



PUMP STORAGE PLANT NANT DE DRANCE

FINHAUT (CH)

EMPLOYER

Nant de Drance SA, CH-1925 Finhaut

DESIGNING ENGINEER AND SITE SUPERVISION

AF-Consult Switzerland Ltd, CH-5405 Baden-Dättwil

TIME OF COMPLETION

08.2008 – 12.2018

CONTRACT SUM

CHF 745 Mio.

EXECUTION OF THE WORK

GMI Groupement Marti Implenia

CONSORTIUM PARTNERS

Marti Tunnel AG, CH-3302 Moosseedorf
Implenia Bau AG, CH-5000 Aarau

LEAD COMPANY AND TECHNICAL LEAD

Marti Tunnel AG, CH-3302 Moosseedorf

COMMERCIAL LEAD

Implenia Bau AG, CH-5000 Aarau

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PROJECT DESCRIPTION

The Nant de Drance project consists of the conversion of diverse existing power stations in an underground pump storage plant in order to achieve an installed power of 900 MW (6 units of 150 MW each) and increase the water retention capacity of the upper reservoir of Vieux Emosson.

The main project construction elements are:

- 5'600 m long access tunnel
- 2 x 1'500 m surge tunnels
- 2 x 430 m vertical pressure shafts
- Turbines and transformers caverns
- 4'500 m of access and services galleries
- Intake and discharge structures Vieux Emosson with Fangedamm
- 20 m dam elevation of Vieux Emosson

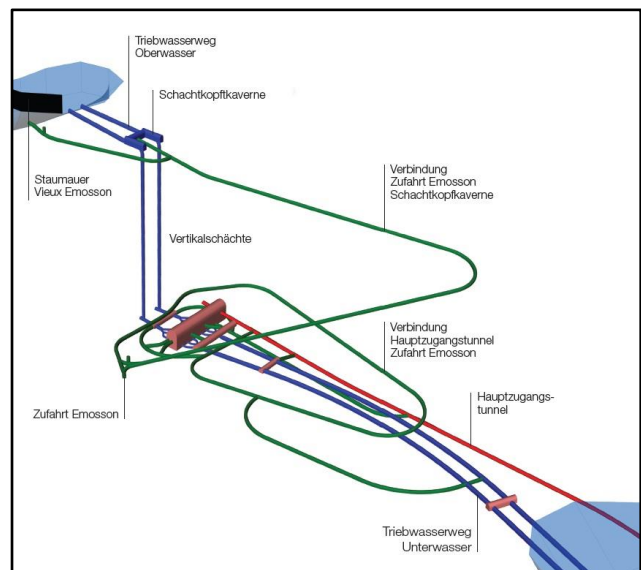
WORK DESCRIPTION

- Access tunnel excavation with a hard rock TBM:
 - L= 5'600 m, $\varnothing=9.4$ m
- Performance of injections and consolidating grouting to prevent dam settlements and mountain hydraulic discharge caused by the "La Veudale" fault crossing.
- 7'500 m of excavation of surge tunnels as well as an access and service gallery complex by means of drill and blast in a section range of 46 to 65 m².
- Two, 8 m in diameter, pressure shaft excavation with raise boring and D&B sinking
- Caverns excavation using conventional methods
 - Turbines cavern: L= 190 m, B= 32 m, H= 52 m
 - Transformers cavern: L= 127 m, B= 23 m, H= 25 m
- Powerhouse concrete lining, construction and architectural works
- Surge tunnels and pressure shafts lining
- Construction of intake and discharge structures
- Dam elevation Vieux Emosson 20 m height increase, storage capacity extension to 24 Mio. m³ and a longitudinal development of 200 m
 - Concrete volume: 62'000 m³
- Aggregates production plant for processing of 600'000 t of concrete aggregates
- Installation of two batching plants: underground and at the portal. Concrete production of over 365'000 m³
- Material management: transport of tunnel masses and processing of 1.2 Mio. m³
- Damlike landfillings and disposal works

- Implementation of a conveying system (engineering, design, manufacturing) of: 5'540 m long conveyor belt for the transport of the TBM muck

GENERAL CONDITIONS

- Alpine work conditions at altitudes of 1'000 to 2'300 m
- Extreme winter weather conditions



02.10.2018