MJ2 TECHNOLOGIES S.A.R.L.

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TURBINE DE TRÈS BASSES CHUTES, VERY LOW HEAD TURBINE: NEWS LETTER N°7

IN THIS ISSUE

Our website has been updated. We have added a lot of information and downloadable videos to it

www.vlh-turbine.com

1rst TESTS WITH EELS AND EVALUATION OF 10 MONTHS OF OPERATION

Dear Friends and Partners,

10 months have elapsed since March 19, 2007, when the VLH unit has delivered its first kW to the public network, thus enabling us to make a first evaluation of our exploitation.

Installation of the eel recovery device downstream of the turbine

Further, as planned, we have carried out a test campaign with live eels on December 19 and 21. The quantitative tests have been completed with qualitative tests on January 14, 2008, where we have filmed the eels passing through the operating turbine.

You will be the first to read the results of these tests in the following pages, as well as a first evaluation of the VLH exploitation over 10 months of operation.

Besides, the line development carries on. The return on experience of the demonstration site, the wishes expressed by our clients, and the search for less expensive solutions have led us to introduce improvements in the design of the mechanical elements and of the electronic equipment.

Contract fulfilled!

Beyond the French market, for which we can acknowledge a fully satisfactory rate of orders, our foreign representatives have become familiar with the VLH concept and the sizing tools that they have been provided with. We are currently working on projects in Germany, Italy, Belgium, Spain, USA, Canada, and Chile.

Together with the MJ2 team and shareholders, I wish you health and prosperity for 2008. This year will see the development of our industrial activity with the launching of the first VLH series and probably the first export orders.

Marc Leclerc
General Manager

1RST TESTS WITH LIVE EELS

We have had to wait until December for the floods of the Loire and Tarn rivers to enable us to organize the tests.

The test device has been improved since the April tests with smolts, the recovery net is now provided with a floating platform which enables recovering the fishes as they arrive. The platform, the net and its frame are arranged by means of a crane.

Overview of the test device

The injection device is attached to the VLH distributor. The initial injection point is located at mid-height of the guide blade in the 12/19 tests.

Mid-guide blade injection

In tests subsequent to the 12/21, we have varied the injection point by positioning the pipe for an injection at the runner core, then at its periphery. This capacity to change the eel introduction point has allowed us to determine with great accuracy the survival rate according to the runner area crossed by the eels. (see chapter Results)

The eels are manually introduced into the injection pipe.

Installation of the recovery platform and of the net

Preparing the injection

Introduction of eels into the injection pipe

Said pipe directs them directly onto the guide blade where the stream line will lead them at the rotation speed of the runner that they will cross between the blades.

They are then recovered on the platform as they arrive.

Injection pipe

Fishing the eels with a dipnet from the net

« A more and more sophisticated and efficient test device»

EEL TESTS: FISH-FRIENDLINESS CONFIRMED

Preliminary test results (Figures under processing)

The eels have been injected at 3 points, that is, median, inner (close to the runner hub), and outer (close to the end of the blades and of the runner mantle).

A batch of 150 eels has been used. Their size ranges between 0.7 and 1.2 m and their weight ranges between 800 g and close to 2 kg.

Each injection has been performed by batches of some ten eels at a time and a reference batch of same features has been kept.

The eels have been separated in two batches according to their size (small up to 1 m and large beyond this size)

The preliminary results, before the collected data are further exploited, are the following:

Survival rate over approximately 100 individuals :

1. Inner 100%
2. Median 97%
3. Outer 84%

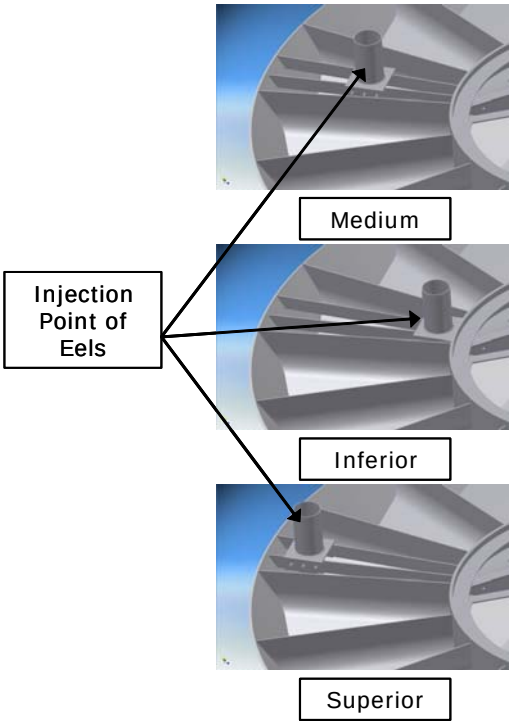
The estimated average survival rate thus appears to be greater than 95 %

