Project: RUN-OF-RIVER PLANT SOHLSTUFE LEHEN – PART 1
SECTION MODEL TESTS OF THE SPILLWAY (scale 1:33.33)

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Client: Salzburg AG

Objectives: Hydraulic optimization of the weir geometry and the stilling basin

Abstract

The Salzburg AG for energy, traffic and telecommunications (Salzburg AG) plans the construction of the low-head hydropower plant Sohlstufe Lehen on the river Salzach in the city of Salzburg. The power plant consists of a power house on the left river bank with 2 Kaplan bulb turbines (power capacity of approx. 13.7 MW), and adjacent on the right side of the river a spillway block for flood control. This spillway has 4 weir bays each 16m wide, sealed with tainter gates and with on the top attached flap gates. The power plant is projected about 170 m downstream of the existing Sohlstufe Lehen which was built for river bed stabilization in the 1960’s. On basis of these draft specifications, the Institute of Hydraulic Engineering was commissioned to investigate in a first step the weir structure by means of a sectional model (scale of 1:33.33) in a 50 cm wide flume of the Hydraulic Laboratory. The main focus of this study lies in the optimization of the weir geometry, the design of the stilling basin and the downstream scour stabilization of the river bed, in terms of hydraulic efficiency, sediment passage and economy.

Sectional model tests of the weir sill and the stilling basin

Reference: