



Program — 32nd USSD Annual Meeting and Conference

Innovative Dam and Levee Design and Construction for Sustainable Water Management

Monday, April 23

- 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. **2012 Annual Meeting of Members**
- Presiding — USSD President **Michael F. Rogers**, MWH
- 6:00 p.m. - 8:00 p.m. **Kick-Off Reception/Exhibition Opening**

Tuesday, April 24

- 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. - 9:00 a.m. **Opening Plenary Session**
- Moderator — **Michael F. Rogers**
- Introduction and Welcome*
Michael F. Rogers
- Welcome to New Orleans*
Robert A. Turner, New Orleans Levee Board
- Association of State Dam Safety Officials Update*
Zahir Bolourchi, President, ASDSO, and Louisiana Department of Transportation and Development
- ICOLD 2013 Meeting*
Michael F. Rogers
- Mississippi River Levees and Flood Control Activities*
Karen L. Durham-Aguilera, Director of Emergency Operations, Corps of Engineers

9:00 a.m. - 10:00 a.m. **Plenary Session — Innovative Dam and Levee Design and Construction for Sustainable Water Management**

Moderator — **Manoshree Sundaram**, MWH

Call to Stewardship

Patrick J. Regan, Federal Energy Regulatory Commission

Dams and Energy Sectors Interdependency Study

William N. Bryan and **Kenneth Friedman**, U.S. Department of Energy; **Tiffany Choi**, SAIC; **Enrique E. Matheu**, U.S. Department of Homeland Security; **Laura P. Keith**, SRA International; **Elizabeth Hocking**, Argonne National Laboratory; and **Bill H. Clark**, SRA International

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

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

Moderator — **Manoshree Sundaram**

An Overview and Comparison of Navigable Storm Surge Barriers

P.T.M. Dircke, ARCADIS The Netherlands; **T.H.G. Jongeling**, Deltares; and **P.L.M. Jansen**, Rijkswaterstaat Centre for Infrastructure

Sustainable, Reliable Water Supply and Climate Change

George W. Annandale, Golder Associates Inc.

Organizational Response to Failure

Christopher J. Hill, Metropolitan Water District of Southern California

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

Moderator — **Michael F. Rogers**

Challenges in Managing TVA's Integrated River and Power System

Janet C. Herrin, Tennessee Valley Authority

1:30 p.m. - 3:00 p.m. **Concurrent Session 1A — Safety and Security I**

Moderators — **Walter L. Davis**, Seattle City Light; and **Enrique E. Matheu**, U.S. Department of Homeland Security

A Tiered Approach to Considering Uncertainty in Dam Safety Risk Assessment: Concepts and Examples

David S. Bowles, RAC Engineers & Economists and Utah State University; **Anurag Srivastava**, Utah State University; and **Sanjay Chauhan**, RAC Engineers & Economists

Risk Analysis Guides — Dam Safety Decisions for Beaver Park Dam, Colorado
John W. France, URS Corporation; **Bill McCormick** and **Matt Gavin**, Colorado Division of Water Resources

Changes to Reclamation's Dam Safety Review Process

Daniel W. Osmun, **William O. Engemoen** and **William R. Fiedler**, Bureau of Reclamation

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

Moderators — **Guy S. Lund**, URS Corporation; and **Chris Goodell**, WEST Consultants, Inc.

Recent Experience with Alkali Aggregate Reaction Effects in Concrete Dams

Dan D. Curtis, HATCH Renewable Power

Addressing AAR Stability Concerns at Santeetlah Dam

Jesse Kropelnicki, PB Americas, Inc.; **Michael Sabad**, Alcoa Power Generating Inc.; and **Paul F. Shiers** and **Edith J. Butterworth**, PB Americas, Inc.

Freeze-Thaw Deterioration on Aging Structures — Structural Analysis of Gerber Dam

Hillery Venturini, Bureau of Reclamation

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

Moderators — **Paul E. Booth**, ARCADIS U.S., Inc.; and **Amanda Sutter**, Corps of Engineers

Automatic Data Acquisition System at Santeetlah Dam

Kevin Finn, PB Americas, Inc.; **Alvin Diamond** and **Michael Sabad**, Alcoa Power Generating Inc.; and **Paul Shiers** and **Jesse Kropelnicki**, PB Americas, Inc.

