



30th USSD Annual Meeting and Conference

Collaborative Management of Integrated Watersheds

April 12-16, 2010

Monday, April 12

- 7:00 a.m. - 6:00 p.m. **Registration**
9:00 a.m. - 4:30 p.m. **Committee Meetings**
4:30 p.m. - 6:00 p.m. **2010 Annual Meeting of Members**

Presiding — USSD President **Daniel J. Hertel**, Barnard Construction Company, Inc.

ICOLD 2013 Meeting Status

Michael F. Rogers, Chair, ICOLD 2013 Planning Committee; and MWH

- 6:00 p.m. - 8:00 p.m. **Kick-off Reception/Exhibition Opening**

Tuesday, April 13

- 7:00 a.m. - 6:00 p.m. **Registration**
7:00 a.m. - 8:00 a.m. **Continental Breakfast in Exhibit Hall**
8:00 a.m. - 10:00 a.m. **Opening Plenary Session**

Moderator — **Daniel J. Hertel**

Introduction and Welcome

Daniel J. Hertel

Host Welcome and Reclamation Overview

TBA, Bureau of Reclamation

ICOLD Update

Jinsheng Jia, President, International Commission on Large Dams

Association of State Dam Safety Officials Update

David Gutierrez, ASDSO President; and California Department of Water Resources

Panel Discussion — The CALFED Storage Program: A New Era of Surface Storage in California

Bill Swanson, MWH (moderator)

Ron Ganzfried, Bureau of Reclamation

Don Rasmussen, California Department of Water Resources

Steve Roberts, California Department of Water Resources

- 10:00 a.m. - 10:30 a.m. **Break in Exhibit Hall**

- 10:30 a.m. - 12:00 noon **Opening Plenary Session (continued)**

Moderator — **Kenneth A. Steele**, Consultant.

Joint Federal Project — Multiagency Collaboration in Designing and Constructing a New Auxiliary Spillway at Folsom Dam, Folsom California

Brian Becker, Bureau of Reclamation; and **Kevin Knuuti**, Corps of Engineers

California's Levee Evaluations Program

Mike Inamine, California Department of Water Resources, **Sujan Punyamurthula**, URS Corporation; **Hamid Bonakdar** and **Steve Mahnke**, California Department of Water Resources; **Richard Millet**, URS Corporation; and **Pat Dell**, Neil O. Anderson & Associates, Inc.

A Consequence-Based Approach for Critical Infrastructure Prioritization E

Enrique Matheu, U.S. Department of Homeland Security; **David Dickinson**, Argonne National Laboratory; **William Hossley**, Corps of Engineers; **Michelle Yezierski**, SRA International; and **Cris Hughes**, U.S. Department of Homeland Security

- 12:00 noon - 1:15 p.m. **Lunch with Speaker in Exhibit Hall**

Moderator — **Daniel J. Hertel**

California Water Issues

Lester A. Snow, California Secretary for Natural Resources

- 1:30 p.m. - 3:00 p.m. **Concurrent Session 1A — Levees I**

Moderators — **Richard A. Millet**, URS Corporation; and **John Wolfhope**, Freese and Nichols, Inc.

Levee Certification Decision-Making: A Look at the Financial Impacts of Levee Certification/Decertification

Mario Glorioso and **Rajiv Matta**, AMEC Earth & Environmental, Inc.

Improving Levee Certification by Managing Geotechnical Data with an Enterprise Geographic Information System

B. Fritze and **M. Glorioso**, AMEC Earth & Environmental, Inc.

Steady-State Seepage Assumption for Levee Evaluations — Always Appropriate or Sometimes Overkill?

Les Harder and **Peter J. Hradilek**, HDR Engineering, Inc.

1:30 p.m. - 3:00 p.m. **Concurrent Session 1B — Seismic I**

Moderators — **Karen A. Knight**, Bureau of Reclamation; and **Robert Pyke**, ARCADIS G&M, Inc.

Design and Construction of Seismic Upgrades at San Pablo Dam Using CDSM
Robert C. Kirby and **Guilaine L. Roussel**, Terra Engineers, Inc.; **John A. Barneich**, GeoPentech, Inc.; and **Atta B. Yiadom** and **Sean M. Todaro**, East Bay Municipal Utility District

Scoggins Dam Seismic Performance and Remediation Alternatives
John Ballegeer and **Jie Yu**, Kleinfelder, Inc.; and **Tom VanderPlaats**, Clean Water Services

Earthquake Deformation Estimates for Risk Analysis
John W. France and **Christina Winckler**, URS Corporation; and **Ron Oaks**, Bureau of Reclamation

1:30 p.m. - 3:00 p.m. **Concurrent Session 1C — Concrete Dams**

Moderators — **William R. Fiedler**, Bureau of Reclamation; and **Guy S. Lund**, URS Corporation

Investigating the Potential for Multiple-Monolith Instability in a Gravity Dam Built Over Strongly Asymmetric Foundation Topography
Dom Galic, Bureau of Reclamation

LS-DYNA Modeling of Folsom Dam for Pier Modification Design Loads
Anastasia Johnson and **Phoebe Percell**, Bureau of Reclamation

Seismic Spillway Pier Modification Designs at Folsom Dam
Anastasia Johnson and **David Gold**, Bureau of Reclamation

1:30 p.m. - 3:00 p.m. **Concurrent Session 1D — Dams as Critical Infrastructure**

Moderators — **Walter L. Davis**, Seattle City Light; and **John C. Stoessel**, Southern California Edison Company

Development of Resilience-Enhancing Strategies Using Regional Exercises
Paula Scalingi, Center for Regional Disaster Resilience; **Enrique E. Matheu**, U.S. Department of Homeland Security; **Yazmin Seda-Sanabria**, Corps of Engineers; **Robert C. Hughes**, U.S. Department of Homeland Security; **Douglas J. Norton**, Battelle Memorial Institute; and **Alan M. Patterson**, U.S. Department of Homeland Security

Flood Modeling for the 2009 Dams Sector Exercise Series
Gregg N. Teasdale, **Barry Moran**, **Yazmin Seda-Sanabria** and **John W. Hunter**, Corps of Engineers

Modeling, Mapping, and Consequence (MMC) Production Center Efforts Supporting Critical Infrastructure
Barry P. Moran, **David A. Margo** and **Yazmin Seda-Sanabria**, Corps of Engineers

1:30 p.m. - 3:00 p.m. **Concurrent Session 1E — Environment**

Moderators — **Denise Bunte-Bisnett**, Santee Cooper; and **Patrick Mangan**, Bureau of Reclamation

Keeping an Aging Dam Performing in the 21st Century
John C. Stoessel and **Mike M. Knarr**, Southern California Edison Co.; **John Wilkes**, CARPI USA; and **Craig McElfresh**, MCS Construction, Inc.

Over-Water Geophysical Methods for Characterizing Reservoir Bottom Sediments for Dam Projects
Richard E. Sylwester and **Anthony H. Rice**, Golder Associates Inc.

Fast-Track Design to Expedite Lake Okeechobee and Everglades Restoration
Stephen L. Whiteside, **William K. Taylor**, **Michael F. Schmidt**, **Rebecca G. Ascoli**, and **Peter M. Chenevey**, CDM

3:00 p.m. - 3:30 p.m. **Break in Exhibit Hall**

3:30 p.m. - 5:30 p.m. **Concurrent Session 2A — Levees I (continued)**

Moderators — **Richard A. Millet** and **John Wolfhope**

Bringing Focus to Safety, Security, and Resiliency Issues for Levees
Herb Nakasone, Levee Sub-Sector Coordinating Council; **Lyman Shaffer**, SRA International; **Enrique E. Matheu**, U.S. Department of Homeland Security; and **Elizabeth Hocking**, Argonne National Laboratory

Assessing Levee System Performance Using Existing and Future Risk Analysis Tools
Michael K. Deering and **Christopher N. Dunn**, Corps of Engineers

Geotechnical Aspects of Levee Reliability Assessment
Gregory R. Fischer and **Hollie L. Ellis**, Shannon & Wilson, Inc.; and **Jeanne Stypula**, King County Washington

Levee Erosion Screening Process
Wilbur Huang, **Richard Millet**, **Scott Shewbridge**, **Juan Perri**, and **Juan Vargas**, URS Corporation; and **Mike Inamine** and **Steve Mahnke**, California Department of Water Resources

3:30 p.m. - 5:30 p.m. **Concurrent Session 2B — Seismic I (continued)**

Moderators — **Karen A. Knight** and **Robert Pyke**

Prioritizing Earthquake Response Using ShakeCast

Christopher Hill, Metropolitan Water District of Southern California; **Jianping Hu**, Los Angeles Department of Water and Power; **Dai Bui**, Los Angeles County Department of Public Works; and **William Fraser**, California Department of Water Resources

