URHP 1997
Uprating & Refurbishing Hydro Powerplants

QUEEN ELIZABETH HOTEL
MONTREAL
CANADA

1-3 OCTOBER 1997

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International Water Power and Dam Construction/Wilmington Business Publishing
UPRATING AND REFURBISHING HYDRO POWERPLANTS
QUEEN ELIZABETH HOTEL
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WEDNESDAY 1st OCTOBER 1997

9.00 Welcome from Alan Wagstaff
9.05 Opening speeches- Mr Jean-Pierre Brassard, Vice President, Canadian
Electricity Association and
Martin Hindley, Editor, International Water Power
and Dam Construction

Project Studies

9.20 Transient tests for uprating and refurbishment studies of “Suica” Hydro Power
Plant- E da Costa Bortoni, CAS Bordon, GL Tiago Fo, Ministerio da Educacao
e do Desporto, Peru

9.40 Rehabilitation of McCormick Units 1 and 2 - S Bhan, Acres International,
Canada

10.00 Runner Upgrade at the Bay D’Espoir Generating Station for Newfoundland and
Labrador Hydro - J Mallam, J L Kepler, Voith Hydro Inc, USA

10.20 Rehabilitation & Uprating of the Waltham Hydro Powerplant - J Konczynski, C
Plouffe, CIMA, Canada

10.40 COFFEE

11.00 Diagnosis and solution of severe hydro-mechanical vibrations following the
upgrading of a 30MW hydro station - G J Gibberd, WS Atkins, UK

11.20 Beauharnois Powerplant 2 - modernization project - C Marchand, B Boyer, GE
Hydro, USA

11.40 Revitalization and modernization of the hydro power station (HPS) “Spilje” - N
Vladimir, P Vlatko, Electric Power Company of Macedonia, Republic of
Macedonia

12.00 Snare Falls, rehabilitation and upgrading at a very remote hydro site, lessons
learned - P C Helwig, C MacNeil, L Urban, Northwest Territories Power
Corporatioin, Canada

12.20 Integrated plant improvement with overall asset managament strategy - N Nielsen,
BC Hydro, Canada

12.40 QUESTIONS

12.55 LUNCH
14.30 Rehabilitation of 1000 years old Fairman Dam - M E Omran, H Abbas, Mahab
Ghodss Consulting Engineers, Iran

14.50 Project on rehabilitation of small hydropower stations in Russia including
Hydroplus fusegates utilisation - A A Alla, Hydroplus France and V B
Rodionov, M E Lounatsi, Scientific Research Institute for Energy Structures,
Russia

15.10 Stability evaluation of Plavinas HPP, Latvia - A Bolmanis, Lartvenergo, R
Lauritzen, T Valstad, Norwegian Geotechnical Institute of Norway

15.30 Evaluation of concrete coatingsto reduce head losses at Bersimis-1 generating
station tunnel walls - J Mirza, V Roy, K Saleh, S Trembaly, C Lemire, IREQ,
Canada

15.50 COFFEE

16.10 Design, construction & performance of geomembrane facings as repair methods
of dams in cold climates - A Scuero, G Vaschetti, CARPI, Italy

16.30 Civil works/hydraulic aspects. Weir resistant concrete for spillways -
J L Cabiron, LAFARGE Aluminates, France

16.50 A case history of the development, monitoring and utilization of a “Smart Drill”
and “Steerable Downhole Tooling” at the RH Saunders Generation Station - R V
Dowdell, Ontario Hydro, Canada

17.10 QUESTIONS

17.30 CLOSE
THURSDAY 2nd OCTOBER 1997

09.00 OPEN

Turbines

09.10 Influence on surface roughness to turbine performance - A Nichtawitz, Voest Alpine MCE, Austria

09.30 Estimating losses due to surface roughness in hydraulic turbines - B Masse, M Page, A-M Giroux, Institut de Recherche d'Hydro Quebec, Canada

09.50 Research on the erosion of Francis turbine - H Kamii, Hokkaido Electric Power Company, Japan and T Yoshikawa, Fuji Electric Co, Japan

10.10 Refurbishing and modifying Rangipo Hydro Turbines - to survive with volcanic ash in the waterway - J Scott-McDonald, A van Rossen, ECNZ, New Zealand

10.30 Assessment of expected life of Kaplan turbine runner chambers - V Demyanov, S V Ivanov, LMZ, Russia

10.50 COFFEE

11.10 Achieving Optimum Performance with high settings - E J Dumbleton, ECNZ, New Zealand

11.30 Experience gained in refurbishing the runners of Dnieprosvskaya HPS - E V Orlov, V N Steponov, AA Varlamov, I M Pylev, LMZ, Russia and A I Popov, HPS, Russia

11.50 Upgrading methodology from existing to upgraded and optimised turbines - B G Holt, G Gulbrandsen, P Ligaard, Kvaerner Energy, Norway

12.10 Governor upgrading and replacement options - A A Oetken, Woodward Governor, USA

12.30 LUNCH

14.00 Modifications to one of the (Manitoba Hydro) limestone generating station turbine runners to increase the runner blade to discharge ring clearance - T W Dean, Acres International, Canada and L Mansour, GE Hydro, Canada

14.20 Increase of annual energy production in Kaplan power plants by CFD-optimized new runners - R Grunder, R Brandt, Sulzer Hydro, Switzerland

