Wettingen

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Birdview of the powerhouse and dam area

Switzerland – A contract for the refurbishment and revision of the electro-mechanical equipment at the Wettingen hydropower plant in the Swiss canton of Aargau was awarded to ANDRITZ HYDRO in June 2016.

Built in the years 1930–1933, HPP Wettingen utilizes the waters of the river Limmat between the upstream power plant of Dietikon and the downstream facility of Baden-Aue.

Under the terms of the contract awarded by Elektrizitätswerk Zürich (ewz), the public energy utility of the City of Zurich, ANDRITZ HYDRO's scope of supply includes the revision and refurbishment of essential components of the three units. In addition, ANDRITZ HYDRO will conduct hydraulic model tests for the design of the new turbine blades, which are expected to raise the annual output of the facility by 4%.

Working in close collaboration with ewz to identify relevant operating conditions as accurately as possible, the turbines were examined for their optimization potential and specific solutions developed. ewz decided in favour of a solution that reduces operating costs while maximizing the availability of the units and ensuring their safe operation. Based on an initial analysis of the turbine shafts' remaining useful life, it was decided to replace them as well and to optimize the shaft coupling and gasket construction at the same time. Essentially, the rehabilitation of the generators comprises control, dry-ice cleaning, and revision of the stators and rotors as well as the revision of the poles at the workshop in Kriens, the installation of new oil mist extractors, and the revision, modification and replacement of various pumps, bearings and instruments. Due to the narrow dimensions of the installation, the new exciter had to be specially manufactured and optimized for use with the generator.

Having a single-source supplier for the entire electro-mechanical equipment has a lot of advantages. The ability to leverage synergies in terms of order processing, installation, revision, and commissioning means less coordination effort and lower costs for the customer.

The handover of the model test results is scheduled for December 2016. On-site refurbishment work will start with the first unit in September 2017 and is scheduled to be completed by April 2018. The other units will be refurbished successively at one year intervals, which means the last unit is scheduled to be handed over to the customer for commercial operation in April 2020.

This project not only reinforces a long-standing business partnership with ewz, but also strengthens ANDRITZ HYDRO's position as a single-source supplier for service and refurbishment projects in Switzerland.


Powerhouse

TECHNICAL DATA	
Output	3 × 8.5 MW / 3 × 10 MVA
Voltage	6.4 kV
Head	21.5–23 m
Speed	214.3 rpm
Runner diameter	2,835 mm
Av. annual production	135 GWh