Laboratory Testing of an Alluvial Clayey and Silty Sand

Karina R. Dahl, **Jason T. DeJong** and **Ross W. Boulanger**, University of California, Davis; and **Michael W. Driller**, California Department of Water Resources

Non-Linear Numerical Modeling of Centrifuge Test Results for Embankments Underlain by Liquefied Soil

R. J. Armstrong, California Department of Water Resources; **R. W. Boulanger**, University of California, Davis; and **M. H. Beaty**, Beaty Engineering

Using Accelerograph Records to Estimate Shear Wave Velocity

Mohsen Beikae and **Christopher Hill**, Metropolitan Water District of Southern California

3:30 p.m.- 5:30 p.m. **Concurrent Session 2C — Concrete Dams (continued)**

Moderators — **William R. Fiedler** and **Guy S. Lund**

Mixture Proportioning Study for Massive Concrete Elements at the Folsom Dam JFP

Katie Bartojay, Bureau of Reclamation; and **William Halczak**, Corps of Engineers

The Bear Creek Dam, Alabama

Keith A. Ferguson, Consultant; and **Donald A. Bruce**, Geosystems, LP

Alkali-Silica Reactivity at Roanoke Rapids Dam — Unique Remedial Design Challenges

Brian R. Reinicker, HDR|DTA, Inc.; **William H. Duke**, Federal Energy Regulatory Commission; **John A. Cima**, Dominion Generation; and **Robin Charwood**, Robin Charwood & Associates, PLLC

Shake, Model, and Raise: Using Forced Vibration Testing to Calibrate Finite Element Models of San Vicente Dam

Phu Huynh and **Mark Schultz**, California Department of Water Resources; and **Zee Duron**, Harvey Mudd College

3:30 p.m. - 5:30 p.m. **Concurrent Session 2D — Dams as Critical Infrastructure (continued)**

Moderators — **Walter L. Davis** and **John C. Stoessel**

Consequence Estimation for Critical Infrastructure Risk Management

Jason T. Needham and **Yazmin Seda-Sanabria**, Corps of Engineers; and **David S. Bowles**, Utah State University and RAC Engineers & Economists

Addressing Cybersecurity Issues for Dams

Hal Dalson, Dams Sector Coordinating Council; **Enrique E. Matheu**, U.S. Department of Homeland Security; **Yazmin Seda-Sanabria** and **Andres Lopez-Esquerria**, Corps of Engineers; and **Kristen M. Baumgartner**, U.S. Department of Homeland Security

Incorporating Critical Infrastructure Interdependencies into Dam Failure Consequence Assessments

Steve Folga, **Timothy Allison** and **James P. Peerenboom**, Argonne National Laboratory; **John P. Carr**, Corps of Engineers; **Enrique E. Matheu**, U.S. Department of Homeland Security; and **Yazmin Seda-Sanabria**, Corps of Engineers

Performance of Damaged Soil-Concrete Wraparound Dam Sections Under Dynamic Loading

Yuliya Kanarska, **Ilya Lomov**, **Lee Glascoe**, **Joseph Morris** and **Tarabay Antoun**, Lawrence Livermore National Laboratory; **Robert Hall** and **Stanley Woodson**, Corps of Engineers; **John Fortune** and **Mary Ellen Hynes**, U.S. Department of Homeland Security

3:30 p.m. - 5:30 p.m. **Concurrent Session 2E — Environment (continued)**

Moderators — **Denise Bunte-Bisnett** and **Patrick Mangan**

Geotechnical Design and Construction of the Salinas River Diversion Facility

Theodore B. Feldsher and **Jiaer Wu**, URS Corporation

Changes to Battle Creek Hydroelectric Project to Facilitate Fish Passage

Thomas E. Hepler, Bureau of Reclamation

The Environmental Impact Assessment for AVCE, the First Pumped-Storage Hydroelectric Power Plant in Slovenia

N. Smolar-Zvanut, Institute for Water, Republic of Slovenia; and **A. Rejec**, Soske Elektranne Nova Gorica, Slovenia

Quantifying Sustainability: Roller Compacted Concrete versus Zoned Earth Embankment Dam

Dennis J. Hogan, Black & Veatch Corporation

5:30 p.m.- 7:30 p.m. **Poster Session, Exhibition and Reception**

Geotextile — Not for My Dam Seepage Problem

Jeffrey M. Bair, Black & Veatch Corporation; and **Susan L. Peterson**, Forest Service, USDA

