## Sunday, April 19

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:00 pm - 6:00 p.m.</td>
<td>Registration Desk Open</td>
<td>Hyatt Lobby</td>
</tr>
</tbody>
</table>

## Monday, April 20

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 am - 7:00 pm</td>
<td>Registration Desk Open</td>
<td>Centennial Foyer</td>
</tr>
</tbody>
</table>
| 8:30 am - 10:30 am | Conference Opening Session: Legacy Lecture Series  
                      Legacy of LeRoy Francis Harza — Dean of American Hydroelectric Engineers, James Lindell, Stantec  
                      Thoughts from the Johnny Appleseed of Dam Engineering, Kenneth Hansen, Consultant | Centennial F-H |
| 10:30 am - 11:00 am | Break                                                               | Centennial Foyer |
| 11:00 am - 12:00 noon | Conference Opening Session: Legacy Lecture Series, continued  
                        Audience Q&A , facilitated by Michael Rogers, Stantec  
                        Final Remarks, James Lindell and Kenneth Hansen  
                        Closing Statements, Larry Nuss, Nuss Engineering, LLC | Centennial F-H |

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:30 pm - 3:30 pm</td>
<td>Committee Meetings Session 1</td>
<td>Various</td>
</tr>
<tr>
<td>3:30 pm - 4:00 pm</td>
<td>Break</td>
<td>Centennial Foyer</td>
</tr>
<tr>
<td>4:00 pm - 6:00 pm</td>
<td>Committee Meetings Session 2</td>
<td>Various</td>
</tr>
<tr>
<td>6:00 pm - 7:30 pm</td>
<td>Welcome Reception</td>
<td>Centennial Ballroom</td>
</tr>
<tr>
<td>7:30 pm - 9:00 pm</td>
<td>Tribute to Kim DeRubertis Reception</td>
<td>Mineral Foyer</td>
</tr>
</tbody>
</table>

## Tuesday, April 21

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 am - 6:00 pm</td>
<td>Registration Desk Open</td>
<td>Centennial Foyer</td>
</tr>
<tr>
<td>7:15 am - 8:15 am</td>
<td>USSD Town Hall: Ask the Board</td>
<td>Centennial F</td>
</tr>
<tr>
<td>7:15 am - 8:15 am</td>
<td>Continental Breakfast in Exhibit Hall</td>
<td>Centennial Ballroom</td>
</tr>
<tr>
<td>8:30 am - 10:15 am</td>
<td>Plenary Session 1</td>
<td>Capitol Ballroom</td>
</tr>
<tr>
<td>10:15 am - 10:45 am</td>
<td>Break in Exhibit Hall</td>
<td>Centennial Ballroom</td>
</tr>
</tbody>
</table>
| 10:45 am - 12:15 pm | Concurrent Technical Sessions Track 1  
                        1A Concrete Dams I  
                        1B Embankment Dams I  
                        1C Hydraulics & Hydrology I  
                        1D Tailings Dams I  
                        1E Scholarship Finalist Presentations  
                        Interactive Presentations I: Earthquakes and Construction & Rehabilitation | Centennial F  
                        Centennial G  
                        Centennial H  
                        Mineral DE  
                        Mineral FG  
                        Mineral ABC |
| 12:15 pm - 1:30 pm | Lunch in Exhibit Hall                                               | Various      |
| 1:30 pm - 3:30 pm | Concurrent Technical Sessions Track 2  
                        2A Concrete Dams II  
                        2B Embankment Dams II  
                        2C Sustain or Decommission: The Future for a Dam  
                        2D Monitoring  
                        2E Dam Safety I  
                        Interactive Presentations II: Hydraulics & Hydrology | Centennial F  
                        Centennial G  
                        Centennial H  
                        Mineral DE  
                        Mineral FG  
                        Mineral ABC |
| 3:30 pm - 4:00 pm | Break in Exhibit Hall                                               | Centennial Ballroom |
| 4:00 pm - 6:00 pm | Committee Meetings Session 3                                         | Various      |
| 6:00 pm - 7:30 pm | Exhibitor Reception                                                  | Centennial Ballroom |
| 7:30 pm - 9:30 pm | Young Professional/First-Time Attendee Networking Social           | Live @ Jack’s, Denver Pavilions, 500 16th St. |
### 2020 Conference and Exhibition