Investigation and Evaluation of Seepage Conditions and Potential Failure Modes Around Outlet Conduits

Keith A. Ferguson, HDR Engineering, Inc.

Self Monitoring Levees: How Close Are We?

Dennis M. Kamber, ARCADIS; **Harry R. Kolar**, IBM Research; and **Rob Vining**, HNTB

1:30 p.m. - 3:00 p.m. **Concurrent Session 1D — Embankment Dams**

Moderators — **Dennis Hogan**, Black & Veatch Corporation; and **Tahereh Heidari**, MWH

Discussion of Modeling for Analyses of Fully Softened Levees

Danny K. McCook, McCook Geotechnical Engineering, PLLC

Utilizing Geophysics in Auxiliary Spillway Integrity Evaluation

Cari R. Beenenga, Gannett Fleming, Inc.; **L. Andrew Deichert** and **Joseph M. Seybert**, Natural Resources Conservation Service; and **David M. Snyder**, Gannett Fleming, Inc.

A Large Scale Resonant Column Testing System for Evaluating Dynamic Properties of Gravelly Fill Materials of Dams

Nam-Ryong Kim, **Dong-Hoon Shin**, **Ik-Soo Ha** and **Min-Seub Kim**, Korea Water Resources Corporation

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

Moderators — **Wayne D. Edwards**, W.D. Edwards Consulting, LLC; and **Kenneth A. Steele**, Consultant

New Orleans Surge Barrier: First Line of Defense

Paul Stirm, ARCADIS U.S., Inc.

Seabrook Sector Gate Complex — Geotechnical Considerations and Issues

Robert Chamlee, ARCADIS U.S., Inc.

Levee Cutoff Wall Design and Construction through Loose Sacramento River Silts

Jonathan W. Pease and **Christopher R. Nardi**, Kleinfelder, Inc.

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

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

Moderators — **Walter L. Davis** and **Enrique E. Matheu**

Reclamation's Public Protection Guidelines — Interim Update

Brian Becker, Bureau of Reclamation

The Taum Sauk Dam Failure Was Preventable — How Do We Prevent the Next Operational Dam Failure?

David W. Lord, Federal Energy Regulatory Commission

A Dam Incident at Table Rock Lake Dam

D. Wade Anderson, **Elmo J. Webb** and **Bobby Van Cleave**, Corps of Engineers

Lower Dam Rehabilitation — From FERC to DCR

Greg Zamensky, Black & Veatch Corporation; and **Mishelle Noble-Blair** and **Greg Prelewicz**, Fairfax Water

3:30 p.m. - 5:00 p.m. **Concurrent Session 2B — Concrete Dams**
(continued)

Moderators — **Guy S. Lund** and **Chris Goodell**

Spillway Chute Slab Concrete Delamination and Spalling Due to Thermal Expansion

Daniel D. Mares, Bureau of Reclamation

Concrete Thermal Strain, Shrinkage and Cracking Analysis for the Panama Canal Third Set of Locks Project

Vik Iso-Ahola, **Bashar Sudah** and **Vincent Zipparro**, MWH Americas, Inc.

Hydromechanical Analysis for the Safety Assessment of a Gravity Dam

Maria Luisa Braga Farinha, **Eduardo M. Bretas** and **José V. Lemos**, Portuguese National Laboratory for Civil Engineering

3:30 p.m. - 5:30 p.m. **Concurrent Session 2C — Monitoring and Instrumentation** (continued)

Moderators — **Paul E. Booth** and **Amanda Sutter**

Developing Embankment Dam Fragilities for Emergency Modeling and Response

Yogesh Prashar, **Atta B. Yiadom** and **Elizabeth Bialek**, East Bay Municipal Utility District

Application of Acoustic Imaging for Underwater Substructure Inspection and Mapping

Kenneth J. LaBry, Fenstermaker

Improved Characterization of Dams, Reservoirs, Levees and Other Water-Related Infrastructure Through Detailed Multi-Sensor Surveying

Todd Mitchell, Fugro Consultants, Inc.

