

**DAM SAFETY 10
SEATTLE, WASHINGTON**

**DRAFT AGENDA
(as of 8/2/10)**

SATURDAY, SEPTEMBER 18

9:30 am – 1:30 pm Board of Directors and Committee Chairs Meeting
5:00 pm Conference Kick-Off: Seattle Mariners v. Texas Rangers at Safeco Field

SUNDAY, SEPTEMBER 19

8:00 am – 8:00 pm Speaker Preview Room Open
8:00 am – 6:00 pm Conference Registration Open
8:00 am – 11:00 am Regional Caucus Meetings
8:30 am – 5:00 pm Specialty Workshop on Identification, Monitoring, and Repair of Piping Damage to Dams
10:00 am – 6:00 pm Exhibit and Poster Setup
12:00 pm – 6:00 pm Golf Outing at Harbour Pointe
5:30 pm – 6:00 pm All Moderators Training Meeting
6:00 pm – 7:00 pm Welcome Reception in the Exhibit Hall
6:00 pm – 6:30 pm Monday Speakers Meeting

MONDAY, SEPTEMBER 20

7:00 am – 8:00 pm Speaker Preview Room Open
7:15 am – 5:30 pm Conference Registration Open
7:30 am – 6:30 pm Exhibits & Poster Forum Open
7:30 am – 8:30 am Continental Breakfast in the Exhibit Hall
8:30 am – 10:00 am Opening General Session
Moderated by David A. Gutierrez, P.E., ASDSO President

- Washington Welcome
- ASDSO Report
- Keynote Presentations:

Detective Stories About Great Cascadia Earthquakes
Brian F. Atwater, U.S. Geological Survey, Seattle, WA

Earthquake Dam Safety in the Pacific Northwest: Trying to Keep Up With Science
Ivan G. Wong, R.G., Principal Seismologist/Vice President, URS Corporation, Oakland, CA

Lessons from the February 27, 2010 Chile Earthquake
J. David Frost, Ph.D., The Georgia Institute of Technology, Atlanta, GA

10:00 am – 4:30 pm Guest Tour: Tastes of the Northwest (Lunch Included)

10:00 am – 10:30 am Refreshment Break in the Exhibit Hall

10:30 am – 12:00 pm Concurrent Session I: Test Tube Breaches
Moderated by John E. Chua, USDA Natural Resources Conservation Service

Effects of Breach Formation Parameter Uncertainty on Inundation Risk Area and Consequence Analysis
Benjamin Skousen, Graduate Research Assistant, University of Utah, Los Alamos National Laboratory, Los Alamos, NM; David Judi and Timothy McPherson, Los Alamos National Laboratory, Los Alamos, NM; and Steve Burian, University of Utah, Salt Lake City, UT

Observations on Dam Overtopping Breach Processes and Prediction
Darrel M. Temple, P.E., DWRE, Research Hydraulic Engineer (retired); Gregory J. Hanson, Ph.D., P.E., Supervisory Research Hydraulic Engineer; and Sherry L. Hunt, Ph.D., Research Hydraulic Engineer, USDA-ARS Hydraulic Engineering Research Unit, Stillwater, OK

Erodibility Characteristics of Embankment Materials
Gregory J. Hanson, Ph.D., P.E., Supervisory Research Hydraulic Engineer; Darrel M. Temple, Ph.E., DWRE, Research Hydraulic Engineer (retired); Sherry Hunt, Ph.D., Research Hydraulic Engineer; and Ronald D. Terjal, Agricultural Engineer, USDA-ARS Hydraulic Engineering Research Unit, Stillwater, OK; and Tony L. Wahl, Hydraulic Engineer, USDI Bureau of Reclamation, Denver, CO

10:30 am – 12:00 pm Concurrent Session II: Get Me a Double-shot Espresso, We're Going to
be Here All Night
Moderated by Glenn D. Lloyd, P.E., Missouri Department of Natural Resources

Emergency Repair of a Small Watershed Dam Due to Abrupt Erosion of Dispersive Earthfill Material
Christopher A. King, P.G., Geologist; Todd Stringer, P.E., Design Engineer, and Walter Delp, P.E., State Conservation Engineer, USDA - NRCS, Little Rock, AR; and Stanley Mathis, P.E., Civil Engineer, USDA – NRCS, Fort Smith, AR

Plug That Dam (What the Engineer Said When Piping Began)
Mark E. Ahlstrom, P.E., Dam and Reservoir Team Leader, URS Corporation, Gaithersburg, MD; and Chad B. Gillan, P.E., Structural Engineer, URS Corporation, Denver, CO

The Flood of 2009
D. Thomas (Tom) Woosley, P.E., Program Manager, Safe Dams Program, Georgia Department of Natural Resources, Atlanta, GA

10:30 am -12:00 pm Concurrent Session III: Information Management for Regulators
Moderated by Gregg W. Hudock, P.E., Golder Associates, Inc.

DAMSAFE A New Program For Managing Dam Safety In Massachusetts

Gillian M. Gregory, Ph.D., P.E., Senior Project Manager, GEI Consultants Inc., Woburn, MA; William C. Salomaa, Dam Safety Program Manager, Massachusetts Department of Conservation and Recreation, Boston, MA; and Matthew von Wahlde, Vice President, Geonetics, Boston, MA

Connecticut DEP's Implementation of DamWatch

Marc K. Baribault, Meteorologist, and Joseph P. Scannell, President, USEngineering Solutions Corp., Hartford, CT

Development and Application of WRVAT to the Inventory of Dams of Mississippi

Joel S. Kuszmaul, Associate Professor and Chair, Bryan J. Gunter, and Robert M. Holt, Department of Geology and Geological Engineering, University of Mississippi, University, MS; and Tanya Holtz, Toya Jones, John Pickens, and Abhishek Singh, INTERA, Inc., Austin, TX

10:30 am – 12:00 pm National Levee Safety Program Implementation: Part One
Moderated by Stephen W. Verigin, P.E., GEI Consultants, Inc.

National Levee Safety Program – The Path Forward

Eric C. Halpin, P.E., Special Assistant for Dam and Levee Safety and Vice Chair of the National Committee on Levee Safety, US Army Corps of Engineers, Washington, DC

USACE Levee Inspections

Tammy Conforti, Levee Safety Program Manager, US Army Corps of Engineers, Washington, DC

National Levee Database Rollout

Bryan Baker, P.E., Engineer, US Army Corps of Engineers, Hanover, NH

12:00 pm – 1:30 pm Lunch On Own

1:30 pm – 3:00 pm Concurrent Session I: Inspections and Investigations
Moderated by Stephen L. Jamieson, P.E., W. W. Wheeler and Associates, Inc.