#### Wednesday, April 22

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>6:30 am</td>
<td>5K FUNds Run/Walk (buses depart Hyatt at 6 am)</td>
<td>City Park</td>
</tr>
<tr>
<td>7:00 am - 5:00 pm</td>
<td>Registration Desk Open</td>
<td>Centennial Foyer</td>
</tr>
<tr>
<td>7:15 am - 8:15 am</td>
<td>Continental Breakfast in Exhibit Hall</td>
<td>Centennial Ballroom</td>
</tr>
<tr>
<td>8:30 am - 10:15 am</td>
<td>Plenary Session 2</td>
<td>Capitol Ballroom</td>
</tr>
<tr>
<td>10:15 am - 10:45 am</td>
<td>Break in Exhibit Hall</td>
<td>Centennial Ballroom</td>
</tr>
<tr>
<td>10:45 am - 12:15 pm</td>
<td>Concurrent Technical Sessions Track 3</td>
<td>Centennial F</td>
</tr>
<tr>
<td></td>
<td>3A Concrete Dams III</td>
<td>Centennial G</td>
</tr>
<tr>
<td></td>
<td>3B Construction &amp; Rehabilitation I</td>
<td>Centennial H</td>
</tr>
<tr>
<td></td>
<td>3C Emergency Preparedness</td>
<td>Mineral DE</td>
</tr>
<tr>
<td></td>
<td>3D Tailings Dams II</td>
<td>Mineral FG</td>
</tr>
<tr>
<td></td>
<td>3E Dam Safety II</td>
<td>Centennial Ballroom</td>
</tr>
<tr>
<td></td>
<td>Interactive Presentations III: Embankments, Foundations and Levees</td>
<td>Mineral ABC</td>
</tr>
<tr>
<td>12:15 pm - 1:30 pm</td>
<td>Lunch in Exhibit Hall</td>
<td>Centennial Ballroom</td>
</tr>
<tr>
<td></td>
<td>YP Mentoring Luncheon (pre-registration required)</td>
<td>Capitol Ballroom</td>
</tr>
<tr>
<td>1:30 pm - 3:30 pm</td>
<td>Concurrent Technical Sessions Track 4</td>
<td>Centennial F</td>
</tr>
<tr>
<td></td>
<td>4A Earthquakes (Embankments)</td>
<td>Centennial G</td>
</tr>
<tr>
<td></td>
<td>4B Construction &amp; Rehabilitation II</td>
<td>Centennial H</td>
</tr>
<tr>
<td></td>
<td>4C Hydraulics &amp; Hydrology II</td>
<td>Mineral DE</td>
</tr>
<tr>
<td></td>
<td>4D Levees</td>
<td>Mineral FG</td>
</tr>
<tr>
<td></td>
<td>4E Dam Safety III</td>
<td>Centennial Ballroom</td>
</tr>
<tr>
<td></td>
<td>Interactive Presentations IV: Concrete Dams, Safety and Environment &amp; Sustainability</td>
<td>Mineral ABC</td>
</tr>
<tr>
<td>3:30 pm - 4:00 pm</td>
<td>Break in Exhibit Hall</td>
<td>Centennial Ballroom</td>
</tr>
<tr>
<td>4:00 pm - 6:00 pm</td>
<td>Concurrent Technical Sessions Track 5</td>
<td>Centennial F</td>
</tr>
<tr>
<td></td>
<td>5A Earthquakes (Concrete)</td>
<td>Centennial G</td>
</tr>
<tr>
<td></td>
<td>5B Construction &amp; Rehabilitation III</td>
<td>Centennial H</td>
</tr>
<tr>
<td></td>
<td>5C Embankment Dams III</td>
<td>Mineral DE</td>
</tr>
<tr>
<td></td>
<td>5D Public Safety</td>
<td>Mineral FG</td>
</tr>
<tr>
<td></td>
<td>5E Foundations</td>
<td>Mineral ABC</td>
</tr>
<tr>
<td>5:30 pm - 6:30 pm</td>
<td>USACE TownHall Meeting</td>
<td>Mineral ABC</td>
</tr>
<tr>
<td>6:30 pm - 9:30 pm</td>
<td>Wrap Party (ticketed)</td>
<td>History Colorado Center</td>
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#### Thursday, April 23

