



## Home of the Acoustic Scintillation Flow Meter

### A new partnership between AQFlow, Hydro Quebec (Canada) and EDF DTG (France)

This partnership was created by EDF DTG (Electricité de France – Division Technique Générale) in order to improve the quality of its measurement services. EDF DTG has begun funding a three-year doctoral thesis concerning the acoustic scintillation flow meter so that the full potential of the system is reached.

The thesis is being developed at EDF DTG headquarters in Grenoble in the MPSH section (Métrologie et Performances des Systèmes Hydrauliques) with the participation of ASL AQFlow and Hydro-Quebec. The scientific support is provided by the research laboratory GIPSA Lab (Grenoble Images Parole Signal Automatique) which is very well known in France and abroad for its expertise in the signal processing field, together with EDF R&D.

EDF DTG provides support in areas like fluid dynamics and project management, as well as the physical and logistical support: DTG's ASFM system is used to perform tests in laboratory and on site; a test facility has been set up in order to study different measurement configurations and validate signal processing algorithms; DTG also provides all the logistical services for onsite testing and measurement.

The PhD work will concentrate on developing methods to reduce or eliminate the negative influences caused by unwanted vibration sources, oblique flow components, inequalities in the turbulence field, and interfering signal reflections, thus extending the capabilities of the scintillation method into previously unfavourable flow regimes.

At the end of the three year period, an enhanced version of the ASFM should be available featuring advanced signal processing techniques and possible modifications in hardware and signal processing software.



Bertrand Reeb (EdF), Gilles Proulx (Hydro Quebec)  
and David Lemon (AQFlow)



EDF, Hydro Quebec, and CEATI working  
together at Kootenay Canal.



Kootenay Canal Comparison Tests  
- ASFM and Current meters

## Acoustic Scintillation - Proven Technology

AQFlow offers a breakthrough solution for absolute flow measurement in short converging intakes: the Acoustic Scintillation Flow Meter (ASFM). Thanks to its design characteristics, the ASFM produces accurate and repeatable relative or absolute flows in even the shortest intakes, and can be installed on a permanent basis more easily than any other technology. Since the early 1990's, many low-head plant owners in North America, Europe and Asia have benefited from the ASFM technology.

## Other Hydro Solutions

Our parent company, ASL Environmental Sciences, offers a range of related services and products for other hydro applications, such as **flow surveys** and **numerical simulations** in forebays and tailraces and **remote sensing** including mapping and monitoring of watershed land use/cover, aquatic vegetation, and water quality and temperature.

See [www.aslenv.com](http://www.aslenv.com)



## Upcoming Conferences and Exhibitions



Visit AQFlow in  
Booth #1305

### HydroVision 2011 Sacramento, California

Visit AQFlow's David Lemon, President, and Jan Buermans, Sales Manager at AQFlow's booth.

**Session 5i** – Flow Measurement Methodologies  
for Optimal Performance,

Thursday July 21 2:30-4pm Room 313

*Flow measurement method comparisons will be discussed  
including the Acoustic Scintillation Flow Meter.*



Visit AQFlow  
in Booth #84

### Hydro 2011 Prague, Czech Republic

John Taylor, P.Eng., of BC Hydro will be presenting a technical paper:

"Turbine flow measurement in intakes - a cost-effective alternative to measurement in penstocks"

(written with J. Proulx, Hydro Quebec and J. Lampa, AQFlow Inc.)

*Comparing the cost of acoustic time-of-flight in penstocks with the performance and cost of current meters and acoustic scintillation in intakes of BC Hydro's G M Shrum power plant.*



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