumented or visual monitoring of dams. The Committee is always looking to add new members to bring new ideas and fresh perspectives to Committee discussions, with a special interest regarding attracting new Young Professionals to the Committee. With this in mind, the following membership-related activities are conducted on an ongoing basis:

- A. The Committee views that the best way to attract new members is to be a vibrant Committee that always has a number of Subcommittees actively engaged in interesting and important projects.
- B. When people that are not Committee members attend Committee meetings, the Committee Chair follows up with the people to explore possible interest in joining the Committee. When the people are Young Professionals, the Vice-Chair for Young Professionals coordinates additional follow-up efforts, as are viewed to be appropriate.
- C. The Chair and Vice-Chair for Young Professionals periodically review the Committee membership, looking for gaps in the spectrum of organizations and disciplines that could and should have representation on the Committee. Where gaps are identified, a recruitment plan is developed and implemented.

GOALS AND OBJECTIVES

The Committee will work to develop and promote education and training activities under the four imperatives of the 2014-2017 Strategic Plan: Advocate, Educate, Collaborate, and Cultivate. Activities planned to be undertaken and completed by the Committee over the next three years include the following:

Advocate: Support initiatives in this area developed by the USSD Board.

Educate:

1. Complete a White Paper titled “Dam Safety Monitoring Training for Dam Operating Personnel”.
2. Complete a White Paper titled “Operation and Maintenance of an Instrumentation System”.
3. Develop a White Paper regarding Seismic Instrumentation of Dams.
4. Develop a White Paper regarding Fully Grouted Piezometer Installations.
5. Develop a White Paper on Determining and Using Threshold Values and Action Levels for Instrumentation.
6. Present a USSD Technical Workshop on the topic: “Providing Appropriate Instrumentation for Dams – Implementing Properly Focused, Cost-Effective Monitoring Programs”.

Collaborate:

1. Support completion by ICOLD of ICOLD Bulletin 158, Dam Surveillance Guide.
2. Work with members of the USSD Levees Committee to jointly prepare a White Paper regarding Monitoring Levees.

Cultivate:

1. Conduct Committee conference calls on a quarterly schedule.
2. Improve the interaction between the Committee and USSD Conference Planning Committees relative to having the Committee coordinate and perform technical reviews of all papers to be presented at USSD conferences that relate to instrumentation and monitoring.

The planned actions and timeframes associated with the current work of the Committee are summarized in the table below.

Imperative	Goal and Objective	Action	Measurement
Advocate	Support initiatives in this area developed by the USSD Board	Respond promptly to initiatives in this area developed by the USSD Board	Prepare a response to initiatives received within 30 days
Educate	Complete a White Paper titled "Operation and Maintenance of an Instrumentation System"	PRC currently reviewing the White Paper. Respond to comments from PRC and complete White Paper	PRC work completed and White Paper revisions completed such that White Paper is published by 5/1/19
	Develop a White Paper regarding Seismic Instrumentation of Dams	Authors draft White Paper. White paper reviewed by Committee and PRC, and then published	White Paper draft completed by April 2020. White Paper reviews (Committee and PRC) and revisions completed such that White Paper is published by 5/1/21
	Develop a White Paper regarding Fully Grouted Piezometer Installations	Information collection currently underway. Authors draft White Paper. White paper reviewed by Committee and PRC, and then published	White Paper draft completed by December 2018. White Paper reviews (Committee and PRC) and revisions completed such that White Paper is published by 5/1/19
	Develop a half-day workshop on threshold values and action levels for the 2019 annual conference	Develop agenda and execute workshop	Successful workshop at annual conference in 2019

Imperative	Goal and Objective	Action	Measurement
	Present a USSD Technical Workshop on the topic: "Providing Appropriate Instrumentation for Dams"	Present a USSD Technical Workshop on the topic: "What is Appropriate Instrumentation for a Dam?"	Workshop scheduled for Fall 2019
Collaborate	Collaborate with Tailings Committee for a Fall 2019 workshop, "Providing Appropriate Instrumentation for Dams"	Collaborate to develop a joint agenda and execution of the workshop	Successful joint effort and workshop
	Work with ASDSO with respect to developing a publication regarding "Training of On-Site Dam Operation Personnel"	Comments from ASDSO have been incorporated in draft White Paper	White Paper draft completed by December 2018. White Paper reviews (Committee and PRC) and revisions completed such that White Paper is published by 5/1/19
Cultivate	Conduct Committee conference calls on a quarterly schedule	Conduct Committee conference calls on a quarterly schedule	Conduct Committee conference calls on a quarterly schedule
	Improve the interaction between the Committee and USSD Conference Planning Committees relative to having the Committee coordinate and perform technical reviews of all papers to be presented at USSD conferences that relate to instrumentation and monitoring	Committee reviews of papers for the 2015 Annual USSD Conference were carried out. Perform Committee reviews of papers for all future USSD Annual Conferences	Perform Committee reviews of papers for all future USSD Annual Conferences
	Increase Committee membership to include involvement of young professionals	The Vice Chair - Young Professionals has been created for the Committee, and filled. This Vice Chair actively seeks out other Young Professionals and encourages them to join the Committee	Add at least one new Young Professional to the Committee each year