3D Topographic Integration Method on Interior and Exterior Floodplains of Levees Using LiDAR and SONAR Data

Myung Hee Jo, Kyungil University; **Hyun Jung Kim**, **Hyen Cheol Park**, **Jun Ho Song** and **Yun Jae Choung**, Institute of Spatial Information Technology Research

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

Moderators — **Dennis Hogan** and **Tahereh Heidari**

Ragged Mountain Dam — The Twists and Turns of Selecting and Designing a New Dam

Randall P. Bass, Schnabel Engineering, Inc.; and **Jennifer A. Whitaker**, **Douglas J. March** and **Thomas Frederick**, Rivanna Water & Sewer Authority

Seepage Control and Monitoring at Two Existing Colorado Earthen Embankment Dams

Doug Yadon, AECOM Technical Services, Inc.; and **Ron Sanchez**, **Andy Funchess**, **Pat Schmidt** and **Dave Mason**, Colorado Springs Utilities

Risk Informed Decision Making Influences on the Ashton Dam Remediation Project Design

Roger L. Raeburn, PacifiCorp Energy; **Jennifer L. Williams**, URS Corporation; and **Frank L. Blackett**, Federal Energy Regulatory Commission

Case Study: Blakely Mountain Dam

Ben Emery, Corps of Engineers

3:30 p.m. - 5:30 p.m. **Concurrent Session 2E — Decommissioning**

Moderators — **Wayne D. Edwards** and **Kenneth A. Steele**

USSD Guidelines for Dam Decommissioning Projects, Executive Summary

Timothy J. Randle and **Thomas E. Hepler**, Bureau of Reclamation

Elwha River Restoration: Sediment Management

Timothy J. Randle and **Jennifer A. Bountry**, Bureau of Reclamation

Detailed Plan for Potential Removal of Klamath River Hydroelectric Facilities

Thomas Hepler and **Blair Greimann**, Bureau of Reclamation

Modeling Channel Formation on the Klamath River Due to Reservoir Drawdown

Yong G. Lai and **Blair P. Greimann**, Bureau of Reclamation

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

Emergency Action Plans for Dams in Korea

Taeho Kang and **Byungkyu Choi**, SAMAN

Assessment of the Flood Vulnerability of Dams Due to Climate Change in South Korea

Soo Jun Kim, Columbia University, **Hung Soo Kim**, **Jong So Lee** and **Hui Seong Noh**, Inha University; and **Kyung Seok Kang**, Pyunghwa Engineering Consultants Ltd

Many Challenges, One Integrated Solution

Edwin C. Luttrell, HDR Engineering, Inc.; and **Bradley T. Keaton**, Duke Energy

Evaluation on Phreatic Line in Homogeneous Earth Dams with Different Drainage Systems

R. Ziaie Moayed, **V. Rashidian** and **E. Izadi**, Imam Khomeini International University

New Reservoir Models for Oklahoma

John Ruhl, Black & Veatch Corporation; and **B. Dan Hernandez**, Corps of Engineers

On the Performance of Levee Structures with Induced Internal Deformation

Gholamreza Saghae and **Mohamed Meguid**, McGill University; and **Ahmed Bayoumi**, Ardaman and Associations, Inc.

Quantitative Risk Analysis for a Dam Under Construction in Spain

Daniel Sanz-Jiménez, Confederación Hidrográfica del Duero; **Ignacio Escuder-Bueno**, Universidad Politécnica de Valencia; and **Francisco Silva-Tulla**, Consultant

Effect of Earthquake on Embankment Dams

Gopi Siddappa, P.E.S. College of Engineering

Discussion on the Stress and Deformation Simulation of a Faced Hardfill Dam and its Strength Design Criterion

Mengxi Wu and **Ling Sun**, Chinese Academy of Sciences

Wednesday, April 25

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

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

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

Moderators — **John S. Wolhope**, Freese and Nichols, Inc.; and **Dean B. Durkee**, Gannett Fleming, Inc.