Safety Evaluations of Hidden Dam - Seepage Models Meet Reality

Rebecca Allen, P.E., Geological Engineer, and Elena Sossenkina, P.E., Project Manager, Kleinfelder, Inc., Golden, CO; Keith A. Ferguson, P.E., Vice President, HDR Engineering, Inc., Denver, CO; and Kevin Hazleton, P.E., G.E., Geotechnical Engineer, US Army Corps of Engineers, Sacramento, CA

Evaluation of Dam Surveillance Requirements by Reference to Failure Modes

Peter Gaffran, Dam Safety Engineer, B.C. Hydro, South Slokan, BC; and Bryan Watts, President and CEO, Klohn Crippen Berger, Vancouver, BC, Canada

Monitoring and Investigation of a Sinkhole at John Hart Dam

Eric Mainprize, M.Sc., P.Eng., Area Dam Safety Engineer, and Wally Kobetitch, A.Sc.T, Engineering Technologist/Project Specialist, BC Hydro, Campbell River, BC, Canada

1:30 pm – 3:00 pm Concurrent Session II: Supersonic Dam Rehabs: Part One
Moderated by Doug Lantz, Ph.D., P.E., Tetra Tech, Inc.

The Use of Cradles in Earth Dams Design and Construction Considerations

Joseph S. Monroe, P.E., Senior Associate, Schnabel Engineering, Alpharetta, GA

Design and Construction of Seismic Remediation for Duke Energy's Catawba Dam

Brian F. Chrisman, P.E., Senior Geotechnical Engineer, HDR/DTA, Charlotte, NC; and Bradley T. Keaton, P.E., Duke Energy Carolinas LLC, Charlotte, NC

Alternative Rehabilitation Methods for NRCS-Assisted Watershed Dams in Oklahoma
Kevin R. Cook, P.E., Geotechnical Engineer, Valerie G. Glasgow, Design Engineer, and Victor W. Slowik, P.E., Multi-State Design Engineer, USDA - NRCS, Stillwater, OK

1:30 pm – 3:00 pm Concurrent Session III: Past, Present, and Future of Dam Engineering
Moderated by Daniel W. Osmun, P.E., Bureau of Reclamation

Dam Engineering Through the Ages
Kim de Rubertis, P.E., F.ASCE, Consulting Engineer, Cashmere, WA

Prioritizing Challenges Posed to a City by New Dam Safety Regulations
Stephen L. Whiteside, P.E., Vice President, Dam and Levee Market Leader, CDM, Raleigh, NC; Tyler C. Dunn, P.E., Senior Geotechnical Engineer, and Aaron J. Rubin, E.I.T., Geotechnical Engineer, CDM, Cambridge, MA

All for One: New Common Dam Safety Practices of the Bureaus of the Department of the Interior
Mark E. Baker, PMP, P.E., Dam Safety Program Manager, Bureau of Reclamation, Denver, CO

1:30 pm – 3:00 pm National Levee Safety Program Implementation: Part Two
Moderated by Mark B. Ogden, P.E., Association of State Dam Safety Officials

National Levee Standards
Michael Bart, PE, Leader US Army Corps of Engineers Levee Safety Policy and Procedure Team; and Leslie F. Harder, Jr., Ph.D., P.G., P.E., Senior Water Resources Technical Advisor, HDR Engineering, Inc., Folsom, CA

Tolerable Risk Guidelines
Donald L. Basham, P.E., Associate, Stantec Consulting Services, Inc., Crestwood, KY; and Eric C. Halpin, P.E., Special Assistant for Dam and Levee Safety, US Army Corps of Engineers, Washington, DC

Liability for Levees
Sam Riley Medlock, Policy & Partnerships Program Manager, Association of State Floodplain Managers, Inc., Madison, WI; and Stephen W. Verigin, P.E. Vice President, GEI Consultants, Inc., Rancho Cordova, CA

3:00 pm – 3:30 pm Refreshment Break in the Exhibit Hall

3:30 pm – 5:00 pm Concurrent Session I: The Geotech Room: Stress Therapy for Dams
Moderated by Anthony M. Nokovich, P.E., American Water Company

Using SIGMA/W to Predict Hydraulic Fracture in an Earthen Embankment
Danny K. McCook, P.E., Independent Consultant, Fort Worth, TX; and Keith O. Grotrian, P.E., Civil Engineer, USDA-NRCS, Lincoln, NE

Performance of Slope Treatments of Earthfill Dams to Prevent Surficial Failures
Jose Hernandez, P.E., Dam Safety Program Manager, and Les Perrin, P.E., (Retired). US Army Corps of Engineers, Fort Worth, TX; Venkata Dronamraju, Former Doctoral Student, and Anand J. Puppala, Ph.D., P.E., Professor, Civil Engineering Department, The University of Texas at Arlington, Arlington, TX

Probabilistic Slope Stability Analysis of Embankment Dams Using Random Finite Elements Method (RFEM)
Giorgia Fulcheri deWolfe, Ph.D., Civil Engineer, US Bureau of Reclamation, Colorado School of Mines, Westminster, CO; Vaughn D. Griffiths, Ph.D., P.E., Professor of Civil Engineering, and Jinsong Huang, Ph.D., Assistant Professor, Colorado School of Mines, Golden, CO

3:30 pm – 5:00 pm Concurrent Session II: The H & H Room: Focus on Hydraulics
Moderated by David L. Moore, P.E., Tetra Tech, Inc.