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 am - 2:00 pm</td>
<td>Workshop Registration Desk Open</td>
<td>Mineral Foyer</td>
</tr>
<tr>
<td>8:00 am - 5:30 pm</td>
<td>Concurrent Workshops</td>
<td>Mineral A</td>
</tr>
<tr>
<td></td>
<td>1. Communication during the “Golden Hour” — Risk and Crisis Communication Strategies for Dam Safety</td>
<td>Mineral BC</td>
</tr>
<tr>
<td>8:00 am - 5:00 pm</td>
<td></td>
<td>Mineral DE</td>
</tr>
<tr>
<td>8:30 am - 4:30 pm</td>
<td>2. Probabilistic Flood Hazard Analysis</td>
<td>Granite</td>
</tr>
<tr>
<td>8:15 am - 4:30 pm</td>
<td>3. Earthquake Shaking and Ground Failure Hazards for Dams, including Automated Real-time Inspection Prioritization</td>
<td>Mineral FG</td>
</tr>
<tr>
<td>8:00 am - 12 noon</td>
<td>4. Tailings Dam Safety Management and Engineer of Record</td>
<td>Mineral FG</td>
</tr>
<tr>
<td>1:00 pm - 5:00 pm</td>
<td>5. Evaluation Principles for the Monitoring of Dams and Their Foundations</td>
<td>Mineral FG</td>
</tr>
<tr>
<td>11:30 - 1:00 pm</td>
<td>Lunch (times vary for each workshop)</td>
<td>Capitol Ballroom 1-4</td>
</tr>
</tbody>
</table>

#### Friday, April 24

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 am - 12 noon</td>
<td>Field Tours</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Note: morning and afternoon field tours are identical</td>
<td></td>
</tr>
<tr>
<td>8:00 am - 12 noon</td>
<td>Bureau of Reclamation Laboratories Field Tour (extra charge)</td>
<td></td>
</tr>
<tr>
<td>1:00 pm - 5:00 pm</td>
<td>Bureau of Reclamation Laboratories Field Tour (extra charge)</td>
<td></td>
</tr>
</tbody>
</table>
Determination of a Concrete Dam’s Dynamic Properties from Ambient Responses at Gross Reservoir Expansion Project
Michael F. Rogers, Stantec; Jose Felipe Garcia, Stantec; Jeff Martin, Denver Water; Greg Glunz, AECOM; Greg Zamensky, Black & Veatch

Modern Stress and Stability Analysis of a Powell Lake Dam
Girirajbir Sood, Hatch Ltd.; Dan Curtis, Hatch Ltd.; Bashar Sudah, Brookfield Renewable

Transforming a Gravity Dam into a Thick Arch Dam for the Gross Reservoir Expansion Project
Ronald Aled Hughes, Stantec; Glenn S. Tarbox, Stantec; Michael F. Rogers, Stantec; Mohammadreza Mostafa, Stantec

C-43 Reservoir-Geotechnical Engineering Design Considerations
Kevin Aubry, Terracon Consultants, Inc.; Joseph Albers, South Florida Water Management District; Jamie Velez, Terracon Consultants, Inc.; Partha Ghosh, GCME, Inc.

Application of Numerical Analyses in Design of Earth and Rockfill Embankments
Masood Kafash, AECOM; Pouya Allahverdizadeh Sheykhlou, AECOM; Richard Davidson, AECOM; John France, AECOM; Jennifer Williams, AECOM

Final Design of Eagle Canyon Dam and Debris Basin
Samalingam Balachandran, GENTERRA Consultants, Inc.; Joseph Kulikowski, GENTERRA Consultants, Inc.; Shuyu Liu, GENTERRA Consultants, Inc.; Robert Cullen, Riverside County Flood Control & Water Conservation District

Characterization of Soil-Cement for Use in an Embankment Dam Seismic Stability Shear Key
Robert Rinehart, USBR; Gergo Arany, USBR; Richard Bearce, USBR; Evan Lindenbach, USBR

More Flow, More Dissipation: Using a Labyrinth Weir with a Baffie Chute Spillway at Zorinsky Basin No. 2
Adrian Strain, HDR; John Engel, HDR

2D Dam Breach Modeling with a Subterranean River Reach
Ben Cary, Kleinschmidt Group; Dan Olmsed, Eugene Water and Electric Board; Chris Goodell, Kleinschmidt Group

Integrating Hydraulic Design Methods for the Analyses of Large Dams
Nicholas Kautsunis, USACE; Brian Hall, USACE; Dana Moses, USACE

