Transportation of the rotor

Reisseck II

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Austria – Commercial operation of the new pumped storage power plant Reisseck II in Austria started in October 2016.

Owner VERBUND has awarded a contract to ANDRITZ HYDRO for the delivery of electro-mechanical equipment, the control system and protective infrastructure in 2013 (see Hydro News 24).

As part of the Malta-Reisseck Power Plant Group – the largest group of hydropower plants in Austria – PSPP Reisseck II consists of an underground powerhouse. It is owned by VERBUND and is situated in the province of Carinthia in the Austrian Alps. The newly built pumped storage power plant extends this group by using the existing reservoir Grosser Mühldorfer See.

In addition to design, installation and commissioning of automation systems (control, excitation, and protection), hydraulic protection, gates and valves, ANDRITZ HYDRO also installed two identical generator units in the cavern.

The ideal hydraulic unit is a 215 MW single-stage reversible pump turbine with vertical shaft, a nominal speed of 750 rpm and a dynamic runaway speed of 1,142 rpm. During the project planning process, potential European generator manufacturers were asked to examine the basic feasibility of an appropriate motor generator, which was confirmed, even though units with an output of 30 MVA per pole had not been realized in Europe at that time.

To achieve a robust unit with a long service life, many different load cases needed to be mastered and their definitions represented the basis for the design. VERBUND requested rotor overspeed testing of at least 1,200 rpm. Highly stressed areas tend to plastify during overspeed testing and compressive residual stresses remain, which reduces tensile stresses during operation. In contrast to many common designs of units without overspeed testing, this allowed the value for peak stress to be increased by 50 % (as calculated with linear material properties).

With this project ANDRITZ HYDRO once again strengthened its relationship with the customer and adds an important Austrian project to its references.

TECHNICAL DATA		
Output	2 × 215 MW / 2 × 240	MVA
Head	595	m
Speed	750	rpm
Rotor diameter	3,202	mm
Annual production	970	GWh

Rotor for unit #1