



# 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*

**Brian Becker**, 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**

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

- 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 Elektrarne 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**

*California Water Issues*

**Mark W. Cowin**, Director, California Department of Water Resources

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 — **Robert Quint**, Deputy 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 17, 2010)