

## Home of the **A**coustic **S**cintillation **F**low **M**eter

### The ASFM in Europe

ASL AQFlow was contracted by Electricite de France (EdF) to provide a leased ASFM system and services related to the installation and operation of a 2-bay, 2-paths/bay Advantage Acoustic Scintillation Flow Meter (ASFM) system for Unit 1 at the hydroelectric station at Kembs, on the Rhine River in eastern France, near Germany during the week of June 2006. The 2 Kaplan units and 4 Helice (fixed blade propeller) units at the Kembs have a combined power output of 150 MW.

Each Unit at the Kembs plant has four intake bays. The ASFM was equipped with four acoustic paths; two were mounted on each of the two open frames fitted into the

stop-log slots. Data were collected at 13 frame positions in the intake; two bays were collected at one time. The frames were then moved to the remaining two bays.

The program was carried out to establish unit performance and to determine the suitability of the ASFM for EdF. Training of EdF personnel on the setup and operation of the ASFM was also conducted by AQFlow.



### 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.

### Client Reviews

Reviews given by AQFlow clients may be found on our website at:

[Client Reviews](#)



## August 2006 Wells Dam Turbine Discharge Measurements



As a continuation of the ongoing measurement program, ASL AQFlow was contracted by the Public Utility District No. 1, Douglas County to assist in the installation and operation of their 3-bay, 10-paths/bay Advantage ASFM system in Units 1 and 2 at Wells Hydroelectric Project in Pateros, Washington. These successful measurements were another step in the program to establish individual unit performance and identify potential for further plant optimization. Training of District personnel on the setup and operation of the ASFM was also conducted.

The ASFM was equipped with 30 acoustic paths, which were mounted on open frames fitted into the stop-log slots. Each of the three frames was fitted with 10 paths. Pre-test measurements were performed in January 2004 to select the optimum locations for the 10 paths in each of the very short intake bays.

Measurements were done in Units 5 and 6 in August 2005 and in Units 3 and 4 in September 2004. Turbine discharge measurements will continue at Wells each year until all 10 units are done (2008).

## ASFM Sale to Korea

The Korea Water Corporation (Kowaco), of Daejeon, Korea has purchased an ASFM system. ASFM systems are in place in several hydroelectric dams in North America, but this represents the first sale of ASFM technology to Asia.

Following a visit to AQFlow headquarters and meetings with ASFM users during the summer of 2005, Kowaco has purchased a 10-path ASFM system along with related commissioning services for initial use at Yongdam power plant, a low head dam on the Geum River in southwestern Korea. The system has most recently been used at Kowaco's Namgang Plant, where an efficiency measurement program was successfully completed in the late spring of 2005.

Kowaco cited the ASFM accuracy, reliability and portability as the prime reasons for the purchase.



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