

Hydropower Conference

March 3-4, 2020 • Palm Springs, CA

Case Studies of Implementing New Technologies in Hydropower

Evolving Technologies and Techniques in Hydrology, Operations and Planning

- Machine learning and data assimilation
- New algorithms for optimizing
- Data quality control
- Data transformation and transfer
- Automated calibration

New Technologies and Methods/Techniques for Inspection, Maintenance, Rehab in the Powerhouse

- Oil free bearing applications
- Utilizing wireless technologies for tracking, inspections, maintenance work, or lock-out/tag-out systems
- New rehab procedures and techniques to reduce downtime, improve efficiency and better manage work
- New techniques for controls, inspection and monitoring of powerhouse assets
- Use of instrumentation and aggregated data for machine learning – improve predictive maintenance and asset management in the powerhouse
- Use of technology to reduce plant automation related maintenance and upkeep
- Methods for minimizing disassembly

New Technologies and Techniques for Surveillance and Monitoring, Assessment and Decision making for Dams and their Flow Control Facilities

- New gate testing procedures and tools
- Torque measurement at gates
- New radar/drone/submersible/scanning technologies
- Performance monitoring and surveillance
- Use and verification of instrumentation, its data management around reservoir and dam operations
- Routine testing of dam safety related instrumentation and automation

New Technologies and Techniques for Emergency Operations Management

- Simplified precipitation frequency, special and temporal information for probabilistic flood hazard analysis
- How to monitor and predict the medium scenario
- Unlikely combinations of likely events
- Real time forecasting for flooding/inundation
- Planning for community responses to emergency scenarios

Environmental Considerations

- Spillway gate testing – environmental considerations
- Operational and asset consideration for managing water quality (ex: total dissolved gas, dissolved oxygen, etc.)
- Aerating turbines,
- Fish passage tech and fish exclusion,
- Vegetation control for dam maintenance,
- Permitting for dam rehabilitation,
- Temperature control upstream and downstream

Who Should Attend?

- Electric Utilities
- Consultants
- Equipment Vendors
- Research Facility and Laboratory Personnel
- Academics

This event is supported by the following member utilities:



Hydropower Day 1: March 3, 2020

7:00-8:00 Breakfast

 **Celebrity Ballroom**

Session 1: Impacts of Flexible Operations

Session Chairs: Lizzie Smith & Chris Hayes, CEATI International

 **Ambassador Ballroom**

8:00-8:30 **CEATI Welcome and Introduction**

*Lizzie Smith & Chris Hayes,
CEATI International*

8:30-9:00 **Southern California Welcome Address - System Transformation Challenges and Opportunities**

*Jill Anderson,
Southern California Edison*

9:00-9:45 **Hybrid Hydropower and Energy Storage Systems**

*Thomas Mosier,
Idaho National Lab
Ben Jenkins,
Idaho Falls Power*

9:45-10:30 Coffee Break

10:30-11:15 **Flexible Operations Facilitated by AEP's Battery Storage Project at Buck-Byllesby**

*Matthew Hensley,
American Electric Power*

11:15-12:00 **Spillgate Testing - Effects on Operations, Plant Reliability, and Dam Safety**

*John Chandler,
Puget Sound Energy*

12:00-1:30 Lunch

 **Celebrity Ballroom**

Session 2A: Dam Safety and Operations and Planning

Session Chairs:

 **Ambassador Ballroom**

Chuck Bach, CEATI International
Kim Pate, Seattle City Light

1:30-2:15 **Application of a Storm Generator for Planning for the Extremes**

*Shaun Carney, RTI
Curt Jawdy, TVA*

2:15-3:00 **Rapid Response Inundation Mapping**

*Whitney Sorrels and Justin Giles,
U.S Army Corps of Engineers*

3:00-3:45 Coffee Break

3:45-4:30 **Structures and Systems for Revenue Enhancement and Environmental Considerations**

Andy Peters, Pacific Netting Products

4:30-5:15 **Preparing for Battle With the 100,000 cfs Slushy Maker - Winter 2019/20 Flood on the Winnipeg River**

Kevin Gawne, Manitoba Hydro

Session 2B: Plant Reliability

Session Chair:

