



# 29th USSD Annual Meeting and Conference

*Managing Our Water Retention Systems*

April 20-24, 2009

## Monday, April 20

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.     **2009 Annual Meeting of Members**

Presiding — USSD President **Kenneth A. Steele**, Consultant

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

## Tuesday, April 21

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 — **Kenneth A. Steele**

*Introduction and Welcome*  
**Kenneth A. Steele**

*Host Welcome*  
**TBA**, Corps of Engineers

*ICOLD Update*  
**Arthur H. Walz, Jr.**, Gannett Fleming, Inc.

*World Bank Responses to Natural Disasters*  
**Alessandro Palmieri**, World Bank

*Duke Energy's Embankment Seismic Stability Improvements in the Carolinas*  
**Bradley T. Keaton**, Duke Energy Carolinas, LLC; and **B. Alex Grenoble**, Devine Tarbell & Associates

*The National Levee Safety Program*  
**Eric C. Halpin**, Corps of Engineers

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

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

Moderator — **Daniel L. Johnson**, GEI Consultants, Inc.

*Is DAM Such a Bad Word? A Review of the Perception of Dams*

**Kevin Griebenow** and **Manoshree Sundaram**, Federal Energy Regulatory Commission

*The State of California's Urban Levee Evaluation Program: An Overview*

**Rich Millet**, URS Corporation; **Mike Inamine** and **Steve Mahnke**, California Department of Water Resources; **Sujan Punyamurthula** and **Juan Vargas**, URS Corporation

*The 50 Year Myth — An Examination of Dam Failure vs. Age of Dams*

**Patrick J. Regan**, Federal Energy Regulatory Commission

12:00 noon - 1:15 p.m.    **Lunch**

Moderator — **Kenneth A. Steele**

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

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

Moderators — **Michael F. Rogers**, MWH; and **William R. Fiedler**, Bureau of Reclamation

*Center Hill Dam — Mitigating Effects of Alkali Aggregate Reaction with Vertical Slots*

**Ken Hull**, Corps of Engineers

*Post-Tensioned Trunnion Anchor Rod Failures at West Point Dam*

**George V. Poiroux** and **Davood Tashbin**, Corps of Engineers

*A Method of Evaluating the Safety of Deteriorating Buttress Dams*

**Guy S. Lund** and **Michael S. Ledesma**, URS Corporation

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

Moderators — **Jerry W. Webb**, Corps of Engineers; and **James E. Lindell**, MWH

*Calibrating a Probable Maximum Flood Simulation on the Lower Susquehanna River*

**Ted Rineer**, Safe Harbor Water Power Corp.; and **Bryce Mochrie, Jay Greska** and **C. E. Tsai**, PB Power

*Spillway Widening Optimization for Passing Increased PMF*

**Vik Iso-Ahola, James Lindell** and **John C. Haapala**, MWH Americas, Inc.

*The (Cost, Time, ...) Benefits of Using CFD Hydraulic Models for Various Dam Projects*

**Mike Phillips** and **Frank Lan**, URS Corporation

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

Moderators — **James Hummert**, URS Corporation; and **Jay N. Stateler**, Bureau of Reclamation

*A Public Alert System for Dam Discharge Using Wireless Sensor Network*

**Sea Hoon Kim**, Korea Water Resources Corporation

*Event Driven Performance Monitoring System, John Day Lock and Dam, Columbia River, Oregon-Washington, USA*

**David H. Scofield**, Corps of Engineers; **Barry Myers**, Engineered Monitoring Solutions, and **Salina Hart**, Corps of Engineers

*Excavation Near Critical Dam Infrastructure at Howard Hanson Dam*

**Richard E. Smith** and **Thomas J. Danielson**, Corps of Engineers; and **William A. Hultman**, Shannon & Wilson, Inc.

1:30 p.m. - 3:00 p.m.      **Concurrent Session 1D — Rock Mechanics I**

Moderators — **Terrence E. Arnold**, MWH; and **John R. France**, URS Corporation

*Characterization of Dam Foundation Blocks Using Digital Photogrammetric Mapping and Borehole Geophysical Logging to Create Comprehensive 3D Foundation Models*

**P. Shaffner** and **R. Heisler**, Bureau of Reclamation

*Evaluation of Shear Strength of Mélange Foundation at Calaveras Dam*

**John W. Roadifer** and **Michael P. Forrest**, URS Corporation; and **Eric Lindquist**, Berti-Lindquist Consulting Engineers, Inc.

*Auxiliary Spillway Rock Cut Stability, Lake Fort Smith Dam*

**Christopher Groves** and **Scott Garbs**, Shannon & Wilson

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

3:30 p.m. - 5:30 p.m.      **Concurrent Session 2A — Concrete Dams II**

Moderators — **Michael F. Rogers**, MWH; and **William R. Fiedler**, Bureau of Reclamation

*RCC Trends in Early 21st Century Mid-Size Dams in the U.S.*

**Fares Y. Abdo**, Portland Cement Association

*Staged Construction Thermal Analysis for San Vicente Dam Raise Project*

**Glenn Tarbox, Bashar Sudah, Vik Iso-Ahola** and **Michael F. Rogers**, MWH Americas, Inc.; and **Jim Zhou**, San Diego County Water Authority

*RCC Construction Issues at the New Upper Reservoir Taum Sauk Pump Storage Project*

**Luis Gaekel, Charles Weatherford** and **John P. Osterle**, Paul C. Rizzo Associates; and **Tom Hollenkamp**, AmerenUE

*Portugues Dam Roller Compacted Concrete Mix Design and Testing Program*

**James Mangold, David A. Dollar** and **James K. Hinds**, Corps of Engineers

3:30 p.m. - 5:30 p.m.      **Concurrent Session 2B — Hydrology and Hydraulics II**

Moderators — **Jerry W. Webb**, Corps of Engineers; and **James E. Lindell**, MWH

*Scour Upstream of Dam Piers*

**Amanda Sutter, Edward Demsky, Kenneth Koller** and **Michael Navin**, Corps of Engineers

*Monte Carlo Simulation for Sensitivity Statistics for Geometry of Plunge Pools Downstream of Ski-Jump Bucket Spillway*

**G. Shams Ghahfarokhi, P.H.A.J.M van Gelder, H. Vrijling** and **A. Amiri Simkooi**, Delft University of Technology

*Integration of Water Management into Risk Reduction: Bluestone Dam*

**James M. Schray** and **Theresa A. Dawson**, Corps of Engineers

*Upgrading Your Dam — Preparedness Planning for Spartanburg Water's Lake Blalock Dam*

**Robert Osborne, Randy Boyce** and **Greg Zamensky**, Black & Veatch Corporation; **Aled Hughes**, MWH; and **Roger Rhodes** and **Ken Tuck**, Spartanburg Water

3:30 p.m.- 5:30 p.m.      **Concurrent Session 2C — Embankment Dams I**

Moderators — **B. Alex Grenoble**, Devine Tarbell & Associates, Inc.; and **Manoshree Sundaram**, Federal Energy Regulatory Commission

*Seepage Concerns at Keystone Dam, OK*

**D. Wade Anderson, Randel J. Mead** and **James L. McHenry**, Corps of Engineers

*Optimizing the Placement of Grout Curtains: A Minimally Invasive Approach at Clearwater Dam*

**Val Kofoed**, Willowstick Technologies

*Herbert Hoover Dike Rehabilitation: Seepage Design Concepts and Challenges*

**Jacob Davis**, **Erich Guy** and **Ron Nettles**, Corps of Engineers

*Comprehensive Foundation Rehabilitation at Bear Creek Dam*

**Conrad H. Ginther** and **John E. Charlton**, Paul C. Rizzo Associates

3:30 p.m. - 5:30 p.m.      **Concurrent Session 2D — Rock Mechanics II**

Moderators — **John W. France**, URS Corporation; and **Terrence E. Arnold**, MWH

*Risk Evaluation of Dams on Karst Foundations*

**Jeffrey A. Schaefer**, Corps of Engineers

*Dams on Carbonate Foundations in the United States*

**Arthur H. Walz, Jr.** and **David B. Wilson**, Gannett Fleming Inc.

*Characterization of Geologic Features Affecting Seepage through Carbonate Dam Foundations*

**Michael A. Knight** and **William M. Roman**, Gannett Fleming, Inc.

*Design, Construction and Performance of Seepage Barriers for Dams on Carbonate Foundations*

