

PROJECT WATER POWER PLANT CLEUXON DIXENCE



PROJECT NAME

Injection work for the renewal of a Pressure pipeline between Tracouet and Beudron.

CLIENT

GRANDE DIXENCE SA

ENGINEER

EDF CIH, Stucky, Bonnard & Gardel

GENERAL CONTRACTOR

CLEUSON DIXENCE CONSTRUCTION SA

SPECIALIST CONTRACTOR

JV **RODIO** Geotechnik AG

SDEM Entreprises SA

CONTRACT VALUE

EURO 4,8 Mio. CHF 7,8 Mio.

BEGINNING OF WORKS

DECEMBER 2005

END OF WORKS

DECEMBER 2006

■ JOB DESCRIPTION

Rodio performed the drilling and grouting works for the rehabilitation and renovation of the 4.2 km-long water discharge pipe of the water power plant Cleuson Dixence, Canton Valais. The purpose of the injection was the backfilling of cavities inside the rock outside the existing pressure line. A big difficulty has been performing the work from a narrow space inside the tunnel with a 3.0 to 3.4 inner diameter and also the extraordinary inclination of the tunnel by up to 68%. The work had been carried out in the upper 1.5 km long tunnel with 3 specifically designed drill rigs fitted with drilling and grouting equipment and mounted on movable work platforms. Grouting, drilling and personnel platform were moved by a complex but safe system of winds along the extremely steep pressure tunnel.

■ WORK QUANTITIES

5.900 m radial holes \varnothing 32 to 72 mm performed from water discharge pipe

Average drill depth 1,1 m. Maximal drill depth 7,2 m

1.500 m³ Cement grout injected volume

40.000 Injection hours.

■ MAIN EQUIPMENT

3 drill rigs model VD 400 installed on special inclined platforms

2 Full automatic mixing plants type CIMA JM30

2 Grouting plants with 4 pumps each

Automatic recording of grouting parameters by means of LUTZ VOPI system



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Rock Grouting



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Drill rig inside the water discharge pipe



Mixing and Grouting Plant inside the cavern



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