It Is Seepage Indeed — A Sensitivity Study on Seepage and Seepage-Induced Slope Stability for Levees

Khaled Chowdhury, **Richard Millet**, **Sujan Punyamurthula**, **Gyeong-Taek Hong** and **Nichole Tollefson**, URS Corporation

Reaching Settlements: Using Design Mediation to Resolve Subsurface Conflict Between Flexible and Rigid Foundations Within Levee System Transition Zones

Michael S. Quinn, ARCADIS; **James J. Hance**, Eustis Engineering Services, LLC; **Richard J. Varuso**, Corps of Engineers; and **Sean G. Walsh**, ARCADIS

Pile Foundation Design in Soft Soil for the World's Largest Drainage Pumping Station

Kevin Zitzow, ARCADIS

Full-Scale Testing of Levee Resiliency During Wave Overtopping

Christopher Thornton, **Bryan Scholl**, **Steven Hughes** and **Steven Abt**, Colorado State University

8:00 a.m. - 10:00 a.m. **Concurrent Session 3B — Safety and Security II**

Moderators — **B. Alex Grenoble**, HDR; and **John C. Lyon, Jr.**, Federal Energy Regulatory Commission

Consequence Estimation Dam Failures

William Lehman and **Jason Needham**, Corps of Engineers

Dam and Levee Safety Risk Assessment — Evaluation Routing and Life Loss Estimation Using LIFESIM

Woodrow Fields, Corps of Engineers; **Chris Bahner**, WEST Consultants, Inc.; **Jason Needham**, Corps of Engineers; and **Christopher R. Goodell**, WEST Consultants, Inc.

Comparison of Dam Breach Flood Uncertainty Calculations

Christopher R. Goodell, WEST Consultants, Inc., and **David C. Froehlich**, Consulting Engineer

We Can, but Should We? PMF Frequency Estimates

Jeffrey T. McClenathan, Corps of Engineers

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

Moderators — **Denise Bunte-Bisnett**, Santee Cooper; and **William R. Swanson**, MWH

Preserving Regulated Rivers by Optimizing Hydroelectric Dam Operations
Brent Travis, WEST Consultants, Inc.

Reservoir Operations for Trout Survival Along the White River
Kevin Fagot, WEST Consultants, Inc.; and **Mike Biggs**, Corps of Engineers

Delivering the Abberton Scheme, An Enhanced Water Resource for South-East England

Jonathan Troke, MWH; **Jim Jenkins**, Essex & Suffolk Water; and **Ian Carter** and **David Knott**, MWH

Today's Dams Role in the Water Resources and Sustainability Equation
Scott R. Brand, Black & Veatch Corporation

8:00 a.m. - 10:00 a.m. **Concurrent Session 3D — Construction and Rehabilitation I**

Moderators — **Jeffrey A. Shoaf**, San Diego County Water Authority; and **Emily Schwartz**, Freese & Nichols, Inc.

Roanoke Rapids Dam — Addressing Concrete Deterioration Issues
Matthew Pauvlinch, Brayman Construction Corporation

Rock Stabilization to Facilitate Repair of the Historic Ocoee No. 2 Hydro-Electric Project
Lindsay Cooper, ARCADIS

The Third Time's a Charm
Victor M. Vasquez, **M. Leslie Boyd** and **John L. Rutledge**, Freese and Nichols, Inc.; **Martin J. Cristofaro**, AECOM; **Donald A. Bruce**, Geosystems, L.P.; and **Patrick Carr**, Judy Company, Inc.

Design of Emergency Water Supply Line Tunnel at Warm Springs Dam
Sam Yao, Ben C. Gerwick, Inc.; and **Hugh Caspe** and **Michael O'Hagan**, HNTB Corporation, Inc.

8:00 a.m. - 10:00 a.m. **Concurrent Session 3E — Hydraulics and Hydrology I**

Moderators — **Jerry W. Webb**, Corps of Engineers; and **Paul F. Shiers**, PB Americas, Inc.

Inspection of Trunnion Rods at Greenup Dam
Mark A. Cesare and **J. Darrin Holt**, FDH Engineering, Inc.

Improving Debris Management at Lake Lynn Dam
Stefan Schadinger and **Bryce Mochrie**, PB Power; and **Andrew Datsko** and **Jacob Vozel**, First Energy

Comprehensive Spillway Tainter Gate Assessment and Identification of Interim Risk Reduction Measures

Laurie Ebner and **Matt Craig**, Corps of Engineers

Maintenance and Repair of Spillway Gates
Todd Schellhase, Black & Veatch Corporation

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

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

Moderators — **John S. Wolfhope** and **Dean B. Durkee**

Flood Protection for the Henderson Bayou Watershed
Stephen L. Whiteside, **Nabil S. Mikhail** and **Richard L. Hoffer**, CDM Smith

We Do Not Want that to Happen at Our Wastewater Treatment Plant Levee!
Tyler C. Dunn, **Stephen L. Whiteside** and **Michael P. Smith**, CDM Smith

Geophysical Investigations for Levee Systems — Killing Several Birds with One Stone

Michael K. Sotak, **Douglas E. Layman** and **Thomas A. Chapel**, Tetra Tech, Inc.