 **Oasis Ballroom**

Chuck DeVane, Southern Company

1:30-2:15 **Predictive Software for Sustainable Hydropower Operations at Enel Green Power**
Glen Harrison, ABB

2:15-3:00 **Investigation on Partial Discharge Activity and Insulation Life of a Large Hydro Generator**

Reza Soltani, PowerTech Labs

3:00-3:45 Coffee Break

3:45-4:30 **Increasing Iberian Hydropower Fleet Flexibility With the Latest Digital Technologies**

David Tessier, GE Renewable Energy

4:30-5:15 **Dinorwig Update: Balancing Intermittent Renewables With Europe's Largest PSH Plant**

*Roger Clarke-Johnson & Greg Yohe,
American Governor*

5:15-7:30 Exhibitor Networking Reception

Engage with over 70 exhibitors and sponsors, as well as other key industry stakeholders, including utilities, service providers, consultants, and manufacturers.

Agenda is subject to change without notice.

Hydropower Day 2: March 4, 2020

7:00-8:15 Breakfast

Celebrity Ballroom

Session 3A: Dam Safety and Plant Reliability

Session Chairs: **Ambassador Ballroom**
Bruce Muller, CEATI International
Hugh Armitage, Southern Company

8:15-9:00 **Asset Integrity Management of Vintage Penstocks Using Modern Engineering Analysis**
Erik Jensen and Eric Scheibler, Quest Integrity with SCE

9:00-9:45 **Data Driven Decisions for Emergency Repairs and Operations of Hydraulic Dam Structures**
*Brett Commander, BDI
Nathan Manning, Grant County PUD*

9:45-10:30 Coffee Break

10:30-11:15 **Breathing New Life Into Old Penstocks**
Mo Ehsani, Quakewrap

11:15-12:00 **Improving Earthquake and Other Emergency Resiliance and Recovery of Hydroelectric Facilities**
*Jim McDonald & Fred Grant, Simpson, Gumpertz & Heger
Patrick Le, Southern California Edison*

Session 3B: Plant Reliability

Session Chairs: **Oasis Ballroom**
Craig Bourassa, Avista
Ram Veeraraghavan, Tacoma Power

First results from High Rock Aerating Turbine Commissioning
*Neal Simmons, Cube Hydro
David Tessier, GE Renewable Energy*

Development of a Mobile Sensor Platform for Water Quality Monitoring
Daniel Deng, PNNL

9:45-10:30 Coffee Break

Rotating Equipment Fleet Screening and Risk Assessment Using Partial Discharge Analysis Tools
Raja Kuppuswamy, Dynamic Ratings

Matahina – Solving Generator Rotor Vibration & Structural Issues
Benoît Cournoyer, LDV Advanced Engineering

Session 3C: Operations and Planning

Session Chairs: **Rancho Mirage**
Don Ferko, OPG
Marcel Paul Raymond, CEATI International

Hydro Reservoir Management Through Modeling and Optimization
*Violette Berge, Artelys Canada Inc.
Michael Mosco, Evolugen (Brookfield Renewable)*

Scenario Analysis for Hydropower Operation Under Uncertainty
Bita Analui, University of California Irvine

9:45-10:30 Coffee Break

Visualization and Cost Analysis of Upcoming Outages
Stephanie Ludwig, Bonneville Power Administration

Sizing Wind and Solar Generation With Pumped Hydro Storage for Firm Renewable Power
Phillip de Mello, GE Energy Consulting

12:00-1:30 Lunch

Celebrity Ballroom

Session 4A: Dam Safety

Session Chairs: **Ambassador Ballroom**
Roger Raeburn, PacifiCorp
Annick Bigras, Hydro-Quebec

1:30-2:15 **Failure Modes Effects Analysis for Ajaure Dam**
Romanas Wolfsborg, EnergiForsk

2:15-3:00 **Dam Safety Maturity Matrix to Evaluate Health of USACE Dam Safety Program**
Jacob Davis and David Blackmore, U.S Army Corps of Engineers

3:00-3:45 Coffee Break

3:45-4:30 **Vegetation Control on an Old Embankment Dam as Part of Remedial Works**
Steven Doré-Richard, Hydro-Québec

4:30-5:15 **Quantitative Risk Analysis of Rhinedollar Dam - A FERC RIDM Pilot Project**
*Dean Durkee, Gannett Fleming
Matt Muto, Southern California Edison*

