

## BOARD REPORT

Committee Name: Earthquakes

Submitted by: Lelio Mejia (Chair), Jack Montgomery (Vice Chair), Chris Krage (YP Vice Chair)

Report Date: March 24, 2022

### Committee Mission/Purpose

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The Earthquakes Committee continues to actively work on its objectives of a) promoting the seismic safety of dams and the development of knowledge on seismic analysis and design of dams, and b) supporting the ICOLD Committee on Seismic Aspects of Dam Design. The Committee collects information on earthquake instrumentation, recorded data and performance of dams during earthquakes; evaluates and develops guides for modern methods of design of dams and reservoirs to withstand earthquakes and identifies needs for new knowledge and research on designing and analyzing dams. It keeps the general membership informed of the committee's work through timely publication of reports and white papers, articles in the Newsletter, and planning and implementation of periodic workshops. The Committee also collaborates with and/or assists other committees in developing and promoting education and training activities.

### 2021 Goals/Accomplishments

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The Committee met remotely twice during 2021. The first meeting was held on June 4 and the second on December 10. The committee added 11 new members in 2021 and at year's end its roster stood at 64. Remarkably, the committee's average growth rate has exceeded 20% for the past 4 years. The membership includes representatives of private, government, and academic entities from the United States and Canada. The Committee worked on several initiatives intended to develop and disseminate knowledge on dam seismic design.

A key accomplishment was to advance the review of the draft USSD guidelines for "Analysis of seismic deformations of embankment dams" by the Publication Review Committee (PRC). This effort was led by a subcommittee consisting of Sam Abbaszadeh, Richard Armstrong, Michael Beaty, Jack Montgomery and Lelio Mejia (Chairperson). The PRC review is still ongoing and the subcommittee is working on addressing the PRC's comments.

Other key accomplishments included: 1) Hosting a workshop during the 2021 USSD Annual Conference, titled "Earthquake Shaking and Ground Failure Hazards for Dams, including Automated Real-time Inspection Prioritization". This effort was led by former YP Vice Chair Zara Plasencia. 2) Participating in the planning of the 2022 conference, an effort which was led by YP Vice Chair Chris Krage with help from several committee members who assisted with reviewing abstracts.

Other white paper initiatives currently in progress include: 1) updating the guidelines for the selection of earthquake ground motion parameters of dams (which were last updated by the Committee in 1999), and 2) developing guidelines for the seismic design and evaluation of structures appurtenant to dams.

### 2022 Goals

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The Committee will aim to complete the PRC review of the guidelines on analysis of seismic deformations of embankment dams and hopes to have the guidelines published by USSD by the second quarter of 2022. It will also continue to work on the two standing white paper initiatives mentioned above and strive to complete one of those in 2022 and the other in 2023.

The Committee will be hosting sessions on earthquake aspects of dams during the 2022 USSD Annual Conference. In addition, we will be holding a meeting during the USSD Annual Conference, and a second meeting later in the year.

Planning for a benchmark workshop on numerical analysis of seismic deformations of embankment dams is in the early stages. The idea will be discussed and refined during the upcoming meeting of the Committee, and may involve collaboration with the ICOLD committees on numerical analysis and seismic design. In addition, the Committee will continue to support the ICOLD seismic committee and plan to participate in the 2022 ICOLD Congress in Marseilles, France.

### **What do you need to accomplish your 2022 goals?**

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The Committee will need active participation from its membership and support from the USSD Board and Executive Office to achieve its 2022 goals. Support will be needed for the timely resolution of PRC comments and publication of the seismic deformation analysis guidelines, and for coordination of efforts to plan and implement future workshops, in particular a possible joint workshop with ICOLD Committees A and B.