IM Maggia Engineering SA
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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 m^3
- Catchment area 43 km2
- Spillway capacity 300 m^3/s
- Type of spillway floodgates
- Capacity bottom outlet 102 m^3/s
- Deformation main section 15 mm
- Flood relief in case of high-water level 30 l/min
- Stage 1: Spina
  - Gross fall hight 411 m
  - Nominal capacity 24 MW
- Stage 2: Soazza
  - Gross fall hight 709 m
  - Nominal capacity 80 MW



