United States Society on Dams (USSD)

Thursday, May 20, 2021

9:00 am – 2:00 pm (MDT)

8:00 am – 1:00 pm (PDT)

11:00 am – 4:00 pm (EDT)

Earthquake Shaking at Dams: Tools for Prediction, Monitoring, Assessment, Prioritization and Emergency Response

This will be an informational and collaborative workshop on how seismic risk is mitigated at dams through analytical prediction tools, continuous monitoring, and prioritized response. Major topics include the USGS Probabilistic Seismic Hazard Mapping Program, site specific considerations for seismic hazard assessments at dams, and ground motion intensity measures for performance and monitoring. The closing session will identify gaps in our current capabilities of predicting and preparing for seismic events at dams in order to establish a path forward in further reducing seismic risk. The target audience is regulators, owners/operators, and consultants.

Workshop Organizing Committee:

Zara Plasencia (Zamini), Justin Smith (FERC), Mark Meremonte (USBR), Mark Schultz (USACE)

Agenda

1. **Welcome and Introductions [9:00 am MDT]**
   [Lelio Mejia, Zara Plasencia, and Justin Smith]
   a. Welcome (Lelio Mejia, Earthquakes Committee Chair)
   b. Introduction (Zara Plasencia, Earthquakes Committee YP Vice Chair)
   c. Workshop Expectations (Justin Smith, FERC)

2. **Understanding the 2018 USGS Probabilistic Seismic Hazard Assessment (PSHA) [9:15 am MDT]**
   [Mark Petersen (USGS), Nico Luco (USGS), and Brett Heppermann (USACE)]
   a. Overview and 2018 Update to USGS Probabilistic Seismic Hazard Assessment
   b. Risk-targeted and deterministic uses of the USGS National Seismic Hazard Model
   c. Beyond USGS PSHA: Site Specific SHA for Dams

BREAK [10:30 – 10:35 am MDT]

3. **Earthquake Notification Systems [10:35 am MDT]**
   [Mark Meremonte, USBR]
   a. Tools, considerations, and experiences
   b. Protocols for inspection/response

BREAK [11:10 – 11:15 am MDT]

4. **Ground motion intensity measures** [**11:15 am MDT]**
   [Richard Armstrong, CSUS]
   a. Ground motion intensity measures and dam damage
   b. Efficiency of ground motion intensity measures and practical applications

BREAK [11:45 – 12:15 pm MDT]

5. **Intensity measures for rapid post-earthquake response [12:15 pm MDT]**
   [Mark Schultz, USACE]
   a. Case histories and failure modes
   b. Simplified models for failure mode estimates
   c. Intensity measures to improve post-earthquake performance estimates

BREAK [1:00 – 1:05 pm MDT]

6. **Structural Monitoring and Data Management [1:05 pm MDT]**
   [Mark Meremonte (USBR) and Jamie Steidl (USGS)]
   a. Structural monitoring, guidelines, practices, realities, and engineering collaboration
   b. Data management (SIS, IRIS-DMC) importance
   c. Real-time monitoring, data processing and sharing

BREAK [1:30 — 1:35 pm MDT]

7. **Moving Forward – Guided Group Discussion [1:35-1:55 pm MDT]**
   [Justin Smith, FERC]

8. **Closing** [**1:55 – 2:00 pm MDT]**
   [Zara Plasencia, Zamini]