

MJ2 TECHNOLOGIES S.A.R.L.

TURBINE DE TRÈS BASSES CHUTES, VERY LOW HEAD TURBINE: LETTRE D'INFORMATION N° 11

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MJ2 CONTINUES ITS INDUSTRIAL DEVELOPMENT MORE THAN 20 VLHS DELIVERED BY THE END OF 2011

Dear Friends and Partners,



Civil Works of Yenne HPP

By the end of October, MJ2 will deliver its 20th VLH on the Yenne site, on the Rhône, for the Compagnie Nationale du Rhône.

This is the first VLH DN 5000 produced by MJ2.

VLHs n° 22 and 23 have been finished in the assembly shop and are ready to be delivered in November on the Fraisans site on the Doubs river.



Prefabricated concrete elements at Fraisans HPP

On this site, the civil works company has decided to build the vertical structures with prefabricated panels. At the end of the works, we will analyze the advantages and drawbacks of this method, which is used for the first time with VLHs.



MJ2 Technologies workshop at La Cavalerie

Further, the industrial activity of assembly of the VLH bulbs by MJ2 is now well installed in its La Cavalerie premises, close to Millau. Some fifteen machines should be produced there in 2012 and we should



MJ2 Technologies offices and assembly shops

achieve by 2013 a production rate of more than 20 machines a year.

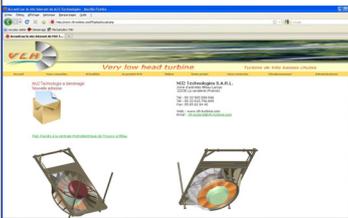
To face this development, MJ2 has hired new members, and will have some twenty employees by the end of the year.

Enjoy reading this letter

Marc Leclerc



HYDRO 11
Prague October 17 to 19
Come and meet us
in our stand n° 6



www.vlh-turbine.com

COMMISSIONING OF THE MARCINELLE HPP ON THE SAMBRE RIVER IN BELGIUM

The Marcinelle hydro power plant on the Sambre river in Belgium has been commissioned this year.



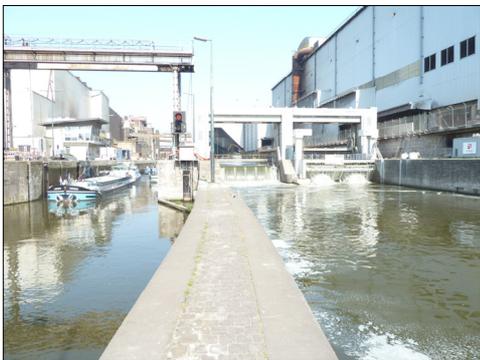
Craning of the 2nd VLH in the supporting structure

It has the original feature of being equipped with 2 DN 3550 VLHs directly assembled on the same supporting structure downstream of a level control gate bay.

Contractually, this supporting structure, of a total 60-ton weight, must be able to totally "withdraw" in case of a flood alert.

The selected solution is a metallic supporting structure moving vertically in four guide rails implanted in the lateral walls. The designer of the site, Mérytherm, has successfully tested this mobile structure in May.

The installation being fully remotely controllable, it has thus been demonstrated that once the upstream main gate is down, the



Downstream view of the VLH in operating conditions

two VLHs and their structures could be extracted in less than 20 minutes without having to be disconnected.

20 minutes later, the machines are back in

place and ready to start.



Downstream view of the VLHs and their supporting structure

Once all the operating parameters are validated and after acceptance of the equipment by the Walloon Ministry of Transportation,



Upstream view of the structure in lifted position

Mérytherm will set to designing 5 other similar projects on the Sambre river.



Downstream view of the structure in lifted position

"Prefabricated supporting structure allowing a withdrawal from the top"

NEW 2011 PROJECTS

In 2011, in addition to finishing the works started in 2010 such as in Marcinelle, Bel-

The features of visual integration and acoustic discretion of the VLH have enabled to



Terrasson stainless steel distributor and bar screen
 Note: the red marks are due to the soil under the workers' shoes



Bay where the DN 3150 VLH of the Fontgombault Abbey will be installed

gium, or in Terrasson, France, MJ2 has designed and assembled the turbines of the projects of Fraisans on the Doubs river, Yenne on the Rhône, Aubas on the Vézère river, and has received orders for deliveries in 2012 on the Adour, the Creuse, the Lot, and the Garonne

integrate it in a privileged, protected environment, the Cistercian Abbey of Fontgombault.



Concrete structure of the Yenne DN 5000 VLH



Downstream view of the Aubas HPP

« 1st delivered VLH DN 5000 and 1st ordered VLH DN 3150: The VLH range is now complete »

ivers.

One of these orders relates to the very first DN 3150 VLH, which will be integrated to a historical monument.

On the Adour river, at Barcelone de Gers, the new project is to replace the 6 existing turbines with 2 DN 4000 VLHs to be installed downstream of the gates and of the existing bar screen.



Artist's downstream view of the Fontgombault VLH



Upstream view of the Barcelone de Gers HPP

THE ASSEMBLY SHOP IS OPERATIONAL

« Operational assembly shop »

After moving into our new La Cavalerie premises (see NL nr. 10), the MJ2 team has set to installing the equipment necessary to the development of the VLH bulb assembly and testing activity.



General view of the assembly hall

The 800 m² assembly shop space has thus been divided into activity areas differentiated according to the nature of the assembly tasks performed therein:

- Assembly of small-scale mechanical parts, gate operating rings
- Alternator and line shafting assembly
- Bulb assembly
- Tests
- Grinding and painting
- Parts reception
- Storage

In 2011, 5 machines have been assembled there, including the first DN 5000 for the Yenne project on the Rhône.

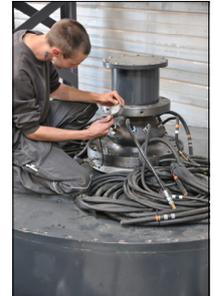


Preparation of a blade shaft of a DN 5000

The assembly starts with the parts reception and control. At the end of the line, the bulbs are closed back and pressurized.

The bulbs are thus maintained under pres-

sure and controlled for at least 48 h.



Dimensional check and tightness test on a bulb of one of the two DN 4000s of the Fraisans project

When the delay allows it, they can remain under pressure for several weeks.

To cope with this extra work and to prepare for the future, MJ2 has welcomed new staff members. By the end of 2011, we will be more than 20.



2 DN 4000 bulbs of the Fraisans project finished and under pressure test

In 2012, we will keep on hiring new members and our production rate should exceed one machine a month.



Preassembly of a blade control mechanism

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