A Novel Stilling Basin for a Steep, Stepped Spillway: the Gross Reservoir Expansion Project
Christopher Thornton, Colorado State University; Robert Ettema, Colorado State University; Michael Zusi, AECOM; Frank Lan, AECOM; Casey Dick, Denver Water

Rockfill Dam Construction Challenges at the Neelum Jhelum Hydroelectric Project
Joseph Kovach, Stantec; Malik Salman Ahsan, National Engineering Services Pakistan (Pvt) Limited; Haroon Rasheed, National Engineering Services Pakistan (Pvt) Limited

Condition Assessments in Managing a Diverse Portfolio of Aging Dams
Brian McCormick, Colorado Springs Utilities; Wonnie Kim, Stantec; Dan Montgomery, Stantec

System Safety Approach for Tailings Dams Management
Sebnem Duzgun, Colorado School of Mines

Stability and Safety Reviews for Tailings Dams – A Consultant’s Approach
Robert Snow, D’Appolonia; Mike Ward, D’Appolonia; Alex Kassick, D’Appolonia; Robert Shuska, D’Appolonia

Overview on the Level of Detail and Methodologies for Tailings Dam Breach Study
Mike Henderson, BGC Engineering; Shielan Liu, BGC Engineering

Closure of a Tailings Dam in the USA - A Review of State Regulations
Phillip Crouse, Stantec; Mark Abshire, Engineering Analytics, Inc.; Robert Snow, D’Appolonia

Construction
Release Relief - Fixing 100 Year Old Dam Valves
Brian Hamrick, Wood

Material Ageing – Key Criteria for Dam Waterproofing Systems
Stefan Lemke, Renesco Inc

Suggestions for Selecting Methodology and Equipment for Delivery And Placing of Concrete on Concrete Dams
Goran Vujasinovic, CTS International

Aging Concrete Dams - Causes of Deterioration and Methods of Rehabilitation
William Black, Meadow & Hunt

Guajataca Spillway Failure
Chad Gillan, USACE

Lessons Learned from High Mountain Dam Construction Projects

Earthquakes
Dynamic Analyses of Liquefaction at Palinurus Road During the Canterbury Earthquake Sequence
Patrick C. Bassal, University of California, Davis; Ross W. Boulanger, University of California, Davis; Brady R. Cox, University of Texas; Kathleen M. Yost, Virginia Polytechnic Institute and State University

Validating Nonlinear Seismic Analysis of Dam-Foundation-Reservoir System with Foundation Cyclic Symmetry
Ali Rasekh, Klohn Crippen Berger Ltd.
Tuesday, April 21 — 1:30 pm -3:30 pm
CONCURRENT SESSIONS — TRACK 2

2A: Concrete Dams II
*Room: Centennial F*
Moderators: Mohammad Hariri Ardebili, University of Colorado; and Stewart Vaghti, Gannett Fleming

Historical Construction Documentation Used to Evaluate an Internal Erosion PFM at Watauga Dam
Benjamin Webster, Stantec
Alan Rauch, Stantec
Jim Bryant, TVA
Caleb Douglas, TVA

Cracked Embankment Erosion Testing
Peter Irey, USBR
Ted Howard, USBR

Modeling of Internal Erosion in Earthen Embankment Dams with Non-Homogeneous Soil Parameters
Ali Preston, Geosyntec Consultants
Jai Panthal, Geosyntec Consultants
Lucas DeMelo, Geosyntec Consultants
Glenn Rix, Geosyntec Consultants

Assessment of Internal Erosion of Embankment Dams – An Owner’s Perspective
Li Yan, BC Hydro
Maxim Li, BC Hydro
Charissa Anderlini, BC Hydro

Internal Erosion: Dam Safety, State-of-Practice, and Advancing the State-of-Art
Jonathan Fannin, University of British Columbia
Maxim Li, BC Hydro

Emergency Repairs to a 150+ Year-Old Dam in a Sensitive Environment
Grady Hillhouse, Freese and Nichols, Inc.
Doug Bynum, Texas State University

Predicted Sediment Transport for Operations at Nolichucky Dam
Felipo Bressan, WEST Consultants
Martin Teal, WEST Consultants
Curtis Jewdy, TVA

New Guidelines and Processes for Development of Additional Water storage in the U.S.
Kayla Ramney, HDR
Blaine Dwyer, HDR

A New Sediment Modeling, Monitoring and Forecasting Framework for Dam Removal Based on Lessons Learned from Elwha River Restoration Experience
Jennifer Bountray, USBR
Timothy Randle, USBR
Chris Bromley, Scottish Environment Protection Agency
Colin Thorne, Nottingham University