14.40 Application of cored wires for construction and repair welding of hydro turbine runners - J van den Broek, Filarc Welding Industries BV, The Netherlands

15.00 QUESTIONS
15.15 COFFEE

Generators

15.40 Refurbishing and uprating of generators and other electrical equipment in old hydro power plants, for example at HPP Bosdornau - J Gruber, Verbundplan GmbH, Austria and J C Scherntanner, Tauernkraftwerke AG, Austria

Pages 245-254

16.00 La Rance re-adjustment of a stator by the injection of elastomer - MRM Mazzocco, EDF, France

Pages 255-258

16.20 Improving the performance of hydrogenerator thrust bearings - J Ferguson, GE Hydro, Canada

Pages 259-268

16.40 Practical rewind specifications for 0.6 to 5 KV class hydrogenerators - JE Timperly, DL Purzycki, North American Hydro Inc, USA

Pages 269-278

Structural Upgrades

17.00 Replacement and refurbishment of the Beauharnois Hydro Power Station intake gates, gate guides and hoists - P Chaput, D Gawish, M Limoges, Hydro Quebec, Canada

Pages 279-288

17.20 Rehabilitation of a low level dam outlet gate at Whakamaru Power Station - S Tritt, B E Mipenz, ECNZ, New Zealand

Pages 289-304

17.40 QUESTIONS

18.00 CLOSE
FRIDAY 3rd OCTOBER 1997

09.00 OPEN

Modelling & Control

09.10 Hydro power monitoring (HPM). The HPM concept - recent developments in “on-line monitoring for large hydro machinery applications - M Marke, P Ponzetta, ABB Power Generation, Switzerland

Pages 305-318

09.30 Benefits of on-line monitoring system in operating and refurbishing generators at Rapide-des-Illes Power Plant - Y Houle, VibroSystM, Canada and C Major, G Allen, Hydro Quebec, Canada

Pages 319-328

09.50 Upgrading of HPP “Spilje” power installation and the benefit in control of power system - G Cogelja, V Papadimitrov, Electric Power Company of Macedonia, Republic of Macedonia

Pages 329-338

10.10 Application of El CID with salient-pole rotor in-situ - G K Ridley, Advel International, UK

Pages 339-346

10.30 COFFEE

Cavitation

11.00 Quantifying Cavitation Mitigation in Uprating or Refurbishment Projects - M Farhat, P Lavigne, M Ray, P Bourdon, Hydro Quebec, Canada

Pages 347-356

11.20 Cavitation repairs using the super compact robot “SCOMPI” in-situ - Y Larouchue, J L Fihey, Institute de Recherche d’Hydro Quebec, Canada and Y Mossoba, Hydro Quebec, Canada

Pages 357-366

11.40 QUESTIONS

Pages 367-382

12.00 LUNCH

Economics

13.30 Why not upgrade a hydro powerplant by a third party financing? - L Faoro, Tractebel Engineering International, Belgium

Paper not available in time for printing

13.50 Uprating and refurbishment of hydro power plants in India and its financing arrangement - I M Sahai, Consultant, India

Pages 383-392

14.10 The North American market in the Year 2000, a shap shot:- What is going to be left as regulation in North America, trends and reality - F Nemengut, Reed Consulting Group, USA

Paper not available in time for printing

14.30 Who takes the price risk, merchant plants and electricity as a commodity - P Jutras, PAJ Energy Inc, Canada

Paper not available in time for printing

14.50 QUESTIONS
Environmenta

15.30 Sedimentation of the reservoirs of the Durance-Verdun Hydropower Scheme. Appraisal and solution studies - B Reverchon, Electricite de France Generation and Transmission Division, France

15.50 Addressing aesthetic issues at a hydro site with special scenic qualities: Innovative process design and analysis strategies applied at Shoshone Falls - M Gale, T Priestley, Environmental Vision, USA

16.10 Summer habitat movement of brown trout below a peaking hydroelectric station - C Bunt, S Cooke, R S McKinley, University of Waterloo, Waterloo Bioelevetry Institute, Canada and C Katopodis, Fisheries and Oceans Science Branch, Canada

16.30 Swimming performance of migrating Atlantic salmon in a vertical slot fishway - M Colavecchia, R S McKinley, University of Waterloo, Waterloo Bioelevetry Institute, Canada and D A Scruton, Fisheries and Oceans, Science Branch, Canada

16.50 QUESTIONS

17.10 CONFERENCE CLOSES

POSTER PAPERS

A new capacitive proximity probe to overcome eddy current probe limitations - J Lin, VibroSystM Inc, Canada

A numerical method for the computation of the bed degradation downstream of a dam - D Termini, G Bonvissuto, Hydraulic Department - University of Palermo, Italy and M S Yalin, Department of Civil Engineering, Queen’s University, Canada

Runner wear survey - a 3D approach - J Messersmith, J Alward, Y Richer, P Guillot,

Enlargement of Okukiyotsu Pumped Storage Power Plant - K Fujino, Y Mizuhashi, EPDC, Japan

Uprating and refurbishing of waterway-systems and weirs - H-B Matthias, E Doujak, Institute for Waterpower and Pumps, Vienna University of Technology, Austria

Research on sediment control before an hydro-plant - J Lahua, Department of Environmental Engineering, Nanchang University, China