High Head Plants

Erikli and Akocak Weirs and Akocak HEPP TURKEY

The project consist of two diversion weir named Akocak Diversion Weir and Erikli Diversion Weir. Erikli Diversion Weir located on Alcak dere, Akocak Diversion Weirs and Hydroelectric Power Plant is a hydropower scheme located on Karadere River in Trabzon province, in north east Black Sea region of Turkey. It is a BOT project licensed by the Ministry of Energy and Natural Resources (MENR). Still undergoing construction, the project is planned to be operational at end of the year 2010

Erikli diversion weir foundation rests at around 1342.0 m elevation above sea level, having a height of 9.50 m from foundation and 30 m length along its crest. Akocak diversion weir foundation rests at around 1329.0 m elevation above sea level, having a height of 9.50 m from foundation and 15 m length along its crest. Erikli diversion weir is connected to Akocak diversion weir via derivation tunnel having 3.5 m diameter and 3283 m long. From an intake structure on the left bank a power tunnel of 6169 m length reaches the powerhouse. The power tunnel has a diameter of 3.50 m with horse shoe shape. After 6169 m of tunnel, steel penstock of 1.80 m diameter and 1376 m long is connected to powerhouse.

The powerhouse is a concrete structure with turbine axis at elevation 571.00. There are two generating units with vertical axis pelton type turbines, and installed capacity of each unit is 41.20 MW.

Client:
Akenerji Elektrik Üretim A. Ş.

Main Data:

Erikli diversion weir :

• height above foundation	9.50 m
• ogee crest length	25.00 m
• crest elevation	1356.50 m
• maximum water level	1358.30 m

Akocak diversion weir :

• height above foundation	9.50 m
• ogee crest length	15.00 m
• crest elevation	1338.50 m
• maximum water level	1340.43 m

Powerhouse :

• no.s/type of turbines	2/pelton, vertical axis
• rated capacity/rated discharge	82.40MW/12.3m^3/s
• rated head	766.5 m
• firm energy production	48.19 GWh/a
• second energy production	209.25 GWh/a

Execution : 2007-2010

Services :

- Review, appraisal and recommendations for feasibility study
- Preparation of final design reports and drawings
- Preparation of technical specifications and tender documents
- Programming site investigations and evaluation of the works
- Assisting owner in evaluation of E&M bid documents
- Preparation of detailed construction drawings for project structures
- Verification of detailed design drawings of hydro-mechanical and electro-mechanical equipment
- Consultancy services to the owner during site construction works, before and during installation of hydraulic steel structures and of electro-mechanical equipment
- Monitoring acceptance tests and supervision of commissioning of equipment and plant