**Donald A. Bruce**, Geosystems, L.P.; and **Trent L. Dreese** and **David B. Wilson**, Gannett Fleming, Inc.

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

*Outlet Tunnel Slab Damage at Seven Oaks Dam*

**Chris Bahner**, WEST Consultants, Inc.

*Challenges and Opportunities in Rehabilitating and Enlarging a 100-Year-Old On-Channel Reservoir*

**Matthew Bliss**, **Steve Whiteside** and **Kelly DiNatale**, CDM; **Travis Smith**, San Luis Valley Irrigation District; and **Don Deere**, Deere and Ault

*Seismic Input Motion Uncertainty for Embankment Dams*

**Gilles Bureau**, **William A. Rettberg** and **Steve Verigin**, GEI Consultants, Inc.

*Multi-Use of a Rehabilitated Reservoir for Improved River Administration, Flood Control, Agricultural, Domestic, Environmental and Recreational Benefits*

**Kelly DiNatale** and **Matthew Bliss**, CDM; and **Travis Smith**, San Luis Valley Irrigation District

*Leakage from a Drinking Water Reservoir — How Much Is Too Much?*

**Sergio Gaitan** and **Steve Whiteside**, CDM

*Inverse Calculation of Shear Wave Velocity of Rockfill Zone Using Microearthquake Records*

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

*Risk Analysis for Shasta Dam Raise*

**Thomas E. Hepler**, **Bill Fiedler** and **John LaBoon**, Bureau of Reclamation

*Seepage, Rock Stability & Bank Stabilization, Abiquiu Dam and Reservoir, New Mexico*

**S. R. Hess-Brittelle**, Corps of Engineers

*Strength and Stability Evaluation of the Hinze Dam Lower Intake Tower*

**Scott L. Jones**, **Brad Dawson** and **David Hughes**, URS Corporation

*Seismic Fragility Assessment of Concrete Gravity Dams*

**Soha Mirzahosseini Kashani** and **Mohsen Ghaemian**, Sharif University of Technology

*Critical Infrastructure and Key Resource Information Sharing Environment Implementation*

**Carlos Kizzee**, U.S. Department of Homeland Security; and **Tracy Swain**, CSC

*Environmentally Considerate Lubricants for Dams*

**Patrick Laemmle** and **Peter Rohrbach**, PANOLIN AG

*Control System Cyber Security Self-Assessment Tool (Cs2sat)*

**Seán Paul McGurk**, U.S. Department of Homeland Security

*Rehabilitation of Marmet Dam — Condition Assessment Based Evaluation of Risk and Reliability*

**Chirag D. Mehta** and **Perry R. Cole**, INCA Engineers, Inc.; and **Anthony I. Cremeans**, Corps of Engineers

*Experimental Examination of the Effect of Particle Size in Hydraulic Turbines*

**Hari Prasad Neopane** and **Ole Gunnar Dahlhaug**, Norwegian University of Science & Technology; and **Bhola Thapa**, Kathmandu University

*Potential Failure Modes of the Truckee Canal Failure at Fernley, Nevada*

**Dave Paul**, Bureau of Reclamation

*The Effect of Earthquakes on Cracked Concrete Gravity Dams*

**Sogol Sadeghian** and **Mohsen Ghaemian**, Sharif University of Technology

*Consequence Ratings: A Streamlined Method for Developing Potential Loss of Life Estimates*

**Jay Stateler**, Bureau of Reclamation; **John Anevski** and **Doug Oellermann**, Bureau of Indian Affairs; and **Mike Brown**, Confederated Salish and Kootenai Tribes

*Designing a New Dam at a Karst Geology Site*

**Steve Whiteside** and **Kirk Westphal**, CDM

*Thermographic Imaging of Voids Behind Conduits and Drains*

**J.W. Wright**, **J.R. Smith**, **N. Myers**, **C. Cooper**, **J. M. Jones** and **R. Becker**, Bureau of Reclamation

*Effect of Seismicity on Subsurface Erosion in Levees*

**Ming Xiao** and **Jose Gomez**, California State University, Fresno

## Wednesday, April 22

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 — Construction I**

Moderators — **Arturo Ressi-di-Cervia**, Kiewit Construction Company; and **Victor Vasquez**, Freese and Nichols, Inc.

