

# Reservoir System Modeling Technologies Conference

February 21-22, 2012 Portland, Oregon

## Agenda

### Tuesday, February 21

- 08:00-08:45 Welcome and Introduction  
Steve Oliver, Vice President, Generation Asset Management, BPA  
Steve Barton, BPA
- 08:45-10:15 Session 1
- *Experience with Hydroelectric Operations Decision Support Systems*  
Chuck Howard
  - *A Goal Programming Algorithm to Incorporate the Columbia River Non-Power Flow Requirements in the BC Hydro Generalized Optimization Model*  
Ziad Shawwash, Ph.D., University of British Columbia
- 10:15-10:30 Break
- 10:30-12:00 Session 2
- *Joint use of Large-scale Stochastic Optimization Techniques and Hydrologic Modeling applied to the Columbia River System*  
Mario Pereira, PSR
  - *Adoint Modelling Framework for Real Time Control*  
Dirk Schwanenberg, Deltares
- 12:00-1:00 Lunch
- 1:00-3:15 Session 3
- *Integrated Modeling as a Tool for Long Term Planning: Reservoir Operations Analysis in the Willamette Water 2100 Project*  
Matt Cox, Oregon State University
  - *Decision Support Systems to Maximize Operational Efficiency of Dams while Maintaining Regulatory Compliance*  
Mark Morehead, Ph.D, Idaho Power Company
  - *Decision Support System for Hydropower Dam Operation*  
Arnold Engelmann, DHI Water & Environmental, Inc.
- 3:15-3:30 Break
- 3:30-5:45 Session 4
- *Development of Stream Flow Forecasting System within a Highly Regulated River*  
Kresta Davis-Butts, Idaho Power Company
  - *Optimization of Water and Power Objectives using RiverWare*  
Edie Zagona and Tim Magee, University of Colorado, Center for Advanced Decision Support for Water and Environmental Systems (CADSWES)
  - *A Computationally Efficient and Robust Approach for Multi-objective operation of Multi-reservoir systems subjected to Multiple Constraints*  
Arturo Leon, Oregon State University



## Wednesday, February 22

- 08:00-10:15      Session 5
- ***A Robust, Accurate and Computationally Efficient Model Based on Performance Graphs for Unsteady Flow Routing in Complex River Systems***  
Arturo Leon, Oregon State University
  - ***Hydro Planning by Stochastic Programming with Forward Scenario Aggregation***  
Bernard Lamond, Université Laval
  - ***Using the GENESYS Model to Assess the Impacts of Wind on the NW Power Supply***  
John Fazio, NW Power and Conservation Council
- 10:15-10:30      Break
- 10:30-12:00      Session 6
- ***Renewable Integration Tool for Wind Power on Idaho Power's Electrical System***  
Mark Morehead, Idaho Power Company
  - ***Future Developments of MODSIM; Integrating River Basin Operations Modeling with Power Systems Economic Dispatch***  
André Dozier, Colorado State University
- 12:00-1:00      Lunch
- 1:00-3:15      Session 7
- ***Financial Analysis of Hydro-power Load Following and Improvement of System Operational Flexibility through Wind Farm Participation in AGC***  
Michael Antonishen, Oregon State University
  - ***Tree-based Model Predictive Control for Optimizing Hydro Power with Uncertainty***  
Dirk Schwanenberg, Deltares
  - ***Towards Reduction of Uncertainty in the Operation of Reservoir Systems***  
Tseganeh Gichamo, Oregon State University
- 3:15-3:30      Break
- 3:30-5:00      Session 8
- ***Displays and Data Management to Support Real Time Operations with Delft FEWS***  
Edwin Welles, Deltares USA
  - ***A New Framework for Multi-Reservoir Operations and Management***  
Robert Annear, Ph.D., Geosyntec Consultants