Composite Modeling of the Success Dam Spillway; Lessons Learned

Bruce Savage, Ph.D., P.E., Assistant Professor, Idaho State University, Pocatello, ID; William Rahmeyer, Ph.D., Professor, and Steven L. Barfuss, P.E., Research Assistant Professor, Utah Water Research Laboratory, Logan, UT; and Stephen Graff, Hydraulic Engineer, US Army Corps of Engineers, Sacramento, CA

It's a Bird, It's a Plane, It's a Super-Cavitating Baffle Block – Characteristics of Energy Dissipation

Nathan C. Cox, P.E., Hydraulic Engineer, and Harold C. Huff, P.E., Hydraulic Engineer, US Army Corps of Engineers, Sacramento, CA; Robert F. Einhellig, P.E. Group Manager, Connie D. Svoboda, P.E., Hydraulic Engineer, and K. Warren Frizell, Research Hydraulic Engineer, Bureau of Reclamation, Denver, CO

Hydraulic Analysis of Existing Spillways

Richard J. Tucker, P.E., President, RJ Associates, LLC, Westport Island, ME

3:30 pm – 5:00 pm Concurrent Session III: Building a Better EAP
Moderated by Jason Ward, Ph.D., P.E., Colorado Division of Water Resources

Emergency Action Planning at FERC-Regulated Dams: Testing, Activations, Lessons Learned and a Look Behind the Curtain

Edward Perez, P.E., Deputy Regional Engineer, and Jeffrey Racicot, P.E., Civil Engineer, Federal Energy Regulatory Commission, Portland, OR

FEMA's Development of Standard Approaches to Inundation Mapping

James E. Demby, Jr., P.E., National Dam Safety Program Manager, Federal Emergency Management Agency, Washington, DC; Sam Crampton, P.E., CFM, Deputy Department Manager, Water Resources, Dewberry, Atlanta, GA; and Edward G. Beadenkopf, P.E., Principal Engineer, URS Corporation, Herndon, VA

Assessing the Life Safety Performance of Emergency Action Plans

William M. Johnstone, P.Eng., MASc, Ph.D. Candidate, and Barbara J. Lence, Ph.D., Professor, University of British Columbia, Vancouver, BC

3:30 pm – 5:00 pm National Levee Safety Program Implementation: Part Three
Moderated by Leslie F. Harder, Jr., Ph.D., HDR Engineering, Inc.

Recovering From Failure, New Orleans 5 Years Later

Bob Turner, P.E., Chief Engineer, Southern Louisiana Flood Protection Area

Levee Screening Tool

Jason Needham, P.E., Consequence Specialist; David Margo, P.E., Hydraulic Engineer; and Andy Harkness, P.E., Division Chief, Risk Management Center, US Army Corps of Engineers

3:30 pm – 5:00 pm Private Dams on Federal Property: Follow-up to the 2009 Soapbox Session

At the last soapbox session, a number of problems and short term tasks were identified. In this follow-up session, discussion will focus on progress that is being made to resolve the some of the concerns. Results from a survey of states and federal agencies will be presented followed by a hands-on strategic planning session. Representatives land owning federal agencies, States and interested others are invited to participate in this interactive session.

Organizers/Presenters include, Brad Iarossi, Fish and Wildlife Service, Mark Baker, US Bureau of Reclamation and Michele Lemieux, State of Montana

5:00 pm – 5:30 pm Tuesday Speakers & Moderators Meeting

5:00 pm – 6:30 pm Reception in the Exhibit Hall

TUESDAY, SEPTEMBER 21

7:00 am – 8:00 pm Speaker Preview Room Open

7:30 am – 5:00 pm Conference Registration Open

7:30 am – 6:00 pm Exhibits & Poster Forum Open

7:30 am – 8:30 am Continental Breakfast in the Exhibit Hall

8:30 am – 10:00 am General Session: In the Hot Seat: Rapid Response to Dam Emergencies
Moderated by Matt Lindon, P.E., Utah Dam Safety

This fast-paced session will go through several dam incidents, focusing on the immediate action that was taken to mitigate dam failure. In other words, the action that was taken during those first moments when everyone was thinking “holy crap – this dam might fail”!

Presenters:

Mark E. Baker, P.E., Dam Safety Program Manager, Bureau of Reclamation, Denver, CO; Michele Lemieux, P.E., Civil Engineer, Montana Department of Natural Resources & Conservation, Helena, MT; Mathew Lindon, P.E., Assistant State Engineer, Utah State Engineers Office, Salt Lake City, UT; Joel A. Sipe, Sr. Civil Engineer Hydraulic, Pennsylvania Department of Environmental Protection, Bureau of Waterways Engineering, Harrisburg, PA; and William Sturtevant, State Dam Safety Engineer, Wisconsin Department of Natural Resources, Madison, WI

10:00 am – 10:30 am Refreshment Break in the Exhibit Hall

10:30 am – 12:00 pm Concurrent Session I: Embankment Slope Stability Mini Workshop
Moderated by Michele Lemieux, P.E., Montana Department of Natural Resources and Conservation

Embankment Slope Stability Analysis: What is Important and What is Not
John W. France, P.E., Vice President, and Christina J.C. Winckler, Geotechnical Engineer, URS Corporation, Denver, CO

Selection of Strengths for Embankment Stability Analysis
Danny K. McCook, P.E., Independent Consulting Engineer, Fort Worth, TX

Panel Discussion and Q & A

10:30 am – 12:00 pm Concurrent Session II: The H & H Room: Focus on Hydrology
Moderated by Dennis W. Reep, USDA Natural Resources Conservation Service

Technically Speaking...Montana's Technical Notes for Risk-Based Dam Safety Analyses
Gary Fischer, P.E., Civil Engineer, Hydrometrics, Inc., Helena, MT; and Michele Lemieux, P.E., Dam Safety Program Manager, Montana Department of Natural Resources and Conservation, Helena, MT

Average Recurrence Interval of Event Precipitation in Real-Time

Tye W. Parzybok, GISP, President and Chief Meteorologist, and Douglas M. Hultstrand, MS, Senior Hydrometeorologist, Metstat, Inc., Windsor, CO; Bill D. Kappel, Vice President and Senior Meteorologist, and Edward Tomlinson, Ph.D., President and Chief Meteorologist, Applied Weather Associates, Monument, CO

A Practitioner's Field Guide to Guessing in the Dark: (How I Learned to Stop Worrying and Love Uncertainty)

James T. Fay, P.E., Investigations Engineer, North Dakota State Water Commission, Bismarck, ND

10:30 am – 12:00 pm Concurrent Session III: Owners, Alligators and the Public: Multi-tasking for Regulators

Moderated by Mishelle R. Noble-Blair, Fairfax Water

A Cooperative Approach to Promoting EAP Development

Michael S. Weller, E.I., Environmental Engineer, Ryan P. Mueller, P.E., Director, Water Resources Center, Missouri Department of Natural Resources, Jefferson City, MO

Can Non-Jurisdictional Dams be High Hazard? A Study of the Papago Park Dams in Phoenix

David Jensen, P.E., CFM, Project Manager, Melanie Fife, P.E., and Zach Schmidt, P.E., CFM, Kimley-Horn and Associates, Inc., Phoenix, AZ; and Michael Ziegler, Principle Engineering Technician, City of Phoenix Street Transportation Department, Phoenix, AZ