*Developing More Accurate Engineer's Estimates*

**Dan Hertel**, Barnard Construction Company, Inc.; and **Roy Watts**, URS Corporation

*Mormon Island Auxiliary Dam — Assessing Construction Risks for Seismic Remediation Alternatives*

**M. Jonathan Harris** and **Gregg A. Scott**, Bureau of Reclamation

*Rehabilitation of the Diversion Tunnel Outlet Works at Cobble Mountain Reservoir Dam*

**Neill J. Hampton**, Camp Dresser & McKee, Inc.; and **James Constantino**, Springfield Water & Sewer Commission

*Carter Lake Dam Outlet Works Addition*

**John W. France** and **Michael T. Zusi**, URS Corporation; and **Carl Brouwer**, Northern Colorado Water Conservancy District

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

Moderators — **Donald L. Basham**, Stantec Consulting Services; and **Enrique E. Matheu**, U.S. Department of Homeland Security

*A Structured Approach to Incorporating Uncertainty into a Dam Safety Risk Assessment*

**David S. Bowles**, **Sanjay S. Chauhan**, **Loren R. Anderson** and **Terry F. Glover**, Utah State University and RAC Engineers & Economists

*Interim Tolerable Risk Guidelines for the US Army Corps of Engineers Dams*

**Dale F. Munger**, Corps of Engineers; **David S. Bowles**, Utah State University and RAC Engineers & Economists; **Douglas D. Boyer**, Federal Energy Regulatory Commission; **Darryl W. Davis**, **David A. Margo** and **David A. Moser**, Corps of Engineers; **Patrick J. Regan**, Federal Energy Regulatory Commission; and **Nathan Snorteland**, Bureau of Reclamation

*A Comparison of Methods for Estimating Loss of Life from Dam Failure*

**Wayne J. Graham**, Bureau of Reclamation

*Probabilistic Safety Analysis for Evaluation of Stability of Spillway of Large Dam*

**G. Shams Ghahfarokhi**, **P.H.A.J.M van Gelder** and **J.K. Vrijling**, Delft University of Technology

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

Moderators — **B. Alex Grenoble**, Devine Tarbell & Associates, Inc.; and **Manoshree Sundaram**, Federal Energy Regulatory Commission

*Internal Erosion Incidents at Bureau of Reclamation Dams*

**Charles G. Redlinger** and **William O. Engemoen**, Bureau of Reclamation

*Long Term Performance of Seepage Barriers, Findings from Case Histories and Analyses*

**John D. Rice**, Utah State University

*3D GeoStatistics to Evaluate Embankment and Foundation Seepage*

**Kenneth R. Pattermann**, Corps of Engineers

*Using Geophysics to Evaluate an Embankment Dam Sinkhole*

**Mike McCaffrey**, PB Power; **Phil Sirles**, Zonge Geosciences, Inc.; **William Black**, Norcal Geophysical, Inc.; **Paul Shiers**, PB Power; and **Ray Barham**, Alcoa Power Generation Inc.

8:00 a.m. - 10:00 a.m. **Concurrent Session 3D — Environmental Issues I**

Moderators — **Patrick Mangan**, Bureau of Reclamation; and **Kenneth A. Steele**, Consultant

*Cuyahoga River Restoration Project: Balancing History and Environment*

**Ted Johnson** and **Greg Schell**, CDM; and **Robert Brown**, City of Kent, Ohio

*Flood Control Dam (Hantangang Dam)*

**Un Il Baek**, Daelim Industrial Co., Ltd; **Wan Ho Lee**, Korea Water Resources Corporation; and **Tae Myoung Jeon**, Daelim Industrial Co., Ltd

*Hiding in Plain Sight — Using the Natural Landscape as a Visual Barrier*

**Andrew Aceves** and **Melissa L. Dubinsky**, Paul C. Rizzo Associates, Inc.; and **Craig Giesmann**, Ameren

*Truckee River Below Derby Dam Restoration Project*

**Mitchell Blum**, HDR Engineering, Inc.; **Mahmood Azad**, Douglas County Nevada; and **Caryn Hunt DeCarlo**, Bureau of Reclamation

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

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

Moderators — **Arturo Ressi-di-Cervia**, Kiewit Construction Company; and **Victor Vasquez**, Freese and Nichols, Inc.