It must be known, to appraise this result, that the survival rate of eels passing through conventional turbines is at most from 80 to 85%, and this for the largest river bulbs rotating at very low speed (runners with a diameter of some 7 m).

Comparing the VLH turbine with an equivalent turbine in terms of head and capacity, these first tests show that not only does **our machine provide the highest survival rate of all hydraulic turbines known to this day** but also that the induced mortality is from 5 to 10 times lower than that of an identical conventional turbine.

These new performances may definitively advantage VLH turbines over conventional turbines when a comparison with the existing situation on a river harnessed with a series of hydroelectric power plants is performed.

Indeed, even though the mortality rate of each site taken individually may appear to be acceptable, the cumulated effect ends up substantially impairing the result at the level of a basin.



As an example, on a river harnessed with 12 hydroelectric power plants, a recent simulation has resulted in a survival rate of 15% over the entire chain for a conventional equipment and of more than 80% for a VLH equipment. These results should all the more be appreciated as European regulation N° 1100/2007 advocates a survival rate higher than 40% per basin.

The survival rate can be further improved

Analyzing the deceased eels has enabled us, with advanced investigations performed by means of an underwater camera filming the passing through the runner, determining with certainty the origin of the encountered deaths.

These could be avoided by means of a local modification of the hydraulic contour. The feasibility of this modification is currently under study.

In this context, it is very likely that the objective of a survival rate per machine greater than 97-98% can be achieved.

« An average survival rate greater than 95%, that is, from 5 to 10 times better than equivalent Kaplan turbines »

EVALUATION OF 10 MONTHS OF EXPLOITATION OF THE MILLAU VLH

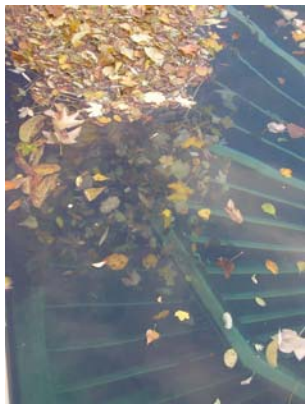
« The Troussy VLH confirms in all respects the result on small-scale model tests »

Almost one year of service. The VLH turbine has operated under the climates specific to the four seasons.

During substructure works for the future fish ladder, the raised VLH enables letting through the Tarn river flow integrally on the right bank side with no cofferdamming

It was commissioned in spring, and has then operated during the summer and has undergone a very severe autumn low water.

Autumn floods and the north wind which cause the falling of leaves have proved



The VLH absorbs whirls of dead leaves. The VLH has never been raked manually since its commissioning

the embarked bar screen, which is remarkably efficient.

Currently in winter operation at sustained rated capacity since the beginning of December, the VLH builds up a production which is in accordance with, or even somewhat higher than the estimates provided by economical feasibility studies.

We also have been able to test the ma-

The Tarn river on the 07/11/22 flood, head is decreased by half, the VLH still generates more than 220 kW

chine in strong low water level conditions, with very reduced flowrates and an exploitation head greater than the original design head. The structure has behaved very well and no weakness has been acknowledged. In terms of production, under very low flowrates, we have been able to check that the VLH can operate at powers of less than 10% of the maximum power and thus in fully satisfactory stability and vibration conditions.

Further, the power and head measurements performed in high water and reduced head periods complete those performed during the low water and confirm that the Troussy VLH is in perfect homothety with the tests on small-scale models.

The works of development of the Troussy site surroundings and of renovation of the historical building have enabled us to transfer the MJ2 headquarters and offices to Millau where we can carry on our tests and observations of this first unit while working on the design of the next models.

The site is now ready for the promised inauguration which had been postponed for climatic reasons, to as soon as the weather turns fine again.

You are all invited in advance. We shall inform you as soon as a date will have been agreed on with all our institutional partners, which would like to join us on this occasion.

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