Navigating Dam Safety Rules in Virginia

Gregory Zamensky, P.E., Regional Practice Leader, Black & Veatch Corporation, Gaithersburg, MD

10:30 am – 12:00 pm Third Annual National Dam Security Forum: Security and You

Moderated by Donald Taussig, Bureau of Reclamation

General Threat Considerations for Dams

Fernando Keller, Acting Branch Chief; and Shannon Regan, Threat Analyst, Strategic Infrastructure Threat Branch, U.S. Department of Homeland Security, Washington DC; and *Speaker TBA*, Federal Bureau of Investigation

Washington State Fusion Center

James Szrama, Intelligence Officer to Washington State, Office of Intelligence and Analysis, U.S. Department of Homeland Security, Seattle, Washington

Security Awareness for Dam Owners and Operators

Michael Bowen, Security Specialist; Ray Benjamin, Deputy Director, Sector-Specific Agency Executive Management Office; Enrique Matheu, Ph.D., Chief, Dams Sector Branch, and Daniel Abreu, Program Analyst, Dams Sector Branch, Office of Infrastructure Protection, U.S. Department of Homeland Security, Washington DC

12:00 pm – 1:30 pm Lunch On Own

1:30 pm – 3:00 pm Concurrent Session I: Seismic Issues Part One

Moderated by R. Craig Findlay, P.E., G.E., Findlay Engineering, Inc.

Evaluating the Seismic Risk Implications of the MCE

Martin W. McCann, Jr., President, Jack R. Benjamin & Associates, Inc., Menlo Park, CA; and Ivan Wong, Vice President, URS Corporation, Oakland, CA

Development of Ground Motions for Scoggins Dam Raise Appraisal Study

Zia Zafir, Ph.D., P.E., Chief Seismic Engineer, Kleinfelder, Inc., Sacramento, CA; and Arlan Rippe, P.E., D.GE, Senior Principal Engineer, Kleinfelder, Inc., Beaverton, OR

Dam Design 101, Magnitude 9 Earthquakes and Fault Rupture at an Existing Dam
John P. Ballegeer, P.E., P.G., Senior Geotechnical Engineer, Kleinfelder, Inc., Golden, CO

1:30 pm – 3:00 pm Concurrent Session II: Overtopping Testing and Performance
Moderated by Gregory J. Hanson, P.E., Ph.D., USDA Agricultural Research Service

Large Scale Stepped Spillway Testing
Sherry L. Hunt, Ph.D., EIT, Research Hydraulic Engineer, and Kem C. Kadavy, P.E., USDA-ARS
Hydraulic Engineering Research Unit, Stillwater, OK

Performance of the Yellow River RCC Spillways During the September 2009 Georgia Floods
Gregg W. Hudock, P.E., Senior Consultant, Golder Associates Inc., Atlanta, GA; and Jonathan
Semerjian, P.E., Engineer V, Gwinnett County Department of Water Resources, Lawrenceville, GA

Wind, Waves and Sands Don't Mix: Or Do They?
Terrence E. Arnold, P.E., Senior Project Manager, and J. Felipe Garcia, MWH Americas, Inc., Denver,
CO; and Marc Jacob, P.E., MWH Americas, Inc., Chicago, IL

1:30 pm – 3:00 pm Concurrent Session III: Best Practices in Dam Construction: Part One
Moderated by William T. McCormick, III, P.E., Colorado Division of Water Resources

Case Study of Concrete Monolith Joint Waterstop Repair Using Inflatable Waterstop Technology
Mark N. Haddock, R.G., P.E., Senior Engineer, Golder Associates, Inc., St. Charles, MO; and Matt
Balven, Civil Engineer, AmerenUE, St. Louis, MO

Dive, Dive, Dive, Installation of Cheesman Dam's Inlet Gates
James H. Weldon, P.E., Engineering Manager/Dam Safety, Denver Water Department, Denver, CO; and
Gordon F. Harbison, P.E., Senior Project Engineer, Krech Ojard & Associates, Hermitage, PA

Water-Proofing Dams
Robert A. Kline, Jr., P.E., Engineering Manager, Gannett Fleming, Inc., Harrisburg, PA; and John A.
Wilkes, P.E., President, CARPI USA, Inc., Roanoke, VA

1:30 pm – 3:00 pm Concurrent Session IV: Engineering Solutions for Levees
Moderated by Bryan Baker, P.E., US Army Corps of Engineers

Reliability-based Underseepage Analysis in Levees Using Monte Carlo Simulation
Lourdes Polanco, Ph.D. Student, and John Rice, Ph.D., Assistant Professor, Department of Civil and
Environmental Engineering Utah State University, Logan, UT

Implications & Analysis of Seepage on Overall Stability and Design of Levee Foundation Treatments
Christopher G. Eggers, P.E., Engineer, and Alfred N. Kovalik, P.E., LEP, LEED®, AP, Vice President, and
Michael Taylor, P.E., Principal, GeoDesign, Inc., Middlebury, CT; and Samuel G. McTavey,
Geologist/Hydrogeologist, HydroEnvironmental Solutions, Inc., Somers, NY

Investigation of Tree Root Penetration into a Levee Soil-Cement-Bentonite Slurry Cutoff Wall
Leslie F. Harder, Jr., Ph.D., P.E., G.E., Senior Water Resources Technical Advisor, HDR Engineering,
Inc., Folsom, CA; Roy Kroll, CEG, Engineering Geologist, California Department of Water Resources,
Sacramento, CA; Vic Claassen, Soils Extension Researcher, and Alison M. Berry, Ph.D., Professor,
University of California, Davis, CA; and Peter E.F. Buck, Natural Resources Supervisor, Sacramento Area
Flood Control Agency, Sacramento, CA

1:30 pm -3:00 pm Third Annual National Dam Security Forum: Real-Life Responses to
Emergency Situations
Moderated by Mark R. Haynes, Colorado Division of Water Resources

Lessons Learned: The Battle of Seattle

William F. Larson, Security Director, Chelan County Public Utility District #1, Wenatchee, WA; and Richard F. Robert, Consultant, Power Generation, Puget Sound Energy, Wenatchee, WA

Dam Security Response Case Study

Speaker(s) TBA

Emergency Gap Closures

Joseph A. Padula, Research Structural Engineer, US Army Engineer Research and Development Center, Vicksburg, MS