*Design and Construction Methods of a Rockfill Cofferdam through 200 Feet of Water*

**Mark Pabst**, Bureau of Reclamation

*A.V. Watkins Dam Modification: Cement-Bentonite Cutoff Wall*

**Brandt Demars**, **Curt Pledger** and **Bruce Barrett**, Bureau of Reclamation

*Otter Rapids Seepage Control and Piping Remediation*

**Iván A. Contreras, William J. Forsmark, Rich H. Ver Strate** and **Jon Ausdemore**, Barr Engineering Company; and **Todd Poehlman**, Wisconsin Public Service Corporation

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

Moderators — **Donald L. Basham**, Stantec Consulting Services; and **Enrique E. Matheu**, U.S. Department of Homeland Security

*Dam Failure Analysis and Consequence Estimation*

**David Margo, John Hunter, Barry Moran** and **Jason Needham**, Corps of Engineers

*Managing Dam Safety Risk Through a Joint Emergency Action Plan Functional Exercise*

**S. Williamson, J. Paolino** and **G. Tucker**, PB Power; **M. Gross**, Alcoa Power Generation Inc.; and **J. Lyon**, Federal Energy Regulatory Commission

*Emergency Action Planning of Risk Reduction Measures*

**Jeffrey Racicot**, Federal Energy Regulatory Commission

10:30 a.m. - 12:00 noon **Concurrent Session 4C — Embankment Dams III**

Moderators — **Del A. Shannon**, Black & Veatch Corporation; and **Danny McCook**, Consultant

*Re-Evaluation of the Seismic Stability of Chabot Dam*

**Lelio H. Mejia, Jiaer Wu** and **Theodore B. Feldsher**, URS Corporation; and **Atta B. Yiadom**, East Bay Municipal Utility District

*Use of Dynamic Deformation Analysis in Remediation Design*

**Vlad Perlea, Michael Ruthford** and **David Serafini**, Corps of Engineers

*Re-Analysis of the Failure of Teton Dam*

**Geraldo R. Iglesia** and **James L. Stiadly**, G<sup>2</sup>D Resources, LLC; and **Jim Zhou**, San Diego County Water Authority

10:30 a.m. - 12:00 noon **Concurrent Session 4D — Program and Project Management**

Moderators — **Kenneth A. Steele**, Consultant; and **Patrick Mangan**, Bureau of Reclamation

*Getting Past the Politics to Deliver Water*

**Gary Robertson**, Western Virginia Water Authority; and **John Wilkes**, CARPI USA

*Approach to Management of Risks on the San Vicente Dam Raise Project*

**Kelly L. Rodgers**, San Diego County Water Authority; **Geraldo R. Iglesia**, G<sup>2</sup>D Resources, LLC; and **Thomas O. Keller**, GEI Consultants, Inc.; and **Jeffrey A. Shoaf**, San Diego County Water Authority

*Asset Management — A New Way of Doing Business*

**Cory Morgan**, Corps of Engineers

12:00 noon - 1:15 p.m. **Lunch**

Moderator — **Kenneth A. Steele**

Speaker — **Janet C. Herrin**, Senior Vice President, Tennessee Valley Authority

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

Moderators — **James Hummert**, URS Corporation; and **Jay N. Stateler**, Bureau of Reclamation

*Implementation and Management of a Successful GIS for the FERC Relicensing Process — Lessons Learned*

**Kareem Bynoe, Paul Shiers** and **Anthony Plizga**, PB Power; and **Marshall Olson**, Alcoa Power Generation Inc.

*Industry Leading Satellite-Based GPS/GNSS (Global Navigation Satellite System) Positioning and Monitoring Solutions for Dam, Reservoir and Levee Management*

**Paul Drummond**, Trimble Navigation Ltd.

*Evaluating GNSS Monitoring Options in a Real-Time Network Environment*

**Gavin Schrock**, Seattle Public Utilities

1:30 p.m. - 3:00 p.m. **Concurrent Session 5B — Security I**

Moderators — **Tom Pace**, Stantec Consulting, Inc.; and **John C. Lyon, Jr.**, Federal Energy Regulatory Commission

*An European Methodology for Risk Based Security Assessment of Dams (DAMSE): Checking Screening Outcomes with DHS Procedures*

**Ignacio Escuder**, Universidad Politecnica de Valencia; **Massimo Meghella**, Cesi Ricerca; **Manuel G. Membrillera**, Universidad Politecnica de Valencia; and **Enrique E. Matheu**, U.S. Department of Homeland Security

