

Switzerland Göschenen

In April 2014, ANDRITZ HYDRO Automation received from Kraftwerk Göschenen AG a contract for the complete secondary equipment rehabilitation at HPP Göschenen.

Originally built in early 1960s, HPP Göschenen comprises six units and produces electricity for approximately 100,000 households. Due to the new Swiss legal requirements to fulfill environmental conditions (e.g. residual flow through the power plant) a complete rehabilitation of the hydropower plant was necessary.

The scope of supply for ANDRITZ HYDRO Automation includes the rehabilitation of the existing secondary equipment consisting of unit control systems, turbine controller, unit protection and excitation systems as well

as their integration into the existing SCADA systems.

The main reasons for awarding ANDRITZ HYDRO the contract have been the good and long-term cooperation with the customer (first delivery of automation systems in 1997), as well as the best technical and economic solution on offer. Commissioning of the first unit is planned for October 2015, while the project will be completed with the last unit commissioning in May 2020.

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TECHNICAL DATA

6 Pelton units

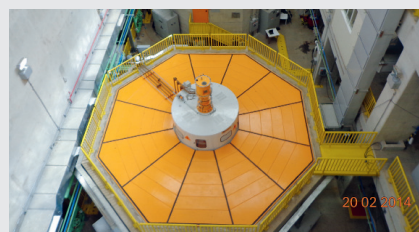
Output: 2 x 46 MW (50 Hz)
2 x 46 MW (16.7 Hz)
1 x 18.7 MW (50 Hz)
1 x 18.7 MW (16.7 Hz)

Brazil Batalha

In Brazil, ANDRITZ HYDRO successfully put two units at HPP Batalha in commercial operation.

The contract for supply and installation at the HPP Batalha Complex (total output: 53.74 MW) was awarded to the consortium Consórcio Fornecedor Batalha in April 2009 by FURNAS – Centrais Elétricas S.A. The hydropower plant is located in the center of Brazil at the border between the two states of Minas Gerais and Goiás.

ANDRITZ HYDRO Brazil has supplied and installed two 26.87 MW vertical Kaplan turbines, two 29.17 MVA generators, governor and excitation system, gates and cranes for upstream, downstream and spillway structure, the main penstock (weight around 600 tons), the auxiliary penstock, the complete EPS and PPS systems of the plant, automation, the 138 kV



switchyard, transmission line (82 km / 138 kV) as well as erection and site installation supervision and commissioning of the related scope.

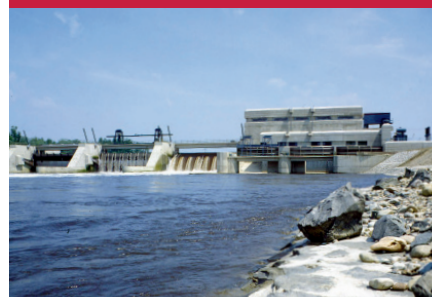
Furthermore, ANDRITZ HYDRO is responsible for project management and the consortium lead. HPP Batalha will supply electricity to more than 130,000 Brazilian citizens.

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TECHNICAL DATA

Output: 26.87 MW / 29.17 MVA
Voltage: 13.8 kV
Head: 36.9 m
Speed: 240 rpm
Runner diameter: 3,400 mm

Austria Spielfeld



ANDRITZ HYDRO has been awarded a contract from VERBUND Hydro Power GmbH for the rehabilitation of the complete secondary equipment at the Spielfeld hydropower station in Austria.

The run-of-river power station was originally built between 1980 and 1982 by Steirische Wasserkraft- und Elektrizitäts AG. It is located at the northern end of the eponymous valley at the Mur River, in the Austrian state of Styria. The power house comprises two horizontal units, consisting of one 7.6 MW Kaplan bulb turbine and one directly connected 10 MVA three-phase synchronous generator. The three radial gates include supporting valves and have a clear span of 22 m, as well as a closure height of 6 m.

ANDRITZ HYDRO's scope of supply covers refurbishment and erection of the secondary equipment at both units, including excitation, electrical protection and governors, gates, the redundant water economics component, and the inclusion of general equipment.

With HPP Spielfeld another hydropower station on the Mur River will be equipped with products and know-how from ANDRITZ HYDRO.

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TECHNICAL DATA

Output: 2 x 10 MVA
Voltage: 6.3 kV