Climate Change Impact on Hydrological Extremes in Kaidu River Basin, China

M. A. Basher, Bangladesh Water Development Board; **Tie Liu**, Catholic University of Leuven, Belgium; **M. A. Kabir**, Monash University, Australia; and **Victor Ntegeka** and **Patrick Willems**, Catholic University of Leuven, Belgium

A Simplified, Probability-Based Analysis for Small Embankment Dams

Rachael Bisnett, Purdue University

A Prototype-Scaled Rock Scour Prediction Model

E.F.R. Bollaert, AquaVision Engineering Ltd., Switzerland

Integrity Testing of Post-Tensioned Steel Trunnion Rods

Mark Cesare, FDH Engineering, Inc.

Studying Salinity Phenomenon of Ajichay Earth Dam (Vanyar, Azerbaijan, Iran) in Relation to Mineral Dissolution Rate

E. Ghanbari, Islamic Azad University, Iran

Analysis of Sediment Dynamics in Latrobe River Basin, Australia, Using a Process-Based Distributed Modelling Approach

Md. A. Kabir and **D. Dutta**, Monash University, Australia

Evaluation of Cutoff Walls Impact on Groundwater Recharge — Natomas Levee Improvement Project

Lynn O’Leary, **Elena Sossenkina** and **Rebecca Allen**, Kleinfelder, Inc.

Evaluation of Raising Maroon Earthfill Dam

Masoud Oulapour, Chamran University of Ahvaz; and **Saber Alidadi**, Khuzestan Water & Power Authority

Relation Between K Factors and Failure Rates for Various Dam Gate Components

Robert C. Patev, Corps of Engineers; and **Chandra S. Putcha** and **Jawaad Meerza**, California State University, Fullerton

Lugeon Test Interpretation, Revisited

Camilo Quiñones-Rozo, URS Corporation

Collaborative Management of Invasive Species on the Santee Cooper Lakes System

Casey Welch, **Larry McCord** and **Denise Bunte-Bisnett**, Santee Cooper

Long-Term Monitoring of the Vuhred Concrete Dam

Pavel Žvanut, Slovenian National Building and Civil Engineering Institute, Slovenia

Wednesday, April 14

7:00 a.m. - 5:30 p.m. **Registration**

7:00 a.m. - 8:00 a.m. **Continental Breakfast in Exhibit Hall**

8:00 - 10:00 a.m. **Concurrent Session 3A — Levees II**

Moderators — **Peter J. Hradilek** and **Les Harder**, HDR Engineering, Inc.

Geotechnical Evaluation of California’s Central Valley Urban Levees

Richard Millet and **Juan Vargas**, URS Corporation; and **Mike Inamine**, California Department of Water Resources

Using Integrated Document and GIS Databases for Geotechnical Levee Evaluation

Franz Campero, **Nagesh Malyala**, **Nadira Kabir** and **Ben Brezing**, URS Corporation

Levee Subsurface Investigation Using Geophysics, Geomorphology, and Conventional Investigative Methods

Juan C. Sorensen and **Khaled Chowdhury**, URS Corporation

Conceptual Levee Repair Alternatives and Cost Estimating

Heinz Berger, **Jay Kamine** and **Richard Millet**, URS Corporation; and **Mike Inamine** and **Steve Mahnke**, California Department of Water Resources

8:00 a.m. - 10:00 a.m. **Concurrent Session 3B — Embankment Dams I**

Moderators — **Paul Shiers**, PB Americas, Inc.; and **Ray E. Martin**, Ray E. Martin, LLC

The Use of Electronic Data Analysis and 3-D Modeling to Make Us Smarter

William D. Spencer, **Brett Fritze** and **David C. Greene**, AMEC Earth & Environmental, Inc.; and **Tommy A. Haskins**, Corps of Engineers

Geotechnical Investigations at Martis Creek Dam, Truckee, CA

Verne W. Brown, Corps of Engineers

Flat-Plate Slope Protection for Hurricane Surge Drawdown Conditions

J. Dominic Molyneux and **Dennis J. Hogan**, Black & Veatch Corporation

Embankment Modifications at Folsom Reservoir

Greg Eddy, **Ron Oaks** and **M. Jonathan Harris**, Bureau of Reclamation

8:00 a.m. - 10:00 a.m. **Concurrent Session 3C — Seismic II**

Moderators — **Robin G. Charlwood**, Robin Charlwood & Associates; and **Keith A. Ferguson**, HDR Engineering, Inc.