*Consequence-Based Top Screen Methodology for Dams and Levees*

**Enrique E. Matheu**, U.S. Department of Homeland Security; **Frank Calcagno**, Federal Energy Regulatory Commission; **Hal Dalson**, Consumers Energy; and **Jennifer Dunn**, Corps of Engineers

*A Comparative Study on Risk Assessment Methodologies for Security and Protection of Critical Infrastructure*

**Yazmin Seda-Sanabria**, Corps of Engineers; **Ed Jopeck**, SRA International, Inc.; and **Enrique E. Matheu**, U.S. Department of Homeland Security

1:30 p.m. - 3:00 p.m.      **Concurrent Session 5C — Levees I**

Moderators — **Peter Hradilek**, HDR Engineering, Inc.; and **Elena Sossenkina**, Kleinfelder, Inc.

*Levee Screening Risk Assessment*

**David Margo** and **Andy Harkness**, Corps of Engineers

*Reliability Evaluation of the Natomas Levee System as Part of the Sacramento River Flood Control Project, Sacramento, California*

**Edward A. Ketchum** and **Mary P. Perlea**, Corps of Engineers; and **Raymond Costa**, Consultant

*Simplified Approach to Assess Levee Seismic Vulnerability*

**Scott Shewbridge** and **Sujan Punyamurthula**, URS Corporation; **Mike Inamine**, California Department of Water Resources; **Juan Vargas**, URS Corporation; **Steve Mahnke**, California Department of Water Resources; and **Jerry Wu**, URS Corporation

1:30 p.m. - 3:00 p.m.      **Concurrent Session 5D — Environmental Issues II**

Moderators — **Jeffrey A. Shoaf**, San Diego County Water Authority; and **W. Robert Ivarson, Jr.**, HNTB Corporation

*Biological Indicators of Conditions Below Dams in the Western United States*

**S. Mark Nelson**, Bureau of Reclamation

*Fish Habitat Mitigation and Restoration Challenges Associated with Additional Water Storage at Howard Hanson Dam*

**Lisa Scott** and **Zac Corum**, Corps of Engineers

*Application of Stochastic Time Series Modeling for Incorporation of Increased Variability of Flow in the Development of Instream Flow Recommendations*

**Thomas Hardy**, **Ekaterina Saraeva** and **Lisa Jensen**, Utah State University

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

3:30 p.m. - 5:00 p.m.      **Concurrent Session 6A — Hydraulic Structures**

Moderators — **David E. Meadows**, Corps of Engineers; and **Samuel L. Hui**, Bechtel Corporation

*Fit for Service Assessments for Hydraulic Steel Structures*

**Thomas L. North**, Corps of Engineers

*Cost Effective Modification of Flood Release Gates for Aquatic Base Flows*

**Stefan Schadinger** and **Anthony Plizga**, PB Power; **Ray Barham**, Alcoa Power Generation Inc.; and **John Lyon**, Federal Energy Regulatory Commission

*Replacement of the Low-Level Outlet Control at San Pablo Dam*

**Sean M. Todaro** and **Ray G. Wong**, East Bay Municipal Utility District

*Design for the Lake Townsend Dam Replacement Project*

**Robert Cannon**, **Rick Lux**, **Gerald Robblee**, **Tillman Marshall** and **Greg Paxson**, Schnabel Engineering; and **Melinda King**, City of Greensboro, North Carolina

3:30 p.m. - 5:30 p.m.      **Concurrent Session 6B — Security II**

Moderators — **Tom Pace**, Stantec Consulting, Inc.; and **John C. Lyon, Jr.**, Federal Energy Regulatory Commission

*USACE-DHS Collaborative Efforts on Risk Assessment and Blast Mitigation for Dams*

**Michael K. Sharp** and **Yazmin Seda-Sanabria**, Corps of Engineers; and **Enrique E. Matheu**, U.S. Department of Homeland Security

*Methodology for Estimating Economic Consequences for Dam Failure Scenarios*

**Dawn Munger**, Bureau of Reclamation

*Application of the Homeland Security Exercise and Evaluation Program (HSEEP) Framework to the 2008 Dam Security Exercise Series (DSES-08)*

**Yazmin Seda-Sanabria**, Corps of Engineers; and **Douglas J. Norton**, Battelle Memorial Institute

*Expanding the Security Information Base Among Dam and Levee Owners and Operators*

**Al Hancock**, Xcel Energy Corporation; **John Moyle**, New Jersey Department of Environmental Protection; **Enrique Matheu**, U.S. Department of Homeland Security; and **Elizabeth Hocking**, Argonne National Laboratory

3:30 p.m. - 5:00 p.m.      **Concurrent Session 6C — Levees II**

Moderators — **Peter Hradilek**, HDR Engineering, Inc.; and **Elena Sossenkina**, Kleinfelder, Inc.

