

Isola, San Bernardino (GR): Rehabilitation of the dam wall

Bauherr

Officine idroelettriche di Mesolcina SA
(OIM)

Projektierung

IM Maggia Engineering Ltd

Zeitraum

2019-2020

Baukosten

CHF 1.2 Mio.

Leistungen

- Final design (phases 32 - phase 33)
- Call for tenders (phase 41)
- Construction design, implementation
- Completion (phases 51 - 53)

Beschreibung

As a result of concrete swelling, over the years a horizontal overpressure stress had built up in the arch dam, pressing heavily on the right wall abutment. This horizontal stress was relieved by cutting vertically through the dam in that area, restoring the original design stresses in the arch dam.

The cut was made during winter when the wall had cooled down, using a diamond wire saw of 16 mm wide. Once the relief deformation was completed, the remaining slit was closed using a mortar filling in order to restore the arch effect. At the same time, additional drainage holes were drilled below the foundation, and new piezometer cells installed.

Hauptdaten

- Height 45 m
- Crest length 290 m
- Reservoir volume 6,5 Mio m³
- Catchment area 43 km²
- Spillway capacity 300 m³/s
- Type of spillway floodgates
- Capacity bottom outlet 102 m³/s
- Deformation main section 15 mm
- Flood relief in case of high-water level 30 l/min
- Stage 1: Spina
 - Gross fall height 411 m
 - Nominal capacity 24 MW
- Stage 2: Soazza
 - Gross fall height 709 m
 - Nominal capacity 80 MW

