

New construction of small hydropower plant Sigirino / Switzerland

Client

Aziende Industriali di Lugano (AIL) SA

Consultant

IM Maggia Engineering Ltd, Locarno

Construction period

2012–2015

Construction costs

CHF 7.8 Mio.

Engineering services

Preliminary design, final design, tendering, construction design, construction supervision, commissioning

Description

High head power plant at the drinking water aqueduct Crana-Origlio with reservoir, penstock and power house with access road. The reservoir collects the spring water at an altitude of 1'006.20 m a.s.l. The spring water is fed to the power house via an underground penstock DN 350/400.

Main technical data

Reservoir at 1'006.20 m a.s.l.

Dimension L = 10.65 m
 B = 7.50 m

Penstock cast iron
 \varnothing = DN 350/400
 L_{Tot} = 1'723 m

Power house 520 m a.s.l.
 Q_A = 0.2 m³/s
 H_N = 475.50 m
 P_A = 0.8 MW

Horizontal Pelton turbine, 2 nozzles
 P_N = 0.84 MW
 Q_N = 0.20 m³/s
 n = 1000 U/min

Synchronous generator
 S = 1.0 MVA
 n = 1000 U/min

Transformer P_{TR} = 1.25 MVA