Session 4B: Plant Reliability

Session Chairs: **Oasis Ballroom**
Mikael Molinder, Uniper
Calum MacPherson, FortisBC

Spring Mounted Hydro Generator Rims, Theory and a Case Study in Replacement
*Jason Sinkhorn, Electromechanical Engineering Associates
Howard Moudy, National Electric Coil*

Magnetic Balancing System Removing Unbalanced Magnetic Pull and Synthetic Inertia to Reduce Turbine Wear and Tear
Urban Lundin, Uppsala University

3:00-3:45 Coffee Break

Hydrogenerator Visual Inspections - An Outdated Tool?
Nicolas Dehlinger, Iris Power

Automatic Combination (CAM) Curve Optimizing System for Kaplan and Bulb Turbines
Mike Wallin, Reivax

Session 4C: Hydrology and Inflow Forecasting

Session Chairs: **Rancho Mirage**
Bruno Benedetti, Brookfield
Ann McManamon, Bonneville Power Administration

Crowdsourcing Improved Sub-Seasonal Prediction: Forecast Rodeo I & II
Ken Nowak and Jennifer Beardsley, U.S Bureau of Reclamation

Building Hydroelectric Control Systems to Increase Operational Flexibility in High and Low Inflow Scenarios
Brent Buffington, Southern California Edison

3:00-3:45 Coffee Break

Bridging Physical Hydrology and Neural Networks for Reliable Streamflow Forecasts
Alden Keefe Sampson, Upstream Tech

Upgrading Water Level Gauge Infrastructure to Meet Evolving Operational Requirements and Address Systematic Failures
Don Ferko, Ontario Power Generation

Women in Power Networking Reception

Ambassador 5-6

5:30-7:00 Please note that all conference attendees of CEATI's 2020 Hydropower Conference are welcome to register and partake in the Women in Power Group's reception; however, please make sure to register ahead of time by emailing wip@ceati.com.

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Registration Form

Register online at www.ceati.com/Hydro2020

Your Information

Name

Title

Organization

Street Address

City, Province, State


Country


Postal/Zip Code

E-mail

Phone

Payment Options

Visa 

Mastercard 

Card No.

Expiry Date /

Signature

Cardholder

Registration Fees & Discounts

- \$1,295 Standard Registration
- \$1,045 Utility Pass
- \$775 USD CEATI Participant Pass
- \$775 USD Confirmed Speaker

Exhibition Fees

- \$4,495 USD Gold Exhibitor Booth (2 passes)
 - \$3,995 USD Silver Exhibitor Booth (2 passes)
 - \$3,495 USD Standard Exhibitor Booth (2 passes)
 - \$1,600 USD Conference Sponsor
 - \$775 USD Additional Exhibitor Passes
- Quantity: _____

For Exhibitors: All cancellations received 60 days prior to the event will be subject to a processing fee of 25% of the total amount. There will be no refunds granted after this date. Delegate substitution is permitted at no extra cost. Exhibitor registration and additional conference passes include proceedings package, access to the presentation room, breakfast, breaks, lunches, and reception where indicated on the schedule.

Important Information

Registration fees include proceedings package, breakfast, breaks, lunches and reception where indicated on the schedule.

- Please check if you wish to be contacted about allergies or other dietary requirements.

Prices are in USD. Charges will appear as 'CEATI International Inc' and are subject to applicable taxes and fees. All cancellations received at least 60 days prior to event will be subject to a \$200 processing fee. There will be no refunds granted after this date. Delegate substitution is permitted at no extra cost. Please note that all names registering for the event will be added to CEATI's mailing list. If you do not wish to be included in this electronic outreach, please click on the 'unsubscribe' button in the email to remove yourself. In the spirit of industry networking, your name, title, employer and email may be shared with other conference participants. If you do not wish to have this info shared, please contact us at events@ceati.com. By attending, you acknowledge that there may be photographs or videos taken of you during this event, and you consent to the use of these photographs or videos in future CEATI communications.

Completed registration forms can be sent by email to events@ceati.com

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All conference guests are eligible for a preferred rate of \$244 USD a night subject to availability. The preferred rate only available until January 12, 2020. Make reservations [online](#).