ReHydro

Demonstration of Sustainable Hydropower Refurbishment

M4 Online monitoring systems installed in Valeira

Work Package	WP1 Improved hydropower refurbishment performance
Responsible	Joana Santiago, EDP
Milestone reached	30/01/2025

Task: T1.1 – Online Cavitation and Efficiency Monitoring

Milestone: MS4 – Online monitoring systems installed in Valeira

Description: As part of the ReHydro project, Voith designed and installed the cavitation monitoring system at the Valeira Power Plant, contributing to improved real-time monitoring and operational efficiency. The installed system consists of the following key components:

- Cavitation sensors: Two sensors per unit were installed to measure and monitor cavitation conditions in real time.
- Data acquisition system: This system processes and records data from the sensors, ensuring efficient storage and analysis of information. Additionally, it acquires five additional analogue signals from each unit: active power, speed, gate opening, blade opening and net head.
- Dedicated monitoring PC: The system includes a dedicated computer for data collection and analysis, enabling local monitoring. The cavitation status results are sent to the Voith Cloud, where they are available and visualized for remote access and analysis.

The installation was successfully completed within the scheduled timeframe, marking a significant step forward in improving real-time monitoring and cavitation assessment at the Valeira site.

This project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No. 101147310

Supporting Materials:

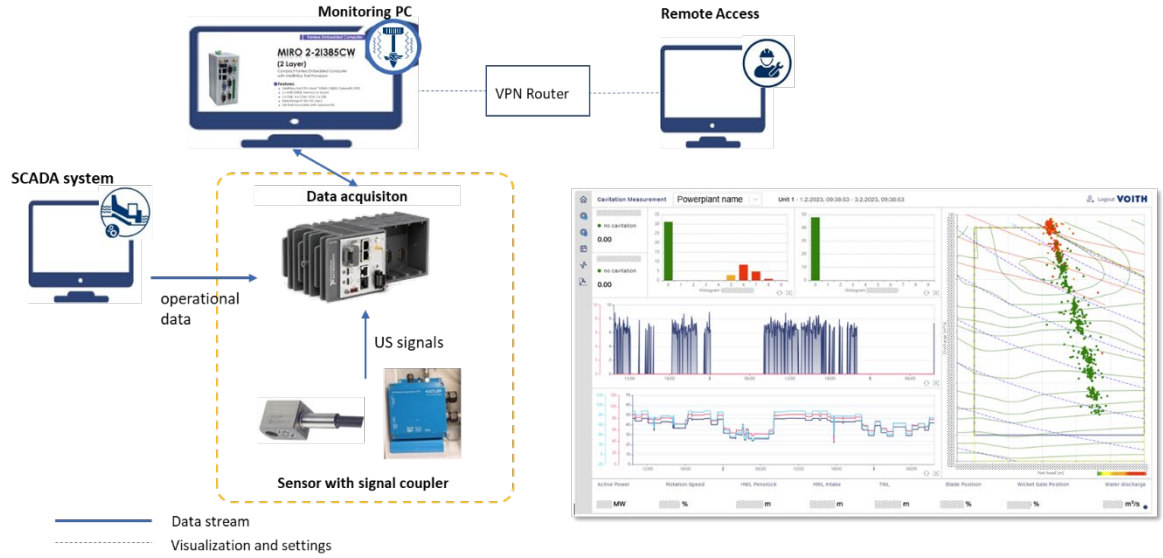

Figure 1. Cavitation monitoring system: Overview.

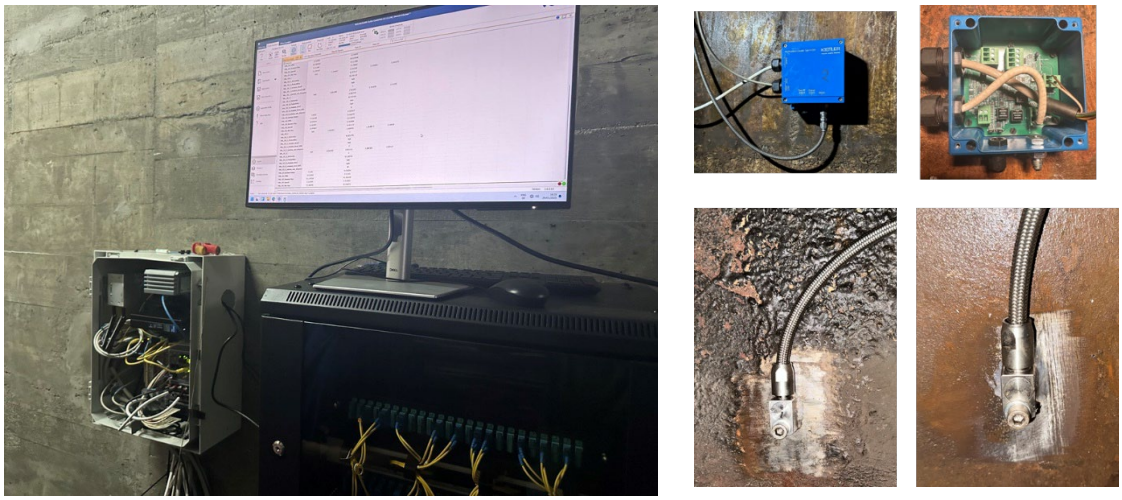

Figure 2. Monitoring cabinet and PC, sensors and coupler boxes at Valeira Power Plant.

DISCLAIMER / ACKNOWLEDGMENT

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