Mill Pond Dam Removal and Habitat Restoration – The Unbreakable Stream
Lloyd Dixon, Seattle City Light

Coming Full Circle: Anchoring Down and Lifting Off at Lock #27
Brian Barkauskas, Nicholson Construction
Tony Martinez, Nicholson Construction

Fully Grouted and Vibrating Wire Piezometer Installations in Artesian and Karst Conditions at Mosul Dam
Georgette Hilepas, USACE
Victorino Panigagua, USACE
Massimo Malavolta, Trevi

Innovations in Dam Instrumentation Monitoring to Reduce Risk
Loring Crowley, Schnabel Engineering
Zachary Ostrum, Schnabel Engineering

Todd Roberts, sensometrics
Alex Rutledge III, Schnabel Engineering
Mark Landis, Schnabel Engineering

Practical Aspects of the use of Synthetic Aperture Radar for Dam Safety Monitoring Based on Three Years of Ground Truth
William Empson, USACE
David Cohen, Neva Ridge Technologies
Sarah Gammon, National Geospatial-Intelligence Agency
Baron Worsham, USACE

Swan Yarborough, Neva Ridge Technologies

Non-Destructive Evaluation (NDE) for Condition Assessment of Concrete Dams
Larry Olson, Olson Engineering, Inc.
Lyndsay Hazelwood, Olson Engineering, Inc.

Development of a Hydrologic Database to Inform Future Spillway Designs and Risk Analyses
Kevn Ruswick, Schnabel
Elizabeth Isenstein, Schnabel

Are Storms Changing and What Does This Mean for PMP?
Bill Kappel, Applied Weather Associates
Doug Hultstrand, Applied Weather Associates
Geoff Muhlestein, Applied Weather Associates
Jake Rodel, Applied Weather Associates
Kristi Steinshilber, Applied Weather Associates

Evaluating Dam Safety Incidents in a Risk Assessment Framework
Edwin Friend, USACE
Kevin Mininger, RIH Consultants
John Hunyadi, Colorado Division of Water Resources
Ryan Schoolmeesters, Eagle Creek Renewable Energy
Holly Nichols, California DWR
Erin Gleason, Denver Water

Managing and Recovering from a Flood Event – Moccasin Dam Flood Event
Adam Mazurkiewicz, San Francisco PUC
Chris Graham, San Francisco PUC

A Risk Priority Model for Dam Potential Failure Mode Ranking and Prioritization
Ali Reza Firoozfar, HDR
Hamid Reza Firoozfar, University of Tehran
Keith Moen, HDR

FEMA Dam Safety Technical Assistance Program
Molly Finster, Argonne National Laboratory
Preston Wilson, FEMA
Jose Lara, California OES
Lesley Edgemon, Argonne National Laboratory
Kyle Pfeiffer, Argonne National Laboratory

Introducing Outcomes from ICOLD 15th International Benchmark Workshop on Numerical Analysis of Dams - Seismic Analysis of Pine Flat Concrete Dam
Jery Salomao, USBR
Christopher Wood, USBR
Mohammad Arifin Hariri Ardebili, University of Colorado at Boulder
Richard Malm, KTH Royal Institute of Technology
Giorgia Faggiani, Ricerca sul Sistema Energetico – RSE S.p.A.

Numerical Modeling of Walters Dam oo Address Aar-Related Potential Failure Modes
Michael Esposito, HDR
Farzad Abedzadeh, HDR
Ed Luttrell, HDR
Brian Reinicker, HDR
Brad Keaton, Duke Energy

A Half Century of Arch Dams Design with Trial-Load Method
Glenn Tarbox, Stantec
Larry Nuss, Nuss Engineering, LLC
Jery Salomao, USBR

Practical implementation of the Fluid Domain for Dam-Water-Foundation Interaction in LS-DYNA
Osmar Femen, BC Hydro
Brent Bergman, BC Hydro

Stability Improvement of Laozus Arch Dam: Opening of the Dam-Foundation Interface of a Concrete Arch Dam in a Wide Valley
Emmanuel Robbe, EDF

Interactive Presentations II

Hydraulics & Hydrology

Effects of Transverse Slopes of Steps on Flow over Stepped Spillways
Ahang Ali, University of Suleimani
Moses Karakousian, University of Nevada, Las Vegas
Omed Younis III, University of Suleimani