Dynamic Characterization of a Large Multiple-Arch Dam

E. Ellis and **Z. Duron**, Harvey Mudd College; and **N. Von Gersdorff** and **M. Knarr**, Southern California Edison Company

Numerical Model Validation for Large Concrete Gravity Dams

Florian Scheulen, Harvey Mudd College; **Nicolas Von Gersdorff**, Southern California Edison Company; **Ziyad Duron**, Harvey Mudd College; and **Mike Knarr**, Southern California Edison Company

Seismic Evaluation of Two Thin Arch Dams

Vik Iso-Ahola, **Bashar Sudah** and **Glenn Tarbox**, MWH Americas, Inc.; and **Christopher Hill**, Metropolitan Water District of Southern California

Seismic Evaluation of Semi-Embedded Outlet Tower

Michael H. Beaty, Beaty Engineering; and **Michael Ruthford** and **Donald E. Yule**, Corps of Engineers

8:00 a.m. - 10:00 a.m. **Concurrent Session 3D — Dam Safety I**

Moderators — **Jeffrey A. Shoaf**, San Diego County Water Authority; and **J. Dominic Molyneux**, Black & Veatch Corporation

Falls Dam Stoney Gate Operability

Mark J. Gross, Alcoa Power Generating Inc.; **Paul F. Shiers**, **Anthony W. Plizga** and **Marc D. Buratto**, PB Americas, Inc.; and **John C. Lyon**, Federal Energy Regulatory Commission

Hebgen Intake Stoplog Failure — Lessons Learned

David W. Lord and **Kathleen Clarkson**, Federal Energy Regulatory Commission; and **Carrie Harris** and **Jim Stilwell**, PPL Montana, LLC

Will You Be Able to Access Your Dam During Emergencies?

Jeffrey Racicot and **David Lord**, Federal Energy Regulatory Commission

Keeping Up with Instrumentation and Information Technology Changes at Two Dams

Hollie L. Ellis, Shannon & Wilson, Inc.; **Walter L. Davis**, Seattle City Light; and **Richard E. Smith**, Corps of Engineers

8:00 a.m. - 10:00 a.m. **Concurrent Session 3E — Planning I**

Moderators — **Manoshree Sundaram**, Federal Energy Regulatory Commission; and **Daniel L. Johnson**, Tetra Tech Inc.

The Need for an Integrated Approach to Addressing California's Water Management Challenges

Robert Pyke and **Peter Wijsman**, ARCADIS G&M, Inc.

The Columbia River Treaty: A Model for International Water Resource Collaboration

James D. Barton, Corps of Engineers

Building from Regional to Statewide Planning: The Texas Approach to Water Planning

Tom Gooch and **Mike Reedy**, Freese and Nichols, Inc.; and **Carolyn Brittin**, Texas Water Development Board

Smart Water Resources Development through Collaborative Processes

Uli Kappus, Parsons Water & Infrastructure, Inc.; **Ken Steele**, Consultant; and **Kelly Rodgers**, San Diego County Water Authority

10:00 a.m. - 10:30 a.m. **Break in Exhibit Hall**

10:30 a.m. - 12:00 noon **Concurrent Session 4A — Levees II**

Moderators — **Peter J. Hradilek** and **Les Harder**, HDR Engineering, Inc.

Remediation Measures for the Natomas Levee System as Part the Natomas Levee Improvement Program, Sacramento, California

Raymond Costa, Consultant; **Les Harder**, HDR Engineering, Inc.; **Mark Stanley**, Kleinfelder, Inc; and **Edward Ketchum** and **Mary Perlea**, Corps of Engineers

Preventing Failure of a Large Canal by Using Staunching to Arrest Leakage

Peter Amos and **Andrew Kilby**, Damwatch Services; and **Tim Mills**, Meridian Energy Ltd

A SAFR Approach to Levee Inspections: Identifying Hidden Penetrations through Subsurface Investigations

Kim Tremaine, Argus Technologies

10:30 a.m. - 12:00 noon **Concurrent Session 4B — Embankment Dams I (continued)**

Moderators — **Paul Shiers** and **Ray E. Martin**

Cause of an Embankment Dam Sinkhole

John Lyon, Federal Energy Regulatory Commission; **Ray Barham**, Alcoa Power Generation Inc.; and **Paul Shiers**, **Kevin Finn** and **Michael McCaffrey**, PB Americas, Inc.