3:00 pm – 3:30 pm Refreshment Break in the Exhibit Hall

3:30 pm – 5:00 pm Concurrent Session I: The Geotech Room: Venti-Sized Solutions
Moderated by Stephen Whiteside, P.E., CDM

Howard Hanson Dam Right Abutment Seepage; 2009 Interim Grout Curtain and Drainage Tunnel Improvements

Thomas J. Danielson, Geologist, Amy Ebnet, Geologist, and Richard E. Smith, Supervisory Geologist, and Matt I. Brookshier, US Army Corps of Engineers, Seattle, WA; and Ryan P. Sullivan, Project Manager, Nicholson Construction Company, Mascot, TN

Remediation of Deep Seated Abutment Movement at Nesbitt Dam

Anthony Nokovich, P.E., Senior Engineer, Pennsylvania American Water Company, Mechanicsburg, PA; Cari Beenenga, P.E., Geotechnical Project Manager, David Snyder, P.E., Geotechnical Project Engineer, and Edward Barben, E.I.T., Geotechnical Designer, Gannett Fleming, Inc., Harrisburg, PA

Combined Presentation:

Quality Control & Assurance & Performance Verification for Cutoff Walls

Donald A. Bruce, Ph.D., D.GE, C.Eng., President, Geosystems, L.P., Venetia, PA; and Mario Mauro, Vice President, TREVIICOS Corporation, Charlestown, MA

And Specifications for Rock Mass Grouting

Donald A. Bruce, Ph.D., D.GE, C.Eng., President, Geosystems, L.P., Venetia, PA; and Trent L. Dreese, P.E., Vice President, Gannett Fleming, Inc., Camp Hill, PA

3:30 pm – 5:00 pm Concurrent Session II: Supersonic Dam Rehabs: Part Two
Moderated by John A. Falk, Idaho Department of Water Resources

Composite Dam Construction - A Case Study of Deep Creek Watershed Dam 5D

Thomas J. Fitzgerald, P.E., Associate, Donald L. Basinger, P.E., Senior Consultant, and Tillman Marshall, P.E., Principal, Schnabel Engineering, Greensboro, NC

Diaphragm Wall Construction for New Auxiliary Spillway at Canton Dam

Richard Deschamps, P.E., Ph.D., Vice President of Engineering, Nicholson Construction Company, Cuddy, PA; Paul Krumm, Project Manager, Nicholson Construction Company, North Salt Lake City, UT; and Michael P. Walker, P.E., Vice President, GEI Consultants, Inc., Woburn, MA

NADA Dam: Reconstructing a Concrete Dam in the Wilderness

John Treacy, E.I., Water Resource Engineer, and Stephen L. Jamieson, P.E., Principal, W.W. Wheeler & Associates, Inc., Englewood, CO; Daniel Brauer, P.E., President, Future Engineering and Technology Group, Wheat Ridge, CO; Gary Blefgen, P.E., Regional Dam Safety Officer, U.S. Fish and Wildlife Service, Portland, OR; and Steve Croci, Deputy Complex Manager, Leavenworth National Fish Hatchery, Leavenworth, WA

3:30 pm – 5:00 pm Concurrent Session III: Responsible Restoration: We Do the Right Thing
Moderated by: Robert R. Bowers, O'Brien & Gere

Large Dam Removals for Restoration of the Elwha River
Thomas E. Hepler, P.E., B.S.C.E., Civil Engineer, Bureau of Reclamation, Denver, CO

Case Studies of Dam Removal in the Pacific Northwest
Doug Lantz, Ph.D., P.E., P.H., Principal Project Manager, Tetra Tech, Inc., Tucson, AZ; and Merri Martz, P.W.S., Senior Restoration Biologist, Tetra Tech, Inc., Portland, OR

Solutions for Improving Fish Passage and Public Safety at Low Head Dams
Paul G. Schweiger, P.E., Engineering Manager, Donald P. Roarabaugh, Jr., P.E., Senior Project Engineer, Eric C. Neast, P.E., Senior Project Engineer, and Chad Hoover, CET, Designer, Gannett Fleming, Inc., Harrisburg, PA; and Luther Aadland, Ph.D., Ecological Services Stream Habitat Program, Minnesota Department of Natural Resources, Saint Paul, MN

3:30 pm – 5:00 pm Third Annual National Dam Security Forum: Learning from Real-Life Scenarios
Moderated by Hillman Mitchell, Emergency Management Director, City of Tukwila, WA

A Systematic Approach for Analysis of Infrastructure Interdependencies and Cascading Impacts
Stephen M. Folga, Ph.D., Energy Systems Engineer, and Jim Peerenboom, Ph.D., Director, Infrastructure Assurance Center, Argonne National Laboratory, Argonne, IL; Tom Korty, Emergency Management Coordinator, and Tim Milam, Highway Planning Manager, Illinois Department of Transportation, Springfield, IL; Enrique Matheu, Ph.D., Chief, Dams Sector Branch, Office of Infrastructure Protection, US Department of Homeland Security, Arlington, VA; and Yazmin Seda-Sanabria, Senior Program Manager, US Army Corps of Engineers, Office of Homeland Security, Washington, DC

Enhancing Protection and Resilience in the Dams Sector
Enrique Matheu, Ph.D., Chief, Kristen Baumgartner, Program Analyst, and Daniel Abreu, Program Analyst, Dams Sector Branch, Office of Infrastructure Protection, US Department of Homeland Security, Arlington, VA; Elizabeth Hocking, Policy Analyst, Argonne National Laboratory, Washington, DC; Al Hancock, Senior Security Consultant, Enterprise Security/Xcel Energy, Minneapolis, MN; and John H. Moyle, P.E., Manager, New Jersey Bureau of Dam Safety, Trenton, NJ

Improving Regional Resilience: Bringing it All Together
Yazmin Seda-Sanabria, Senior Program Manager, US Army Corps of Engineers, Office of Homeland Security, Washington, DC; Edward J. Hecker, US Army Corps of Engineers; James E. Demby, Jr., P.E., National Dam Safety Program Manager, Federal Emergency Management Agency, Arlington, VA; Enrique Matheu, Chief, Dams Sector Branch, US Department of Homeland Security, Arlington, VA; Robert B. Stephan, Dutko Worldwide; Cris Hughes, US Department of Homeland Security; and Douglas J. Norton, US Army Corps of Engineers

3:30 pm – 5:00 pm Soapbox Session: Is a New Approach Needed for Dam Failure Investigations?
Moderated by Mark E. Baker, P.E., Bureau of Reclamation

An analysis of seven major dam failures over the past 40 years shows that there is no standard method for investigating dam failures. Several investigations can spring-up simultaneously. There have been perceptions of conflict of interest and a corresponding loss in public trust. Investigation reports of the same failure sometimes have little consistency. The technical and human factors that led to the failure are not disseminated to the dam safety industry in a consistent manner. Dam failures are high-profile media events. They create a large burden on state dam safety programs and they can result in multi-year, multi-million-dollar lawsuits.

