Power Vision Engineering

Solutions & Expertise in Hydropower
Transients and Operation

Key competences:
• Hydraulic, Electrical and Mechanical Engineering
• Hydroelectric Systems Dynamics
• Power Network Stability
• Software Development

References for Transient/Stability Analysis:
• Cleuson-Dixence, CH, 3x423MW Pelton turbines
• FMHL+, CH, 420MW Ternary units Pelton, pumps
• Nant de Drance, CH, 900MW Francis pump-turbines
• Avče, SL, 185MW Francis pump-turbines
• Electra-Massa, CH, 340MW Pelton turbines
• Hauterive, CH, 75MW Francis w pressure relief valves
• Lavey+, CH, 4x30MW Kaplan turbines
• Lago Bianco, CH, 1050MW Ternary units Pelton, pumps
• EDF, F, 900MW Francis pump-turbines

R&D Projects:
• HYPERBOLE European Project N°608’532 FP7-ENERGY-2013 Program (3 years)
• SIMSEN Advanced 1&2 project, with EPFL, ALSTOM, VOITH and ANDRITZ (2x2years)
• HydroNet II research project (3years) (CCEM, Swisselectric Research)

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Engineering:
• Water Hammer Calculation (incl. Francis, Pelton, Kaplan, Bulb, Francis Pump-turbine, Pumps, Ternary Units)
• Hydroelectric Transient Analysis (incl. DFIM VarSpeed)
• Energy Production Optimization (OptiPower software)
• Control System Optimization (incl. Turbine Gov., AVR, PSS)

SIMSEN Software:
• Software Distribution
• Development
• Maintenance
• Customer Support
• Training Seminars

System Stability Assessment:
• Full Load / Part Load Surge Analysis
• Rotor Stator Interactions
• Power Network Stability Analysis
  (incl. Isolated, Islanded, Interconnected Operation)
• Grid Code Compliance / Ancillary Services

Complex Flow Analysis:
• CFD Computation
• Hydroacoustic Resonance Analysis
• Two Phase Flow Phenomena
• Model Tests Follow-up