Rebuilding an Embankment Dam at a Sinkhole

John Lyon, Federal Energy Regulatory Commission; **Ray Barham**, Alcoa Power Generation Inc.; and **Paul Shiers**, **Kevin Finn** and **Bryce Mochrie**, PB Americas, Inc.

The Auxiliary Make-Up Lake Dam — 20 years Later

Scott R. Brand and **Paul R. Zaman**, Black & Veatch Corporation; and **Gary Van Riessen**, Consulting Engineer

10:30 a.m. - 12:00 noon **Concurrent Session 4C — Seismic II** (continued)

Moderators — **Robin G. Charlwood** and **Keith A. Ferguson**

Use of Hi-Resolution LiDAR in Discovering the Polaris Fault, Martis Creek Dam, Truckee, California

Lewis E. Hunter and **Ronn S. Rose**, Corps of Engineers; **Bruce R. Hilton** and **William McCormick**, Kleinfelder, Inc.; and **Todd Crampton**, AMEC Geomatrix, Inc.

Seismic Hazard Characterization of the Kern Canyon Fault for Isabella Dam, California

Keith I. Kelson, Fugro-William Lettis & Associates Inc.; **David T. Simpson**, URS Corporation; **Ronn S. Rose** and **David C. Serafini**, Corps of Engineers

10:30 a.m. - 12:00 noon **Concurrent Session 4D — Dam Safety I** (continued)

Moderators — **Jeffrey A. Shoaf** and **J. Dominic Molyneux**

Dam Hillside Sloughing Remediation Planning

Bryce Mochrie, PB Power; **Andrew Datsko** and **Jacob Vozel**, Allegheny Energy Supply; and **Stefan Schadinger**, PB Power

Evaluation of Landslides in Reservoir above Proposed 165M High Dam, Pervari, Turkey

Ray E. Martin, Consulting Engineer; and **Eric B. Rehwoldt**, Schnabel Engineering, Inc.

10:30 a.m. - 12:00 noon **Concurrent Session 4E — Planning I** (continued)

Moderators — **Manoshree Sundaram** and **Daniel L. Johnson**

Missouri River Recovery Program — Collaborative Partnerships Lead to Success

Teresa Reinig and **Mary Roth**, Corps of Engineers

Collaborative Management of the Kaskaskia Watershed

Joan Stemler, Corps of Engineers

A Conceptual Cost Estimation Model for Hydroelectric Power Plant Projects

Murat Gunduz, Middle East Technical University; and **Haci Bayram Sahin**, HHA Engineering Ltd. Co., Turkey

12:00 noon - 1:15 p.m. **Lunch with Speaker in Exhibit Hall**

Moderator — **Daniel J. Hertel**

Donald R. Glaser, Director, Mid Pacific Region, Bureau of Reclamation

1:30 p.m. - 3:00 p.m. **Concurrent Session 5A — Dam Rehabilitation**

Moderators — **Wayne D. Edwards**, W. D. Edwards Consulting, LLC; and **Thomas E. Hepler**, Bureau of Reclamation

Howard Hanson Dam Right Abutment Seepage Performance Issues and Interim Repairs

Richard E. Smith, **Robert E. Romocki** and **Dennis A. Fischer**, Corps of Engineers

Assessment and Retrofit Design of Aging Conduits in Dams

Gregory L. Hebel and **James J. Daly**, Golder Associates Inc.

Chicago Sanitary and Ship Canal at Lockport Rehabilitation Case Study

Brant Jones, **Thomas Mack** and **Amy Moore**, Corps of Engineers

1:30 p.m. - 3:00 p.m. **Concurrent Session 5B — Embankment Dams II**

Moderators — **B. Alex Grenoble**, HDR Engineering, Inc.; and **John Paxton**, URS Corporation

Internal Erosion and Impact of Erosion Resistance

G. J. Hanson, **R. D. Tejral**, **S. L. Hunt** and **D. M. Temple**, Agricultural Research Service, USDA

Techniques for Prevention and Detection of Leakage in Dams and Reservoirs

Iván A. Contreras, Barr Engineering Company; and **Samuel H. Hernández**, Desurca, Venezuela

A GIS Based Approach in Assessing Embankment Dams

Christopher L. Wang, Federal Energy Regulatory Commission; and **Nancy M. Ferris**, Corps of Engineers