In the transportation sector, the National Transportation Safety Board has clear authority to promptly and thoroughly investigate major accidents such as plane crashes. Should the dam safety industry adopt a new approach to investigating dam failures?

- 5:00 pm – 6:00 pm Reception in the Exhibit Hall
- 5:00 pm – 5:30 pm Wednesday Speakers & Moderators Meeting
- 6:00 pm – 9:00 pm Exhibits Dismantle

WEDNESDAY, SEPTEMBER 22

- 7:00 am – 4:00 pm Speaker Preview Room Open
- 7:30 am – 4:00 pm Conference Registration Open
- 7:30 am – 8:30 am Continental Breakfast in the Poster Forum
- 8:30 am – 10:00 am Concurrent Session I: The Geotech Room: Geophysical Investigations
Moderated by Sherry Ann Durst, P.E., Kansas Department of Agriculture, Division of Water Resources

The Foundation of Martis Creek Dam: Revealed by Geophysical Imaging
Lewis Hunter, Ph.D., P.G., Senior Geologist, and Ronn S. Rose, Dam Safety Program Manager, US Army Corps of Engineers, Sacramento, CA; and Michael H. Powers, Ph.D., Research Geophysicist, U.S. Geological Survey, Denver, CO

Detection of Structural Components and Seepage Zones at the Eagle Mountain Facility Using Geophysics
Justin B. Rittgers, (former) Geophysicist; and Phil Sirls, Manager, Zonge Geosciences, Lakewood CO; Mark G. Thomas, P.E., P.G., and Hugh T. Kelly, P.E., P.G., PB World, Inc., Dallas, TX; and Louie Verreault, Tarrant Regional Water District, Fort Worth, TX

Utilizing Geophysics in Auxiliary Spillway Evaluation; New Creek Site 14 Dam, Grant County, WV
Cari Beenenga, P.E., Geotechnical Project Manager, Gannett Fleming, Inc., Harrisburg, PA; L. Andrew Deichert, P.E., Civil Engineer, USDA – NRCS, Morgantown, WV; Richard Lee, P.G., President, Quantum Geophysics, Inc., Phoenixville, PA; and Molly O'Connor, P.E., Geotechnical Project Engineer, Gannett Fleming, Inc., New York, NY

- 8:30 am – 10:00 am Concurrent Session II: The H & H Room: Focus on Hydrology Part Two
Moderated by John C. Haapala, MWH Americas, Inc.

Temporal Distribution of PMP Rainfall as a Function of Area Size
Bill D. Kappel, Senior Meteorologist/Vice President, and Edward M. Tomlinson, Ph.D., President and Chief Meteorologist, Applied Weather Associates, Monument, CO; Tye W. Parzybok, GISP, President, and Doug Hulstrand, MS, Senior Hydrometeorologist, Metstat, Inc., Windsor, CO

Connecting the Dots: Using National Weather Service Gridded Precipitation Data for Dam Safety
William Brown, P.E., Civil Engineer, and Jeff Holloway, P.E., State Conservation Engineer, USDA - NRCS, Athens, GA; Jeff Dobur, Senior Hydrologist, and John Schmidt, Developmental and Operations Hydrologist, National Weather Service, Peachtree City, GA

Climate Change, Levees & Dams: Changes Are Coming!
John F. Henz, C.C.M., Certified Consulting Meteorologist, Aurora, CO

8:30 am – 10:00 am Concurrent Session III: Yesterday Can Hold the Answers
Moderated by Paul G. Schweiger, P.E., Gannett Fleming, Inc.

The Banqiao and Shimantan Dam Failures: Factors Affecting the Warning and Evacuation Success
Wayne J. Graham, P.E., Hydraulic Engineer, Bureau of Reclamation, Denver, CO

Lessons Learned from the TDEC Advisory Board in Regard to the TVA Kingston Dredge Cell
Containment Facility Failure
Steven Jacoby, P.E., Managing Director; and Shannon Koeninger, P.E., Structural Engineer, The
Benham Companies, LLC, Tulsa, OK; and Bruce Tschantz, Ph.D., P.E., F.ASCE, Professor Emeritus,
University of Tennessee, Knoxville, TN

Failure of Upriver Dam - Lessons Missed in 1986 Reinforce Lessons Learned At State Regulated Lagoon
and Taum Sauk Failures in 2005
David W. Lord, P.E., MSCE, Senior Civil Engineer, and Jeffrey Racicot, P.E., Civil Engineer, Federal
Energy Regulatory Commission, Portland, OR; and John Falk, P.E., Dam Safety Manager, Idaho
Department of Water Resources, Boise, ID

8:30 am – 10:00 am Third Annual National Dam Security Forum: Transforming Vulnerabilities
Into Strengths
Moderated by Toni Linenberger, Bureau of Reclamation

Comparison of Security and Dam Safety Risk Management Programs
Dave Hinchliff, P.E., Civil Engineer/Technical Specialist, Bureau of Reclamation, Denver, CO

Dam Vulnerability Assessments: Require More Than Just Security Designs
Edward F. Martella, P.E., Vice President of Homeland Security and Public Safety, and Richard P.
Kummerle, P.E. P.P., P.G., Managing Principal, Tectonic Engineering, Mountainview, NY

Portfolio Prioritization Using a Potential Consequence Index
Enrique E. Matheu, PhD, Chief, and Jun Zou, P.E., Civil Engineer, Dams Sector Branch, U.S. Department
of Homeland Security, Arlington, VA; and Michelle Yeziarski, P.E., Civil Engineer, SRA International, Inc.,
Arlington, VA

8:30 am – 10:00 am Annual Business Meeting for State Officials

10:00 am – 10:30 am Refreshment Break in the Poster Forum

10:30 am – 12:00 pm Concurrent Session I: Seismic Issues Part Two
Moderated by Jerald M. LaVassar, Washington Department of Ecology