Two-Dimensional Modeling of the Ka Loko Dam Failure Flood
Mustafa Altnakar, Argonne National Laboratory
Marcus McGrath, NCCH
Vijay Ramalingam, NCCH
James Denby, Jr., FEMA

Levee Certification: How Advanced Engineering Techniques Can Save $$$
Brad Bettig, Wood
Chris Ide, Wood
Thuy Patton, Colorado Water Conservation Board

CFD Modeling for Spillway Assessments
Benjamin Israel Devadason, Gannett Fleming
Paul Schweiger, Gannett Fleming

Missouri River Levee 2D HEC-RAS Breach Inundation Modeling
Dan Jones, USACE
Ben Lorenzen, USACE

After the Flood – Modeling Levee Breach Affected Areas in the Missouri River Valley
Andrew McCoy, HDR
Rusty Jones, HDR
Dave Claman, Iowa DOT
Bill Kaufman, Iowa DOT

VBA-Based Tool Keeps Dam Operators Ahead of the Curve
Jesse Potrowski, Mead & Hunt
Shawn Puzen, Mead & Hunt
Nick Hathaway, Mead & Hunt
Jen Schuetz, Mead & Hunt

Development of a Hydrologic Database to Inform Future Spillway Designs and Risk Analyses
Kevn Ruswick, Schnabel
Elizabeth Isenstein, Schnabel

Calibration through Transposition: Case Study: Cedar Rapids Iowa
Nicholas Thomas, HDR
Andy McCoy, HDR

Successful Hydrologic Dam Safety Modeling for the Largest Corps Reservoir
Katherine Werner, USACE

Mineral ABC

Levee Certification: How Advanced Engineering Techniques Can Save $$$
Brad Bettig, Wood

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Calibration through Transposition: Case Study: Cedar Rapids Iowa
Nicholas Thomas, HDR
Andy McCoy, HDR

Successful Hydrologic Dam Safety Modeling for the Largest Corps Reservoir
Katherine Werner, USACE
Wednesday, April 22 — 1:30 pm - 3:30 pm
CONCURRENT SESSIONS — TRACK 4

4A: Earthquakes (Embankments)
Room: Centennial F
Moderators: Michael Beatty, Beatty Engineering LLC; and Zara Plascencia, Zamini, Inc.

4B: Construction & Rehabilitation II
Room: Centennial G
Moderators: Gregory Hammer, USACE; and Frank Immel, Global Diving

4C: Hydraulics & Hydrology II
Room: Centennial H
Moderators: Jennifer Gagnon, HDR; and Keil Neff, Stantec

4D: Levees
Room: Mineral DE
Moderators: Meredith Beswick, Kleinfelder, Inc.; and Bruce Rogers, USACE

4E: Dam Safety III
Room: Mineral FG
Moderators: Elizabeth Landowski, Gannett Fleming; and Miguel Rocha, USBR

3-D Analyses of Lenihan Dam for the Loma Prieta Earthquake
Ethon Dawson, AECOM
Lelio Mejia, Geosyntec Consultants

Return Periods of Ground Motions and Seismic Displacement
Justin Smith, FERC
Edgar Salire, FERC
Chris Wang, FERC

Seismic Deformations of a Levee Over Soft Clay of Varying Sensitivity
Tyle Outhier, University of California, Davis
Ross Boulanger, University of California, Davis

Seismo-VLAB: A Parallel, Object-Oriented Virtual Lab for Mesoscale Seismic Wave Propagation Problems
Danilo Kusanovic, Caltech
Einz Asmaeliazadeh Seylabi, Caltech
Albert Kotkje, Pacific Gas and Electric
Domiinki Asimaki, Caltech

Scale Effects of Newmark Displacements Due to Embankment Height
Robert Jaeger, California DWR
Ian Maki, California DWR
George Hu, California DWR

Conklingville Dam: A Multi-Dimensional Exploration
David Railsback, Schnabel Engineering
Michael Taylor, Schnabel Engineering
Keith Toombs, Schnabel Engineering
Frederic Snider, Schnabel Engineering

A Novel Approach for Developing Regional Probable Maximum Precipitation Guidelines
Katie Ward, MetStat, Inc
Victoria Bohls, MetStat, Inc.
Tye Parzybok, MetStat, Inc.
Alex Schott, MetStat, Inc.
Robert McLean, BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development
Angela Duren, USACE

