The Challenges of Dams in Cold Climates
Design, Construction, Permitting, Environmental, and Sustainability Issues
Focusing on
Alaska, Canada, and High Elevation Dams
September 20-22, Girdwood, Alaska

Tuesday, September 19
6:00 pm – 7:00 pm      NHA/USSD Welcome Reception

Wednesday, September 20
7:30 am – 6:00 pm      Registration Desk open
7:30 am – 8:30 am      Continental Breakfast and Exhibition
8:30 am – 10:15 am     Plenary Session, Part One
Moderator -- Denise Bunte-Bisnett, Santee Cooper

Welcome and Introductions
Robert Cannon, Schnabel Engineering; and Denise Bunte-Bisnett, Santee Cooper

Cold Climate Dam Engineering and Operation in Alaska: Case Studies
Charles Cobb, State Dam Safety Engineer, Alaska Department of Natural Resources

Dams in Cold Climates: Lessons Learned
Doug Johnson, Federal Energy Regulatory Commission, Portland

IHA Hydropower Sustainability Protocol
Joerg Hartman, Sustainability Consultant

10:15 am – 10:45 am     Break

10:45 am – 12:15 pm     Plenary Session, Part Two
Moderator -- Robert Cannon, Schnabel Engineering

Overview of Alaska Affordable Energy Strategy and the Role of Hydropower
Neil McMahon, Alaska Energy Authority

Special Alaska Requirements to Permit Hydropower and Other Dams
David Schade, Alaska Department of Natural Resources

Cold Weather and High Altitude Dam Construction -- Twin Lakes Dam Enlargement Project Case Study
Daniel L. Johnson, AECOM; Dan Hertel, Engineering Solutions; and Ted Feldsher, AECOM
12:15 pm – 1:30 p.m.  Lunch and Special Presentation
Moderator -- Robert Cannon

ASCE’s Cold Regions Engineering Division: Standards, Manuals of Practice Case History Documentation
Thomas G. Krzewinski, Golder Associates, former President of the International Association of Cold Regions Development Studies (IACORDS)

1:30 pm – 3:00 p.m.  Track A - Part 1: Investigation, Design, Construction and Operation of Dams in Cold Climates
Moderator – Frank Immel, Global Diving

Selection of Dam Types for Cold Climate and High Altitude Conditions
Glenn Tarbox, Stantec

Cost Estimating for Cold Climate Construction
Kevin Schneider, Barnard Construction Company

Applications and Performance of Exposed Waterproofing Geomembrane Liners on Dams in Extremely Cold Climate and Icy Conditions
John Wilkes, Alberto Scuero, and Gabriella Vaschetti, Carpi Tech

1:30 pm – 3:00 p.m.  Track B – Part 1: Environmental Sustainability – Plans, Studies and Permits in Alaska
Moderator—Denise Bunte Bisnett

Hydropower and Fish: Considerations and Case Studies for Sustainable Development in Alaska
Megan Marie, Alaska Department of Fish and Game

What’s Needed to Obtain Water Rights for FERC and Non-FERC Hydroelectric Projects
Carl Reese, Alaska Department of Natural Resources

Using Climate Science to Assess Long-Term Effects of Dams on Salmon
Susan Walker, National Marine Fisheries Service, Alaska Region; Andrea J. Ray, NOAA Earth System Research Lab; and Joseph J Barsugli, NOAA-University of Colorado CIRES

3:00 pm – 3:30 pm  Break

3:30 pm – 5:30 pm  Track A – Presentations: Muskrat Falls Hydroelectric Development
Moderator -- Mike Pauletto, M. Pauletto and Associates, LLC

Muskrat Falls Project Overview
Ron Power, Nalcor Energy

Muskrat Falls Dams - Cold Climate Considerations
Greg Snyder, SNC Lavalin
Muskrat Falls North RCC Dam - Constructing in a Harsh Environment  
Anderson Koehler, Barnard Construction Company

3:30 pm – 5:30 pm  Track B - Part Two  

Planning Site Work at Cold Region Dams - Logistical Impacts of Short Summer Seasons  
Jennifer Richcreek, Kodiak Electric Association

Considerations in FERC Licensing of New Projects  
Kirby Gilbert, Stantec

Permitting and Gaining Acceptance for Sweetheart Lake Hydroelectric Project  
Duff Mitchell, Juneau Hydro

Emerging Federal Policy Affecting Hydro Development  
Chuck Sensiba, VanNess Feldman

5:30 pm – 6:30 pm  Reception and Exhibition  
Dinner on your own

Thursday, September 21  

7:30 am – 5:00 pm  Registration Desk open
7:30 am – 8:00 am  Continental Breakfast and Exhibition

8:00 am – 9:45 am  Track A Panel Discussion – Site C Dam, BC Hydro

Panel Moderator -- Mike Pauletto, M. Pauletto and Associates, LLC  
Bryan Forbes, GHD Australia  
Francisco (Paco) Ortega, Consultant  
Alfred Hanna, SNC Lavalin  
Rod Carter, BC Hydro

8:00 am – 9:45 am  Track B – Case Studies of Projects Successfully Permitted
Moderator -- Jeff Leahey, National Hydropower Association

Permitting, Licensing, and Environmental Issue Resolution for the Susitna-Watana Hydro, Southcentral Alaska  
Wayne Dyok, H2O EcoPower (Retired, Alaska Energy Association)

Project Development and Assessment of Site C, British Columbia, Canada  
Andrew Watson, BC Hydro

Thayer Creek Hydro  
Del Shannon, Barnard Construction Company

9:45 am – 10:15 am  Break
10:15 am – 12:15 pm  **Track A Presentations**

*Remote Access Drilling and Geophysical Program at Terror Lake Hydro Project, Kodiak Island*

**Gary Rogers,** Schnabel Engineering; and **Jennifer Richcreek,** Kodiak Electric Association

*The Challenges of Design and Construction of Back Dam at Red Dog Mine*

**Tom Krzewinski,** Golder Associates

*Dense Asphaltic Concrete Faced Dams and DAC Core Dams: A Canadian and European Solution for Short Construction Periods and Ice-Covered Reservoirs*

**David Wilson,** WALO

10:15 am – 12:15 pm  **Track B – IHA Hydropower Sustainability Assessment Protocol**, presented by **Dr. Joerg Hartman**

*General Introduction: background, evolution, governance, methods, results*

*Overview of Case Studies*

12:15 pm – 1:30 p.m.  **Lunch and Special Presentation**

**Moderator** – **Denise Bunte-Bisnett**

*Permitting, Cost and Technical Challenges of Removing Lower Eklutna Dam*

**Brad Meiklejohn,** Alaska State Director, The Conservation Fund

1:30 pm – 3:30 pm  **Track A Presentations**

*High Production RCC and Mass Concrete Operations in Extreme Climate Conditions for Large Dams and Hydro Projects Worldwide*

**Ted Warren,** RCC Presa Associates International LLC

*Design and Construction Issues for the Planned RCC Susitna Dam*

**Wayne Dyok,** H2O EcoPower (Retired, Alaska Energy Association)

*Mile-High Cold Weather Marine Construction Mitigation Techniques*

**Jared Bell** and **Scott Korab,** Ballard Marine

*Unique Challenges of Floating Barriers in Cold Climate Regions: Case Studies*

**Greg Saunders,** Revelstoke Design Services, Ltd.

1:30 pm – 3:30 pm  **Track B – IHA Hydropower Sustainability Assessment Protocol,** continued

1.  *Lessons Learned and Case Studies from Protocol Applications in Iceland, Norway, Sweden and Canada*

2.  *Exercises: How to Score the Sustainability Performance of a Project Against International Best Practices*
3:30 pm – 4:00 p.m.  Break

4:00 pm – 5:00 pm  Track A Presentations

Sweetheart Hydro Near Juneau, Alaska --Constructing a Large RCC Dam with no Road Access: Design and Construction Considerations
Tom Fitzgerald, Schnabel Engineering and Duff Mitchell, Juneau Hydro Inc.

Moose Creek Dam/Chena River Lakes Flood Control Project, North Pole, Alaska: USACE Design, Cost, and Constructability Considerations for CSM Barrier Walls in the Far North
Coleman Chalup and Derek Maxey, U.S. Army Corps of Engineers

4:00 pm – 5:00 pm  Track B – IHA Hydropower Sustainability Assessment Protocol, continued
Moderator – Jeff Leahey, NHA

Discussion: Practical requirements for assessments, added value of assessments, possible next steps in Alaska, closing panel

Friday, September 22
8:00 am – 4:00 pm  Field Tour to Lower Eklutna Dam Removal Project

The field trip will leave the Hotel Alyeska at 8:00 a.m. and will return to the hotel by 4:00 p.m. Arrangements will be made for those with rental cars to leave their cars in Anchorage during the tour, and/or to take participants to the Anchorage airport by 3:00 p.m. Please do not schedule any departures before 5 pm.

Transportation during the tour will be provided in private vehicles. Please plan to be in the lobby of the hotel by 7:30 am to work out the transportation details.

The dam removal project involves the demolition of the 61-foot high concrete Lower Eklutna Dam. The tour also includes a visit to a smaller dam on the glacial Upper Eklutna Lake in a scenic glacier-carved valley. The lower reservoir is filled with sediment, and the dam is obsolete. The demolition is intended to reestablish a salmon run in the Eklutna River. At the time of the field trip, the dam will be about 50% demolished. For those who want to walk down to the dam site, it is a strenuous climb down and back up a 400-foot aluminum staircase.

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