Mammoth Pool Dam Seismic Fragility Analysis
R. Craig Findlay, P.E., G.E., Ph.D., President and Principal Engineer, Findlay Engineering, Inc.,
Yarmouth, ME; John Yen, P.E., Director of Dam Safety, C. Michael Knarr, P.E., Consultant, and Gene
Hawkins, P.G., Program Manager, Seismic Hazard Analysis, Southern California Edison, San Dimas, CA

Seismic Investigations and Evaluations for Isabella Dam Safety Modification Project
David C. Serafini, P.E., G.E., Geotechnical Engineer, Vlad Perlea, P.E., Civil Engineer, Henri Mulder,
P.E., Civil Engineer, Ronn Rose, R.G., Registered Geologist, Chuck Wong, P.E., Civil Engineer, and
Michael Ma, P.E., Civil Engineer, US Army Corps of Engineers, Sacramento, CA

Landslides and Earthquakes: What Else Could Impact the Design of a 165-meter Tall Dam?
Ray E. Martin, Ph.D., P.E., Consulting Engineer, Ray E. Martin, LLC, Ashland, VA; and Joseph S.
Monroe, P.E., Senior Associate, Schnabel Dam Engineering, Inc., Alpharetta, GA

10:30 am – 12:00 pm Concurrent Session II: Supersonic Dam Rehabs: Part Three
Moderated by Gregory S. Paxson, P.E, Schnabel Engineering

Rock Abutments, Conservative Anchoring Schemes vs. Subsequent Analyses
Vik Iso-Ahola, P.E., Principal Engineer, and Dina Hunt, P.E., Geotechnical Engineer, MWH Americas, Inc., Walnut Creek, CA

We Can Build This Dam Project, But What Do We Build it On?
Robert W. Waddell, P.E., Senior Project Engineer, and Christina J.C. Winckler, Senior Project Engineer, URS Corporation, Denver, CO; and Ron Allen, Watershed Manager, Pawnee Watershed Joint District No. 81, Jetmore, KS

Keeping an Aging Dam Performing in the 21st Century
John C. Stoessel, P.E., Senior Engineer, and C. Michael Knarr, S.E., Consultant, Southern California Edison, San Dimas, CA; John A. Wilkes, P.E., President, CARPI, USA, Inc., Roanoke, VA; and Craig McElfresh, President, MCS Construction, Inc., Clovis, CA

10:30 am -12:00 pm Concurrent Session III: Engineering Solutions for Levees Part Two
Moderated by Terrence E. Arnold, P.E., MWH Americas, Inc.

Preliminary Design Procedure for EPS-Block Geofoam Lightweight Fill in Levees Overlying Soft Ground
David Arellano, Ph.D., P.E., Assistant Professor, The University of Memphis, Memphis, TN

Could the River Run Through It? Lowell's Response to an "Inactivated" Levee System
James Drake, P.E., Associate, CDM, Manchester, NH; Michael Stuer, Engineering Manager, Lowell Regional Watershed Utility, Lowell, MA; and Michael Bachand, P.E., Project Manager, CDM, Cambridge, MA

Evaluation and Rehabilitation of a 70-Year Old Relief Well Foundation Treatment System
Michael P. Taylor, P.E., Principal, GeoDesign, Inc., Middlebury, CT; Robert A. Jarvis, P.E., LEED AP, Chief Civil Engineer, Purcell Associates, Inc., Glastonbury, CT; and Scott C. Michalak, P.E., Levee Safety Program Manager, US Army Corps of Engineers, Concord, MA

10:30 am – 12:00 pm Third Annual National Dam Security Forum: New Tools
Moderated by Douglas L. Johnson, P.E., Washington State Department of Ecology

A CGE Model for Indirect Economic Impacts, Design and Deployment Issues
Miles K. Light, Ph.D., Research Faculty, University of Colorado, Boulder, CO

Cyber Security and Critical Infrastructure
Barbara Endicott-Popovsky, Ph.D., Director, Center for Information Assurance and Cybersecurity, University of Washington, Seattle, WA

Case Study: The Development, Testing and Implementation of Floating Counter Terrorism Barriers
Jeffrey S. Sanger, Executive Vice President, Worthington Products, Inc., Canton, OH

12:00 pm – 2:00 pm Awards Luncheon for all Attendees

2:00 pm – 3:30 pm Concurrent Session I: Reach Breach Model Nirvana!
Moderated by Arthur C. Miller, Ph.D., P.E., AECOM

A New Era in Inundation Mapping: Using GIS to Develop Dam Breach Modeling and Mapping
Scott M. Arends, P.E., C.F.M., Dam Safety/Water Resources Engineer, and Anthony K. Comerio, P.E., C.F.M., Water Resources Engineer, Hanson Professional Services Inc., Springfield, IL

Simulation of Midwest Flood 2008: Levee Breaching and Flood Propagation

Yafei Jia, Ph.D., Research Professor, Xiaobo Chao, Ph.D., Research Scientist, and AKM Azad Hossain, Ph.D., Post-Doctoral Research Associate, National Center for Computational Hydroscience and Engineering, University of Mississippi, University, MS

Dam Breach: 1-D vs 2-D Model and If 2-D is Fun, Why Not Cascade It?

Robert C. Tucker, P.E., Chief of Hydraulic Design Section, and Thomas M. Spencer, P.E., Hydraulic Engineer, US Army Corps of Engineers, Jacksonville, FL; Michael B. Kabling, Ph.D., C.F.M., P.E., Senior Engineer, Taylor Engineering, Inc., Jacksonville, FL

2:00 pm – 3:30 pm

Concurrent Session II: Fixes for Structurally-Challenged Dams

Moderated by James H. Weldon, Denver Water Department

Undermining of Spillway Chutes

Jeremy R. Young, P.E., Senior Engineer, and Gregory S. Paxson, P.E., Principal, Schnabel Engineering, Inc., West Chester, PA

Cracked in Two - Engineering Design and Construction of Stability Improvements for Alkali Silica Reactivity Effects in Roanoke Rapids Dam

Brian R. Reinicker, P.E., P.G., Senior Geotechnical Engineer, and William B. Stiller, P.E., Senior Structural Engineer, HDR/DTA, Charlotte, NC; John A. Cima, P.E., Consulting Geotechnical Engineer, Dominion Generation, Glen Allen, VA; Robin G. Charlwood, Ph.D., P.E., Principal, Robin Charlwood & Associates, PLLC, Edmonds, WA; and William H. Duke, P.E., Project Engineer, Federal Energy Regulatory Commission, Duluth, GA