10:30 a.m. - 12:00 noon **Concurrent Session 4B — Safety and Security II (continued)**

Moderators — **B. Alex Grenoble** and **John C. Lyon, Jr.**

Modeling Adaptive Threats: Incorporating a Terrorist Decision Model into Security Risk Assessments

Yev Kirpichevsky, Institute for Defense Analyses; **Enrique E. Matheu**, U.S. Department of Homeland Security; and **Yazmin Seda-Sanabria**, Corps of Engineers

SONAR for Protection of Maritime Structures

Jason Curd, **L. Sebastian Bryson** and **Michael Kalinski**, University of Kentucky

Defensive Directed Energy Systems for Dam Security

Alexander D. Krumenacher, **L. Sebastian Bryson** and **Michael E. Kalinski**, University of Kentucky

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

Moderators — **Denise Bunte-Bisnett** and **William R. Swanson**

Louisiana DOTD Reservoir Priority Development Program

William F. McHie and **William R. Swanson**, MWH Americas, Inc.; and **Zahir Bolourchi**, Louisiana Department of Transportation and Development

Scripting of Rules in HEC-Ressim for the ACF and ACT Basins

Kevin Fagot, WEST Consultants, Inc.; **Andy Ashley**, **James Hathorn, Jr.**, and **Joan Klipsch**, Corps of Engineers; and **Henry Hu** and **Dan Eggers**, WEST Consultants, Inc.

DVD presentation: Landlocked: The Story of the Freshwater Striped Bass

Introduction by **Denise Bunte-Bisnett**

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

Moderators — **Jeffrey A. Shoaf** and **Emily Schwartz**

San Vicente Dam Raise Project — Tensile Strength Testing on Existing Dam and Trial Placement

Michel Jubran, MWH; **Jim Zhou**, San Diego County Water Authority; **Russ Grant**, Kleinfelder, Inc.; **James Stiad**, G²D Resources, LLC; and **Andrew Oleksyn**, San Diego County Water Authority

Partial Demolition and Surface Preparation of Existing San Vicente Dam

Eric Sturtz, Black & Veatch Corporation; **Nick Patch**, Barnard Construction Company, Inc.; **Wayne Younger**, American Hydro Corporation; and **Jerry E. Reed III** and **Gary Olvera**, San Diego County Water Authority

The Beneficial Behavioral Characteristics of Fly Ash-Rich RCC Illustrated through Changuinola 1 Arch/Gravity Dam

Quentin Shaw, ARQ (PTY) Ltd.

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

Moderators — **Jerry W. Webb** and **Paul F. Shiers**

Computational Modelling of Advanced Flow Characteristics in Aerated High Energy Spillways

Kevin Franke and **Piroz Zamankhan**, University of Iceland

Potential Applications for Piano Key Weirs at Dams in the United States

Greg Paxson, Schnabel Engineering; **Blake P. Tullis**, Utah State University; and **Dave Campbell**, Schnabel Engineering

Revisiting Spillway Discharge Coefficients for Several Weir Shapes

William Kortney Brown and **Gregory S. Paxson**, Schnabel Engineering; and **Bruce Savage**, Idaho State University

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

Moderator — **Michael F. Rogers**

Unique Applications for Risk Analysis at the Bureau of Reclamation

Brian Becker, Bureau of Reclamation

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

Moderators — **Mike Shiflett**, Freese and Nichols, Inc.; and **Paul B. Rollins**, Willowstick Technologies, LLC

Wave Overtopping Hydraulic Parameters on Protected-Side Slopes

Steven Hughes, **Bryan Scholl** and **Christopher Thornton**, Colorado State University

Bridging Techniques for I-Wall System to Mitigate Local Failure

Chung R. Song and **Jimmy I. Jackson**, University of Mississippi

Enhancing Erosion Resistance of Levee by Ground Modification

James T. Kidd, Air Force Research Laboratory; **Chung R. Song** and **Alexander H.-D. Cheng**, University of Mississippi; and **Wongil Jang**, Korea Land and Housing Corporation