1:30 p.m. - 3:00 p.m. **Concurrent Session 5C — Hydrology and Hydraulics**

Moderators — **Jerry W. Webb**, Corps of Engineers; and **Arturo L. Ressi-Di-Cervia**, Kiewit Construction Company

USACE Fort Worth District Dams and Lakes: Lessons Learned from the 2007 Flood Events

José Hernández and **Fred Jensen**, Corps of Engineers

Annual Exceedance Probability of Probable Maximum Flood Using a Stochastic Hydrologic Model

Jay B. Smith, Tetra Tech, Inc.; **Bruce L. Barker**, MGS Engineering Consultants, Inc.; and **Lloyd M. Pernela**, Puget Sound Energy

Firm Yield Computations in HEC-ResSim

Joan Klipsch, **Chan Modini** and **Beth Faber**, Corps of Engineers

1:30 p.m. - 3:00 p.m. **Concurrent Session 5D — Risk**

Moderators — **Daniel W. Osmun**, Bureau of Reclamation; and **Douglas D. Boyer**, Federal Energy Regulatory Commission

Dams as Systems — A Holistic Approach to Dam Safety

Patrick J. Regan, Federal Energy Regulatory Commission

Overview of the Isabella Dam Potential Failure Modes Workshop

David C. Serafini and **Ronn S. Rose**, Corps of Engineers

Update for Screening Portfolio Risk Analysis for U.S. Army Corps of Engineers Dams

Jeffrey T. McClenathan, Corps of Engineers

1:30 p.m. - 3:00 p.m. **Concurrent Session 5E — Planning II**

Moderators — **Christopher Hill**, Metropolitan Water District of Southern California; and **Mark Schultz**, California Department of Water Resources

Getting Creative with Public Outreach — When You Can't Just Buy the Mailing List

Jeffrey A. Shoaf and **Gina Molise**, San Diego County Water Authority; and **Jessica Berlin**, Katz & Associates, Inc.

Optimizing the North Metro Reservoir Complex, Commerce City, Colorado

Richard Tocher, Tetra Tech, Inc.; and **Mike Miller**, Denver Water

Climate Change and the Payette River Basin

David J. Hoekema, **Xin Jin** and **Venkataramana Sridhar**, Boise State University

3:00 p.m. - 3:30 p.m. **Break in Exhibit Hall**

3:30 p.m. - 5:30 p.m. **Concurrent Session 6A — Dam Decommissioning**

Moderators — **Wayne D. Edwards** and **Thomas E. Hepler**

Removal of Savage Rapids Diversion Dam — Part Two

Richard D. Benik, Bureau of Reclamation

Hall Brook Dam Removal: A Case Study in Sediment Management

David M. Leone, **Gregory W. Hunt** and **William H. Hover**, GZA GeoEnvironmental, Inc.

Removal of Bluebird Dam at Rocky Mountain National Park Colorado

Charles Karpowicz, Water Resources Management; and **Jeff Connor** and **Joe Arnold**, National Park Service

The Klamath River Dam Removal: A Review of the Costs, Financing and Risks of this Landmark Restoration Program

Ben Swann, **Chris Park** and **Dave Auslam**, CDM

3:30 p.m. - 5:30 p.m. **Concurrent Session 6B — Embankment Dams II**
(continued)

Moderators — **B. Alex Grenoble** and **John Paxton**

Applicability of the Existing Empirical Method for Evaluating Shear Wave Velocity in Core Zone to Korean Dam Sites

Ik-Soo Ha and **Byung-Hyun Oh**, Korea Water Resources Corporation

Mixed-in-Place and Cutter-Soil-Mixing Methods Applied on Dams and Dikes

Ulli Wiedenmann, Bauer Spezialtiefbau GmbH; and **Martin Hoegg**, Coastal Caisson Corp.

Construction of a Deep Cut-Off for a New Power House

Arturo L. Ressi-Di-Cervia, Kiewit Construction Company

Vibrating Beam Slurry Walls for Small Dams

William S. Heckman and **Allen Sehn**, Hayward Baker Inc.