Third Presentation TBA

2:00 pm – 3:30 pm

Concurrent Session III: Into Grunge? Dirty Dam Construction

Moderated by Randall P. Bass, P.E., Schnabel Engineering

Designing and Overseeing the Safe Execution of Controlled Blasting Work to Excavate Hard Rock and Mass Concrete In and Near Dams

Gordon F. Revey, P.Eng., Principal, REVEY Associates, Inc., Parker, CO

Cutoff Wall Construction by the Self-Hardening Slurry Method at the Herbert Hoover Dike, FL

Jeff Taylor, Project Manager, and Carlos Morales, Quality Control Manager, TREVIICOS Corporation, Charlestown, MA; and Dennis Blackwell, P.E., President, Blackwell Engineering, Ladson, SC

The Development of a Method Specification for Compaction of CDSM Spoil as Fill at San Pablo Dam

Sean M. Todaro, P.E., Associate Civil Engineer, and Atta B. Yiadom, P.E., Senior Civil Engineer, East Bay Municipal Utility District, Oakland, CA; Robert C. Kirby, P.E., G.E., Principal Engineer, Terra Engineers, Inc., San Francisco, CA; and Glen Gorski, P.E., Senior Project Manager, Kleinfelder, Inc., Oakland, CA

2:00 pm – 3:30 pm

Third Annual National Dam Security Forum: Research Results on Blast Effects Part One

Moderated by Dave Hinchliff, Bureau of Reclamation

Computational Study of Waterside Explosions Applied to Gravity Dams

James L. O'Daniel, Research Structural Engineer, Robert S. Browning, and Robert Walker, US Army Engineer Research and Development Center, Vicksburg, MS

Experimental and Numerical Studies of Blast Mitigation Measures for Embankment Dams
Denis D. Rickman, Research Physicist, Stephen Akers, Ph.D., Research Civil Engineer, Richard Rhett, Research Mechanical Engineer, Ramon Moral, Ph.D., Research Engineer; and Andreas Frank, Ph.D., Research Civil Engineer, US Army Engineer Research and Development Center, Vicksburg, MS

A Simplified Tool for Blast Damage Estimation
William M. Hossley, Mathematician, Landon K. Davis, , and Jose Rullan-Rodriguez, US Army Engineer Research and Development Center, Vicksburg, MS

3:30 pm – 4:00 pm Refreshment Break

4:00 pm – 5:30 pm Concurrent Session I: The Geotech Room: Prescriptions from the Doctors of Dirt

Moderated by James R. Talbot, P.E., Consulting Engineer

Base Soil Selections as the First Step to the Design of Protective Filters for Embankment Dams
Mark Pabst, P.E., Geotechnical Engineer, Bureau of Reclamation, Denver, CO; and John W. France, P.E., Vice President, URS Corporation, Denver, CO

Using Geotextiles to Repair Cracked Earth Dams
Benjamin C. Doerge, P.E., G.E., Geotechnical Engineer, USDA - NRCS, Fort Worth, TX; Rex Stambaugh, P.E., Design Engineer, USDA – NRCS, Lakewood, CO; John Chua P.E., State Design Engineer, USDA – NRCS, Phoenix, AZ; Trent Street, P.E., State Design Engineer, USDA – NRCS, Temple, TX; and Jim McHenry, P.E., Chief, Geotechnical and Dam Safety, US Army Corps of Engineers, Tula, OK

Piping Mechanism Study at Upriver Dam, Spokane, Washington
Gordon M. Denby, Ph.D., P.E., President, GeoEngineers, Inc., Redmond, WA; Larry Von Thun, P.E., Independent Dam Safety Consultant, Lakewood, CO; and Karen Terpak, P.E., Dam Safety Engineer, Spokane Water Department, Spokane, WA

4:00 pm – 5:30 pm Concurrent Session II: Put Your Money Where Your Risk Is
Moderated by Elena Sossenkina, Kleinfelder, Inc.

Using Risk Analysis to Prioritize Dam Repairs
Guy S. Lund, P.E., Principal Civil/Structural Engineer, URS Corporation, Denver, CO

Interim Risk Reduction Measures for High Risk Dams
Richard A. Britzman, P.E., Regional Dam Safety Program Manager, US Army Corps of Engineers, San Francisco, CA

Dam Safety Risk Analysis Using FEMA Floodplain Modeling and Mapping
Ted Perkins, P.E., Regional Engineer, Federal Emergency Management Agency, Bothell, WA

4:00 pm – 5:30 pm Concurrent Session III: Appurtenant Works
Moderated by Thomas J. Fitzgerald, P.E., Schnabel Engineering

Simply Brilliant!-New Approach for Isolating Spillway Gates
Frederick (Rick) Lux, III, P.E., President, Aubian Engineering, Inc., Greensboro, NC; Michael Dix, Project Engineer, Dix Corporation, Spokane, WA; Dustin Hale, Mechanical Engineer, FortisBC, Inc., South Slocan, BC, Canada; and Robert T. Indri, Project Engineer, Schnabel Engineering, Greensboro, NC

Necessity Is the Mother of Invention (aka Houston, We Have A Problem)

M. Leslie Boyd, P.E., Associate, and Dustin Mortensen, P.E., Project Manager, Freese & Nichols, Inc., Austin, TX; and Mike Lowe, P.E., Senior Dam Safety Engineer, Lower Colorado River Authority, Austin, TX

Emergency Release Design and Use of Plunger Valves for San Vicente Dam Raise Project

Ruark W. Dreher, P.E., Senior Hydro-Mechanical Engineer, and David Thompson, P.E., Senior Civil Engineer, MWH Americas, Inc., Bellevue, WA; Michael H. Jubran, P.E., Principal Civil Engineer, MWH Americas, Inc., San Diego, CA; Jeff Garvey, P.E., Principal Engineer, San Diego County Water Authority, San Diego, CA; Heribert Herold, Senior Engineer for Production Management, and Scipp Zeng, Regional Export Manager USA, VAG-Armaturen GmbH, Mannheim, Germany

4:00 pm – 5:00 pm

Third Annual National Dam Security Forum: Research Results on Blast Effects Part Two

Moderated by Patrick Diederich, Nebraska Department of Natural Resources

Reclamation Studies of Embankment Vulnerabilities

David Hinchliff, Civil Engineer/Technical Specialist, Bureau of Reclamation, Denver, CO

THURSDAY, SEPTEMBER 23

8:00 am – 4:00 pm

Field Trip to Cedar Falls and Snoqualmie Falls (Lunch included).
Sponsored in part by Puget Sound Energy