Canadian Dam Association
Annual Conference 2011

Surveillance and Safety

Fredericton, New Brunswick, Canada
15-20 October 2011

PLENARY SESSION 1:  (Monday, October 17, 8:30 – 10:00)
KEYNOTE ADDRESS / CONFÉRENCIER D'HONNEUR
CDA Guidelines – More Peaks to Climb  \( \text{N/A} \)
Tony Tawil, Senior Geotechnical Consultant, Hatch

SESSION 1A:  (Monday, October 17, 10:30 – 12:00)
PETITCODIAC DAM DECOMMISSIONING / MISE HORS SERVICE DU BARRAGE PETITCODIAC

Petitcodiac Dam Decommissioning – Opening of Causeway Gates and Construction of Dykes  \( 2 \)
A. Small, J. Paynter, M. French & K. Peck

Monitoring of Physical Changes Associated with the Opening of the Gates at the Petitcodiac River Causeway, Moncton, NB  \( 14 \)
D. DeMerchant, P. McNeil, A. DeMerchant & D. Bray

SESSION 1B:  (Monday, October 17, 10:30 – 12:00)
DAM SAFETY ASSESSMENT / ÉVALUATION DE SÉCURITÉ DES BARRAGES

New Approach Object Rules for Safety Dam Assessment System  \( \text{N/A} \)
F. Oudjehane & C. Ghayad

Application of the US FEMA Publication 94 for IDF Evaluations on High Hazard NRCS Dams  \( 35 \)
J. Bellini

What’s the Risk? – Understanding Public Perception of Risks Associated with Dams  \( 50 \)
N. Griesbrecht, T. Bennett & R. Schmidt

SESSION 2A:  (Monday, October 17, 10:30 – 12:00)
DAMS AND THE ENVIRONMENT / BARRAGES ET ENVIRONNEMENT

Consideration of Environmental Losses for Dam Classification  \( 65 \)
S. Eagen & G. Geenaway

Observations Made on a 300 Year Old Acadian Dyke  \( 74 \)
C. Gräpel & K. Leopold

Coastal Erosion and Sea Level Rise – Assessment and Phase I Mitigation, Indian Island First Nation, New Brunswick, Canada  \( 87 \)
J. Sims, H. MacQuade, W. Jones, K. Barlow & V. Kelbie
SESSION 2B: (Monday, October 17, 13:00 – 14:45)
INSTRUMENTATION AND MONITORING PROGRAMS / PROGRAMMES D'INSTRUMENTATION ET DE CONTRÔLE

Overcoming Challenges with Instrumentation Installation at Highland Valley Copper L-L Dam
D. Willms, N. Singh, T. Martinson & C. Flemming

Reliability and Efficiency of Dam Deformation Monitoring Schemes
A. Chrzanowski, A. Szostak-Chrzanski & R. Steeves

Tsankov Kamak Double Curved Concrete Arch Dam Practical Considerations to Implement an Instrumentation Program
J. Brehe, M. Dupuis & S. Thivierge

Dam Safety Review: New Concrete Quality Designation Based on Ultrasonic Pulse Velocity
F. Saint-Pierre & A. Philibert

PLENARY SESSION 2: (Tuesday, October 18, 8:30 – 10:00)
KEYNOTE ADDRESS / CONFÉRENCIER D'HONNEUR

Vale Dam Safety Program
Trevor Ross, Dam Safety, Vale

SESSION 3A: (Tuesday, October 18, 10:30 – 12:00)
MINING DAMS / EXTRAIRE BARRAGES

Evaluating Pore Pressure Buildup in Upstream Tailing Dams
B. Saad, H. Mitri & T. Hamade

Managing Short Term Risks at Kerr Mine Tailings Impoundment
Priscu, Trollope, Slater, Kaczmarek & Verma

Diavik Dikes – 10 Years On – A Performance Review
A. Rattue

Update on CDA Mining Dams Bulletin
A. Small

SESSION 3B: (Tuesday, October 18, 10:30 – 12:00)
HYDROLOGY AND DESIGN FLOOD / L'HYDROLOGIE ET LA CONCEPTION DES INONDATIONS

Quantifying Hydraulic Capacity of Flow-Through Rockfill Spurs - Preliminary Methods
A. Roshanfekr & D. Hansen

Flood Frequency Analysis of the Mersey River, Nova Scotia, using Bivariate Extreme-Value Distribution
Z. Zakeria & P. Mitchelmore

Potential Problems Created by the New CDA Inflow Design Flood Determination Methodology
SESSION 4A: (Tuesday, October 18, 13:00 – 14:45)
CONSTRUCTION CASE STUDIES / ÉTUDES DE CAS DE CONSTRUCTION