Discharge Frequency for John Martin Dam Using Systematic, Historic, and Paleoflood Data
Derek King, USACE
Meghan Wygonik Kinley, USACE
Justin Pearce, USACE
Michael Thompson, USACE

British Columbia Extreme Flood Project
Robert McLean, BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development
Angela Duren, USACE
Zoran Micovic, BC Hydro Corp.
Victoria Sankovich Bahls, MetStat Inc.
Mel Schaber, MSG Engineering Consultants

Mosul Dam Emergency Stabilization Three Year Final Project Update
William Emerson, USACE
Wade Anderson, USACE
Georgette Hiepas, USACE
David Sawitzki, AECOM
Juan Vargas, AECOM
Carlo Crippa, Trevi
Pierlugi Miconi, Trevi

Dam Safety War Stories
William Emerson, USACE

Geologic Factors in the Siting and Conceptual Layout of the Aggregate Quarry at the Gross Reservoir Expansion Project
Dan Meier, AECOM
Daug Yadon, AECOM
Phil Sirles, Collier Geophysics
Paulo Virreira, Denver Water
Felipe Garcia, Stantec

Exploring Reservoir Operations: Development and Use of Induced Surcharge Envelope Curves
Kevin Fagot, WEST Consultants

A Phased Approach to Understanding Your Spillways
Kenwarjit Dosanjh, HDR
David Sarkisian, California DWR

US Fish and Wildlife Service and US Army Collaboration to Determine the Inflow Design Flood for the Rocky Mountain Arsenal Dams
Amanda Hess, Gannett Fleming
Brad Jarossi, U.S. Fish & Wildlife
Dave Hibs, US. Fish & Wildlife
Yan Xian, Gannett Fleming

Consequence Categorization for Dam Safety Semi-Quantitative Risk Assessments
Gregg Scott, Scott Consulting, LLC
William Fiedler, HDR

Risk-Based Approach and 3D Modelling Clarify Artesian Pressure Risk – An Example from a FERC RIDM Pilot Project
Robert Cannon, Schnabel Engineering
Gary Rogers, Schnabel Engineering
Frederic Snider, Schnabel Engineering
Adam Monroe, Consumers Energy
Michael Thelen, Consumers Energy
Marianne Walter, Consumers Energy

Expert Elicitations for Risk Analysis and How to Improve Them
Gregory Baecher, University of Maryland College Park
Robert Patev, USACE

An Enhanced Approach to SQRA Risk Matrices
David Bowles, RAC Engineers and Economists, LLC and Utah State University
Sanjay Chauhan, RAC Engineers and Economists, LLC

Interactive Presentations IV

Mineral ABC

Concrete Dams
Concrete Direct Shear Testing: A Comparison of Testing Procedures
Evan Lindenbach, USBR
Richard Bearce, USBR
Westin Joy, USBR

A Practical Implementation of the Performance Based Evaluation of Post-Tensioned Anchorage in Concrete Dams
Andrew Pharm, Harvey Mudd College
Dana Shang-Guan, Harvey Mudd College

Concrete Safety
Multi Hazard Reliability Analysis of Gravity Dams Using Machine Learning
Mohammad Amin Hariri-Ardebili, University of Colorado Boulder
Ammad Abr, HDR

Developing Inundation Maps from Different Dam Failure Scenarios
Xuejiang Dong, John, Cal. Edson
Nicola Von Gersdorff, Cal. Edson
Matthew Muto, Cal. Edson
Ziad Duron, Harvey Mudd College

Environment & Sustainability
Forecast-Informed Reservoir Operations: Where Are We Now? How Do We Learn?
Michael McMahon, HDR

Adobe Creek Dam: Turning an Emergency into an Opportunity
Trevor Mugele, W.W.Wheeler
Todd Street, W.W.Wheeler
Jerred Hoffman, Fort Lyon Canal Company
Wednesday, April 22 — 4:00 pm - 6:00 pm
CONCURRENT SESSIONS — TRACK 5

5A: Earthquakes
(Concrete)
Room: Centennial F
Moderators: Najib Bouaanani, Polytechnique Montreal; and Alex Walsh, Gannett Fleming

Prediction of Hydrodynamic Loads on Dams and Spillway Gates - Preliminary Findings from a Physical Test Facility
Josh Mortensen, USBR
Jerzy Salamon, USBR