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

Moderators — **Keith A. Ferguson**, HDR Engineering, Inc.; and **Kevin J. Marshall**, Grant County Public Utility District

Analysis of Dam Response Under Foundation Faulting

Lelio H. Mejia and **Ethan Dawson**, URS Corporation

Considerations for Deformation Analyses for Subduction Zone Earthquake Loadings

Bryan M. Scott and **Navead C. Jensen**, Bureau of Reclamation

Shaken, But Not Stirred — Earthquake Performance of Concrete Dams

Larry K. Nuss, Bureau of Reclamation (retired); **Norihisa Matsumoto**, Japan Dam Engineering Center; and **Kenneth D. Hansen**, Consulting Engineer

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

Moderators — **Arturo Ressi-di-Cervia**, Kiewit Construction Company; and **Robert P. Cannon**, Schnabel Engineering

Quality Control and Quality Assurance in Cutoff Walls

D.A. Bruce, Geosystems, L.P.; and **G. Filz**, Virginia Polytechnic Institute and State University

New Developments and Important Considerations for Standard Penetration Testing for Liquefaction Evaluations

Jeffrey A. Farrar, Bureau of Reclamation

Installation of Concrete Cut-Off Walls by Hydrocutters — A Safe and Economical Approach for a Durable Solution

Peter E. Banzhaf, Bauer Spezialtiefbau GmbH; **Martin Hoegg**, Bauer Foundation Corp.; and **Philip J. Snyder**, GEI Consultants, Inc.

1:30 p.m. - 3:00 p.m. **Concurrent Session 5D — Construction and Rehabilitation II**

Moderators — **Tor Hansen**, Barr Engineering Company; and **Kevin C. Griebenow**, Federal Energy Regulatory Commission

Construction of a 100-Foot Deep Cofferdam in the Ohio River

W. James Marold, MWH

Temporary and Permanent Dewatering of Earth Embankment Dams to Facilitate Rehabilitation

Greg M. Landry, Moretrench American Corporation; and **Cari R. Beenenga**, Gannett Fleming, Inc.

USACE Emsworth Dam Spillway Gates Rehabilitation

Michael Hanley, Electro Hydraulic Machinery Company

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

Moderators — **Martin J. Teal**, WEST Consultants, Inc.; and **Jason Thom**, DOWL HKM Engineering

Using the Sacramento Soil Moisture Accounting Model to Improve Flood Frequency Estimates for Dam Safety

Frank Dworak, Bureau of Reclamation

Site-Specific PMP for North Texas: Bringing HMR 51 into the 21st Century

Bill Kappel and **Ed Tomlinson**, Applied Weather Associates LLC; **Courtney Jalbert** and **Louie Verrealt**, Tarrant Regional Water District

Improving Hydrologic Analysis and Applications Using Quality Weather Radar Data and the Storm Precipitation Analysis System

Ed M. Tomlinson, Applied Weather Associates, LLC; **Tye W. Parzybok**, Metstat, Inc.; **Bill D. Kappel** and **Doug M. Hultstrand**, Applied Weather Associates, LLC; and **Beth Clarke**, Weather Decision Technologies, Inc.

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

3:30 p.m. - 5:30 p.m. **Concurrent Session 6A — Levees III (continued)**

Moderators — **Mike Shiflett** and **Paul B. Rollins**

Protecting Our National Heritage — The Washington, DC, Levee

Pete Nix and **Steven Riedy**, Tetra Tech, Inc.

Building a Levee in the Alaska Wilderness: Balancing Risk, Robustness, and Project Cost

Matthew Redington and **Glen Krogman**, HDR Engineering, Inc.

Addressing Deficiencies in the Ventura River Levee System

Ike Pace and **Michael E. Zeller**, Tetra Tech, Inc.