3:30 p.m. - 5:30 p.m. **Concurrent Session 6C — Hydrology and Hydraulics** (continued)

Moderators — **Jerry W. Webb** and **Arturo L. Ressi-Di-Cervia**

A Synthetic Method for Assessing the Risk of Small Dam Flooding

Stefania Grimaldi, Politecnico di Torino; **Roberto Del Vesco** and **Davide Patrocco**, Direzione Opere Pubbliche; and **Davide Poggi**, Politecnico di Torino, Italy

Selection of Breach Parameters for the Herbert Hoover Dike (Very-Large Storage Low-Head Reservoir)

Robert C. Tucker and **Thomas M. Spencer**, Corps of Engineers

Relating Climate Projections to Flood Control Constraints on Reservoir Operations

Levi D. Brekke, Bureau of Reclamation

A Risk-Based Approach to Assessing Climate Change Impacts on Dams & Reservoirs

Jamie C. Loucks and **Nicholas Pansic**, MWH Americas, Inc.

3:30 p.m. - 5:00 p.m. **Concurrent Session 6D — Risk** (continued)

Moderators — **Daniel W. Osmun** and **Douglas D. Boyer**

Risk Based Evaluation of the Seismic Performance of Embankment Dams and Levees

Robert Pyke, Arcadis G&M, Inc.; and **Martin W. McCann, Jr.**, Jack R. Benjamin & Associates

A Risk-Based Reevaluation of Operating Restrictions to Reduce the Risk of Earthquake-induced Dam Failure

David S. Bowles and **Loren R. Anderson**, Utah State University and RAC Engineers & Economists; **Michael E. Ruthford** and **David C. Serafini**, Corps of Engineers; and **Sanjay S. Chauhan**, Utah State University and RAC Engineers & Economists

Prediction Hydrodynamic Force of Dam Break Using Probabilistic Time Series Analysis

Gholamreza Shams, Delft University of Technology; **Giovanni Cuomo**, HR Wallingford; and **Sebastian Jonkman**, **Pieter van Gelder** and **J.K. Vrijling**, Delft University of Technology

3:30 p.m. - 5:30 p.m. **Concurrent Session 6E — Planning II** (continued)

Moderators — **Christopher Hill** and **Mark Schultz**

Fort Worth's River "Vision" — Combining Project Sponsors behind Combined Goals

Stephen L. Whiteside and **Michael T. Oleson**, CDM

How to Successfully Navigate through the Environmental Maze of Permitting and Mitigation: The San Pablo Dam Seismic Upgrades Project

David Katzev and **Atta Yiadom**, East Bay Municipal Utility District

Downtown Guadalupe River Project

Brandon Muncy, Corps of Engineers; **Thomas MacDonald**, **Sujan Punyamurthula** and **Juan Vargas**, URS Corporation

Satellite Positioning and Monitoring Solutions for Dam, Levee and Other Water Retention Systems

Paul Drummond, Trimble Navigation Ltd.

7:00 p.m. - 7:45 p.m. **Reception**

7:45 p.m. - 10:00 p.m. **Dinner and USSD Awards Presentations**

Moderator — **Daniel J. Hertel**

Speaker — **Michael L. Connor**, Commissioner, Bureau of Reclamation, Washington, DC

Thursday, April 15

7:30 a.m. - 8:00 a.m. **Workshop Registration**

8:00 a.m. - 9:30 a.m. **Folsom Dam Special Session**

Moderator — **Stephen L. Whiteside**, CDM

From Approach to Exit: Modeling the Proposed Folsom Dam Auxiliary Spillway

Nathan C. Cox and **Harold C. Huff**, Corps of Engineers

Physical Modeling of the Folsom Dam Tailwater Confluence Area

Robert F. Einhellig, **Connie D. Svoboda** and **K. Warren Frizell**, Bureau of Reclamation; and **Nathan C. Cox**, Corps of Engineers

Folsom Dam Safety of Dams Modifications — Auxiliary Spillway Phase I and Phase II

Ernest Hall and **William Dressel**, Bureau of Reclamation

9:30 a.m. - 10:00 a.m. **Break**

10:00 a.m. - 5:00 p.m. **Concurrent Workshop I — Case Histories in Dam Safety Risk Assessment**

Moderator — **David S. Bowles**, Utah State University

10:00 a.m. - 5:00 p.m. **Concurrent Workshop II — Impoundments and Tailings Dams**

Moderator — **Denise Bunte-Bisnett**, Santee Cooper

10:00 a.m. - 5:00 p.m. **Field Tour and Lunch — Folsom Dam**

Friday, April 16

8:00 a.m. - 5:00 p.m. **Field Tour and Lunch — University of California, Davis; Monticello Dam; Napa Valley**

(Revised March 10, 2010)