Evaluation of Seismic Hazard for Ghazi-Barotha Hydropower Project of Pakistan
Muhammad Usman, National University of Sciences and Technology
Muhammad Zain, National University of Sciences and Technology
Qazi Mubasher Maqsood, Water and Power Development Authority of Pakistan
Altaf Iqbal, Associated Engineers (Pvt) Ltd.
Zahid Shehzad, Water and Power Development Authority of Pakistan
Ashar Khan, Water and Power Development Authority of Pakistan

On the Effects of Vertical Earthquake Accelerations on Seismic Demands Within Dams and Appurtenant Structures
Najib Bouaanani, Polytechnique Montreal
Sayouba Tinta, Polytechnique Montreal
Siamak Ohadi, Polytechnique Montreal

Case Studies on the Seismic Performance of Vertical Lift Gates
Cée Chan, Hatch
James Rutherford, Hatch

12 Lessons Learned From 12 Years of Rehabilitating Small Urban Embankment Dams
Jeff Blass, AECOM

An Innovative Soil-Cement Gravity Design
Pete Nix, Tetra Tech

Best Value Procurement Process for the Chimney Hollow Reservoir Project
Joe Donnelly, Northern Water
Jeff Drager, Northern Water
Chris Muller, Black & Veatch
Jeff Bair, Black & Veatch
David Bentler, Black & Veatch
Don Montgomery, Stantec

QA/QC in Dam Safety Construction Projects: Check the Box and Forget it or Something Actually Worth Careful Consideration?
Frank Blackett, FERC

Implementaion of a Statewide Dam Construction Monitoring Plan
Chad Davis, HDR

Asphalt Core Embankment Dams (ACED) - Why, Where and How?
David Wilson, WALO USA
Damin Mueller, WALO International AG

An Update on the Chimney Hollow Hydraulic Asphalt Core Rockfill Dam
Donald Montgomery, Stantec
Christine Weber, Stantec
Winnie Kim, Stantec

Construction Risk Management and Contingency Budget Allocation for Hydraulic Asphalt Concrete Core Rockfill Dam
Mark Thompson, Black & Veatch
David Bentler, Black & Veatch
Joe Donnelly, Northern Water
Don Montgomery, Stantec

West Silver Basin Dam - A Rockfill Dam with Asphaltic Concrete Central Core
Michael Zusi, AECOM
Bill Snyder, AECOM
Daniel Swanson, AECOM
José Martínez, Freeport-McMoRan Morenci Inc. USA

Hydro-Québec Experience in Asphalt Core Dams And Dykes: A Great Accomplishment After Five Years of Impoundment
Jean-Pierre Tournier, Hydro-Québec
 Roxane Savard, Hydro-Québec
François Ferland, Hydro-Québec

Effective Emergency Exercise Planning Practices
Kelly Strife, Gannett Fleming
Alicia Baehr, Gannett Fleming

Moccasin Dam Flood Event, March 22, 2018 - Damage Assessment, Engineering Design and Construction of Interim Repair and Improvement
Ted Allen, San Francisco PUC
Jimmy Leong, San Francisco PUC

Public Safety Signage - Best Practices
Paul Meeks, Worthington Products Inc.

Improving Public Safety at Low Head Dams
Paul Schweiger, Gannett Fleming
Steve Davidheiser, Gannett Fleming

Creation of a Database of Low-Head Dams in the U.S.
Rollin Hotchkiss, Brigham Young University

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Characterization and Evaluation of Potentially Movable Rock Blocks for Foundation Stability Analyses at the Gross Reservoir Expansion Project
Erik Newman, AECOM
Dan Meier, AECOM
Doug Yadon, AECOM
Paulo Virreira, Denver Water

2017-2019 Investigations of Subsurface Conditions at Mosul Dam
Georgette Hlepas, USACE

Scoggin's Option 3 RCC Dam alternative, 3D Site Geology Model Using Leapfrog Works Software
Andrew Little, HDR
Verena Winter, HDR

Integrating Dam Safety Risk into the Dam Site Exploration Framework for Design Projects
Derek Morley, Geosyntec Consultants
Brandon Lanthier, Geosyntec Consultants
Holly Nichols, California DWR

Failure, Emergency Response, Mitigation, and Engineering Geology of Guajataca Dam Spillway, Puerto Rico
Tod Loar, USACE
Dennis Zeveney, USACE
Jose Bermudez, Puerto Rico Electric Power Authority