Sustainable Design for the Soldier Creek Levee Repair

John Ruhl, Black & Veatch Corporation; and **Seth Laliberty**, Corps of Engineers

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

Moderators — **Keith A. Ferguson** and **Kevin J. Marshall**

Hume Dam, Seismic Analysis of Soil/Structure Interaction

Guy Lund, **Brad Dawson** and **Mark Foster**, URS Corporation

General Approach Used for the Seismic Remediation of Perris Dam

Steven Friesen and **Ariya Balakrishnan**, California Department of Water Resources

Evaluation for Fundamental Periods of Korean Rockfill Dams with Micro-Earthquake Records

Ik-Soo Ha, Kyungnam University; and **Dong-Hoon Shin** and **Jeong-Yeul Lim**, Korea Water Resources Corporation

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

Moderators — **Arturo Ressi-di-Cervia** and **Robert P. Cannon**

A New Zoned Embankment Dam and Cutoff Wall in Piedmont Geology

Dennis Hogan and **Greg Zamensky**, Black & Veatch Corporation

Construction of a Cut-Off Wall for Existing Tailings in Warm Permafrost in Alaska

Franz-Werner Gerressen, BAUER Maschinen; and **Brian W. Wilson**, Golder Construction Inc.

Mitigating Risk When Drilling at the Toe of a Dam

Cari Beenenga and **Edward J. Barben**, Gannett Fleming, Inc.

Pine Creek Dam — Phase IV Void Investigation and Backfilling

Kathryn A. White and **D. Wade Anderson**, Corps of Engineers

3:30 p.m. - 5:00 p.m. **Concurrent Session 6D — Construction and Rehabilitation II (continued)**

Moderators — **Tor Hansen** and **Kevin C. Griebenow**

Levee Construction and Remediation Using Roller Compacted Concrete and Soil Cement

Carl M. Rizzo, **Charles W. Weatherford** and **Paul C. Rizzo**, Paul C. Rizzo Associates, Inc.; and **John Bowen**, ASI Constructors

Mangla Dam Raising— Pakistan

J. Dominic Molyneux and **Michael Hieatt**, Black & Veatch Corporation

Large-Scale Concrete Testing

Stephen B. Tatro and **James K. Hinds**, Tatro Hinds Advanced Concrete Engineering

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

Moderators — **Martin J. Teal** and **Jason Thom**

Dam Breach Modeling with Unsteady HEC-RAS: Common Techniques and Assumptions Compared

Sunit Deo and **Scott M. Muchard**, HDR Engineering, Inc.

Development and Implementation of Web-Based Dam-Break Flood Inundation Analysis Capabilities

Mustafa S. Altinakar, University of Mississippi, **Enrique E. Matheu**, U.S. Department of Homeland Security; **Marcus Z. McGrath** and **Vijay P.**

Ramalingam, University of Mississippi; and **Jun Z. Zou**, U.S. Department of Homeland Security

Dam-Break Flood Inundation Analysis for Lake Youngs Reservoir

Henry Hu and **John Howard**, WEST Consultants, Inc.; and **Daniel Huang**, Seattle Public Utilities

Dam Breach Analysis Simulation on the Lower Susquehanna River

Jay Greska, **Bryce Mochrie**, **Chii-Eli Tsai** and **Christopher Godwin**, PB Power

7:15 p.m. - 7:45 p.m. **Reception**

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

Moderator — **Michael F. Rogers**

Speaker — Major General **Michael J. Walsh**, Corps of Engineers, Washington, DC

Thursday, April 26

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

8:00 a.m. - 9:30 a.m. **Field Tour Briefing**

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

10:00 a.m. - 5:00 p.m. **Field Tour and Lunch — New Orleans Area Water Control Structures**

Moderator — **John Bivona**, Corps of Engineers, New Orleans District

10:00 a.m. - 12:00 noon **Concurrent Workshop 1 — Approaches to Meet Spillway Design Flood Requirements**

Moderator — **James E. Lindell**, MWH

10:00 a.m. - 12:00 noon **Concurrent Workshop 2 — Design and Construction of Remedial Seepage Measures for Embankment Dams**

Moderator — **Craig W. Harris**, MWH

10:00 a.m. - 12:00 noon **Concurrent Workshop 3 — Lessons Learned in Sustainable Levee Infrastructure**

Moderators — **Dean B. Durkee**, Gannett Fleming, Inc.; and **John S. Wolhope**, Freese and Nichols, Inc.

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

1:00 p.m. - 5:00 p.m. **Concurrent Workshops 1, 2 and 3** (continued)

Friday, April 27

8:00 a.m. - 5:00 p.m. **Field Tour and Lunch — New Orleans Area Water Control Structures**

(Revised April 15, 2012)