*Probable Failure Mode for June 2008 V-Line Canal Failure*

**Christopher Slaven**, **Richard LaFond** and **John Cyganiewicz**, Bureau of Reclamation

*Geotechnical Assessment of Indiana Dams and Levees During June 2008 Midwest Flood Event*

**Troy S. O'Neal**, **Steven Spagna**, **Sean Carter**, **Erich Guy** and **Greg Hensley**, Corps of Engineers

*Interrelated Processes that Affect Levee Stability along Navigable Rivers*

**Mike Spoor**, **Seth Lyle** and **Adam Kays**, Corps of Engineers

*Cut-Offs for Levees and Dams: A Technology Review*

**Donald A. Bruce**, Geosystems, L.P.; and **George Sills**, Geotechnical Engineering Consultant

3:30 p.m. - 5:00 p.m. **Concurrent Session 6D — Environmental Issues III**

Moderators — **Jeffrey A. Shoaf**, San Diego County Water Authority; and **W. Robert Ivarson, Jr.**, HNTB Corporation

*Incorporating Water Bodies into a Post-Mining Landscape*

**Jeffery Schubert**, Paul C. Rizzo Associates, Inc.

*Impacts and Response to the Quagga Mussel Invasion of the Colorado River Aqueduct of Southern California*

**William D. Taylor**, Metropolitan Water District of Southern California

*Sampling and Detection of Dreissena Species: Determining if Zebra or Quagga Mussels are in your Water*

**Denise M. Hosler**, Bureau of Reclamation

*Effects of Jet Grouting on Wetland Invertebrates at Morman Island Auxiliary Dam, Folsom, California*

**Gregory Reed** and **S. Mark Nelson**, Bureau of Reclamation

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

7:45 p.m. - 10:00 p.m. **Dinner with Speaker and USSD Award Presentations**

Moderator — **Kenneth A. Steele**

Speaker — To be announced

## Thursday, April 23

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

8:00 a.m. - 5:00 p.m. **Risk Workshop**

8:00 a.m. - 10:00 a.m. **Technical Session — Wolf Creek Dam**

Moderator — **Barney Davis**, Corps of Engineers

*The Problem is the Solution: A History of Seepage, Piping, and Remediation in a Karst Foundation at Wolf Creek Dam — Jamestown, Kentucky*

**Michael F. Zoccola**, **Tommy A. Haskins** and **Daphne M. Jackson**, Corps of Engineers

*The Evolution of Instrumentation and Monitoring at Wolf Creek Dam Focusing on Potential Failure Modes*

**Jocelyn Feliciano**, Corps of Engineers

*Mapping Techniques for Communicating Risk and Potential Consequences of Dam Failure at Wolf Creek and Center Hill Dams*

**Benjamin L. Rohrbach**, Corps of Engineers

*Turning Data into Information at Wolf Creek Dam*

**L. Benneyworth**, **David Green**, **Jeff Albee** and **Bill Spencer**, AMEC Earth & Environmental, Inc.; and **Mark Elson**, **Tommy Haskins** and **Mike Zoccola**, Corps of Engineers

*Impacts of Pool Restrictions on Operation of the Cumberland River Basin Reservoir System*

**Robert B. Sneed**, Corps of Engineers

*Emergency Action Planning at Wolf Creek Dam*

**R. Kyle Hayworth**, Corps of Engineers

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

10:30 a.m. - 5:00 p.m. **Seismic Workshop**

10:30 a.m. - 5:00 p.m. **Field Tour — Center Hill Dam**

## Friday, April 24

8:00 a.m. - 6:00 p.m. **Field Tour — Wolf Creek Dam**

(Revised November 18, 2008)