

China Shi San Ling

In September 2013, State Grid Xinyuan Beijing Shi Sanling Pumped Storage Power Co., LTD signed a contract with ANDRITZ (China) Ltd. for the supply of one stator for unit 3 at the Shi San Ling pumped storage power station.

The Shi San Ling pump storage plant is located in Changping county, 40 km north of the urban district of Beijing, and has a total capacity of 4 x 222 MVA. The power generated from the plant is fed into Beijing-Tianjin-Tangshan grid through two 220 kV transmission lines. Furthermore, the



plant provides frequency regulation and reactive power modulating, and emergency power source for grid functions. It therefore plays an important role in improving the quality and operational stability of the grid. The scope of supply comprises of one new stator including a new oil cooling system, new surface air cooler, generator top covers, upper guide bearing upgrading and spare parts. ANDRITZ (China) Ltd. will supply the stator frame and core. The stator winding will be produced by our ANDRITZ HYDRO factory in Weiz, Austria.

The site activities started in April 2014 with commissioning due in October 2014.

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TECHNICAL DATA

Output: 4 x 222 MVA

Voltage: 13.8 kV

Speed: 500 rpm

Finland Mankala

ANDRITZ HYDRO Finland has signed a contract with Oy Mankala Ab (part of Helsinki Energia Oy) for upgrading three Kaplan turbines at Mankala run-of-river hydropower plant, which was originally commissioned in 1950.

The scope of supply for ANDRITZ HYDRO includes new oil-free runners, shafts, guide vanes, high pressure units, oil heads and the service of



major parts. In addition to the three Kaplan turbines, under the terms of the contract the existing auxiliary turbine, which enables black start capability of the plant, will be refurbished.

The aim of the project is to raise the output by 2.5 MW to a maximum output per unit of 12.5 MW. After the rehabilitation, efficiency will be increased by 4% points which means an extra supply of electrical energy to the Finnish grid. All model tests have been realized at ANDRITZ HYDRO's hydraulic laboratory in Tampere, Finland.

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TECHNICAL DATA

Output: 3 x 12.5 MW

Head: 8.5 m

Speed: 107.1 rpm

Runner diameter: 4,660 mm

China Zangmu



In 2013 ANDRITZ (China) Ltd. signed a contract with HUANENG TIBET GENERATION Co. Ltd. to supply the automation system for Zangmu hydropower plant and a local control center in China.

Zangmu is the largest hydropower plant in Tibet with a crest level of 3,314 m above the Yellow Sea. It is located on the middle stream of the Yarlung-Tsangpo River, which flows in the world's largest and deepest canyon, the Yarlung Tsangpo Grand Canyon, and meets the river Ganges in Bangladesh.

ANDRITZ (China) Ltd.'s scope of supply for HPP Zangmu includes one compact SCALA server, two gateway controls, nine local control units and 34 sets of TM 1703 for auxiliary local control.

The control center consists of redundant SCALA servers, three operator workstations, two AGC/AVC servers, one web server, one on-call server, one engineering server and redundant gateways.

The Zangmu project will be a key for ANDRITZ (China) Ltd. to enter the hydropower market of Tibet in the near future, providing a full range of products from water to wire.

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TECHNICAL DATA

Output: 6 x 85 MW

Head: 53.5 m

Speed: 136.4 rpm