

Ilisu Dam & Hydropower Project (1200 MW) on Tigris River

DSI State Hydraulic Works of Turkey

Client

Republic of Turkey, DSI, Turkish office of State Hydraulic Works, Ankara - Turkey

Consultant

ECS Consortium composed of AF Consult and IM Maggia Engineering (Switzerland), Dolsar Engineering & Rast Engineering (Turkey)

Contractor

IC Ilisu Consortium composed of Nurol & Cengiz (Turkish Civil Contractors), Andritz Hydro (HM & EM Works), Stucky & Temelsu (Engineering – Switzerland, Turkey)

Construction period

Final Design, 2007 - 2009
 Main construction 2009 - 2017

Construction costs

1'600 Mio. €

Engineering services

Final Design, Preparation of Technical Specifications, Check and Approval of Application Design and Site supervision as Owner's Engineer

Description

The Ilisu Dam & Hydroelectric Powerplant (1'200 MW) is located on the Tigris River in Southeast Turkey in Mardin District. The Powerplant is composed of a 135 m high and 2'289 m length Concrete Faced Rockfill Dam (CFRD), Gravity dam, Spillway, Power Intakes & Power tunnels (3 x Ø12/10 m), Powerhouse (6 units, 1200 MW), Tailrace channel and 3 River Diversion Tunnels (Ø12 m) with Low Level Outlet.

The Design and Site supervision works include:

- Concrete Faced Rockfill Dam (H = 135 m, Crest Length L = 2'289 m, Dam fill volume 23.5 mio.m³, Reservoir volume 10'430 hm³, Reservoir surface 313 km²)
- Gated Spillway with 3 chute channels, Gravity dam and transition zone to CFRD, (Spillway capacity 17'988 m³/s)
- Power Intake & Power tunnels (Ø12/10 m)
- Open Powerhouse with 6 Francis units of 222 MW each (L / H / W = 178 / 56 / 38 m)
- River Diversion with 3 Tunnels (Ø12/L = 1000 m, Capacity 3'600 m³/s)
- Switchyard (380 / 154 kV Double busbar SY)

Main technical data

- Capacity 6 x 200 MW
- Design discharge 1'200 m³/s
- Annual energy production 4'120 GWh

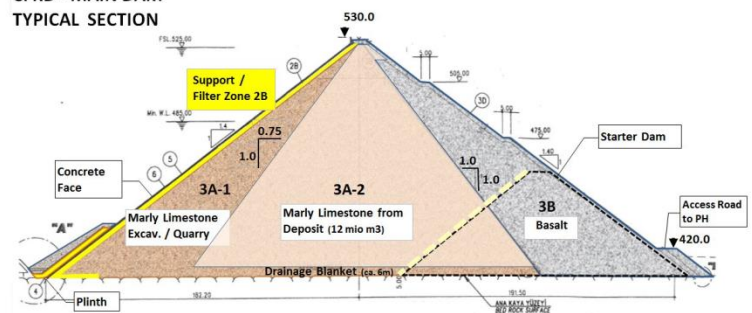


General overview of Ilisu Dam & HEPP with CFRD-Main Dam, Concrete gravity Dam, Spillway, Power Intake & Tunnels, Powerhouse, Diversion tunnels with Low Level Outlet



General overview of Ilisu Dam & HEPP from Downstream (Dec. 2013)

CFRD - MAIN DAM TYPICAL SECTION



Main section of Concrete Faced Rockfill Dam (CFRD) with dam zoning and upstream concrete face slab

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Curb and plinth construction of CFRD Dam



Downstream view of CFRD Dam & River Diversion tunnels



Upstream Dam filling works of CFRD Dam (March 2014)



Spillway chute channel construction



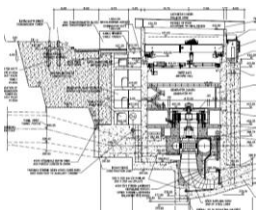
Upstream view of CFRD Dam / US Cofferdam (Dam filling 80% completed)



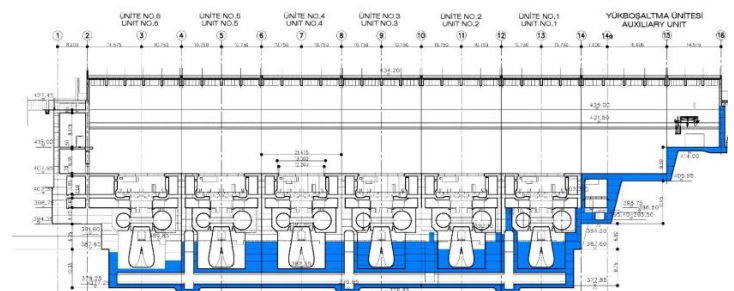
Hydromechan. steel constructions - Powerhouse & Tunnel



Powerhouse construction works with steel construction works (March 2014)



Powerhouse - Cross sections and Powerhouse model



Powerhouse - Longitudinal section