The Ashlu Hydroelectric Project: A Case Study of a Run-of-River Hydroelectric Project in Southwest BC
R. Humphries, C. Tremblay, C. Harrison, C. Chartrand & R. Blanchet

The Design of Eight Run-of-River Hydroelectric Projects Constructed and Commissioned in British Columbia Over the Last Three Years
S. Mottram & E. Sherman

Responsible Dam Ownership Safety and Surveillance
V. Latour & P. Mitchelmore

Grand Falls Generating Station Restoration - After the Great Flood of 2008
D. Gaudet, P. Rozzini & F. Harriman

SESSION 4B: (Tuesday, October 18, 13:00 – 14:45)
REHABILITATION CASE STUDIES / ÉTUDES DE CAS EN RÉHABILITATION

Kearney Lake Dam - IDF Upgrade using a Buried Weir
G. Snyder, B. Parker & M. Laycock

Rehabilitation of the George H Nichols Multi Purpose Dam using Articulated Concrete Blocks
J. Bellini

Pinawa Diversion Dam - Rehabilitation Design, Evaluation and Construction
K. Matusiewicz, K. Bannister & D. Dubois

Évaluation des risques et modélisation a l’aide d’une analyse pare éléments finis d’un barrage affecté par une importante érosion de sa structure en béton
É. Auzolles, L. Degueldre & C. Semler

SESSION 5A: (Tuesday, October 18, 15:15 – 16:30)
INVESTIGATION AND REPAIR OF DAMS / INVESTIGATION ET LA RÉPARATION DES BARRAGES

Injection de la jonction de deux digues en terre
M. Lauzon, M. Lizotte & S. Lopez

Eliminating Leaky Joints: Buried Conduit Design at the Tower Road Reservoir
T. Lahti

The Use of Sonic Drilling in Support of a Double-Line Grout Curtain at Wolf Creek Dam
S. Bratton
SESSION 5B: (Tuesday, October 18, 15:15 – 16:30)
INNOVATIONS IN INSTRUMENTATION / INNOVATIONS DANS L'INSTRUMENTATION

- A Study of the Use of GPS Sensors for Structural Monitoring of the Mactaquac Dam
  J. Bond, D. Kim & J. Fletcher

- MEMS-Array Monitoring of a Dam
  L. Danisch, T. Patterson & J. Fletcher

- Borehole Radar Investigations at the Mactaquac Dam
  B. Giroux, K. Butler & D. B. McLean

PLENARY SESSION 3: (Wednesday, October 19, 8:30 – 10:00)
KEYNOTE ADDRESS / CONFÉRENCIER D'HONNEUR

- The Lower Churchill Project – Changing the Energy in Atlantic Canada
  Gilbert Bennett, Vice President of Lower Churchill Project

SESSION 6A: (Wednesday, October 19, 10:30 – 12:00)
LOWER CHURCHILL PROJECT / PROJET DU BAS-CHURCHILL

- Special session presented by the Lower Churchill Project
  Session spéciale présentée par le Projet du Bas-Churchill

SESSION 6B: (Wednesday, October 19, 10:30 – 12:00)
DAM SAFETY / SÉCURITÉ DES BARRAGES

- Special session presented by the Dam Safety Committee of CDA
  Session spéciale présentée par le Comité de sécurité des barrages

SESSION 7: (Wednesday, October 19, 13:00 – 14:45)
STRUCTURAL SABILITY / STABILITÉ STRUCTURELLE

- NDT Monitoring of Sliding Surfaces in Concrete Dams
  Z. Moradian, E. Taillet, A. Millet, P. Rivard, G. Ballivy & J. Lataste

- Characterization of the Roughness: Statistic Study of the Interfaces of Dams
  B. Rousseau, P. Rivard, G. Ballivy, J. Riss & A. Marache

- Earthquake Safety Evaluation of the Keban Dam As Based on New Seismo-Tectonic Model of Turkey
  H. Tosun

- The Effect of Construction Induced Strains on the Permeability of Plastic Concrete Cut Off Walls Below Dams
  S. Hinchberger & J. Weck
SESSION 8: (Wednesday, October 19, 15:15 – 16:45)
MITIGATION OF ALKALI AGGREGATE REACTION / ATTENUATION DE RÉACTION ALCALINE DES AGRÉGATS

An International Review of the Occurrence and Status of Long Term Expansive Chemical Reactions in Dams and Hydropower Plants
R. Charlwood & K. Scrivener

Eliminating Alkali-Aggregate Reaction from New Dams
I. Sims, P. Nixon & B. Godart

Methods for Preventing Expansion due to Alkali-Silica Reaction in Concrete Dams
S. Hayman & M. Thomas