



# SHENXIGOU H.P. PROJECT

## P.R. China, 1997

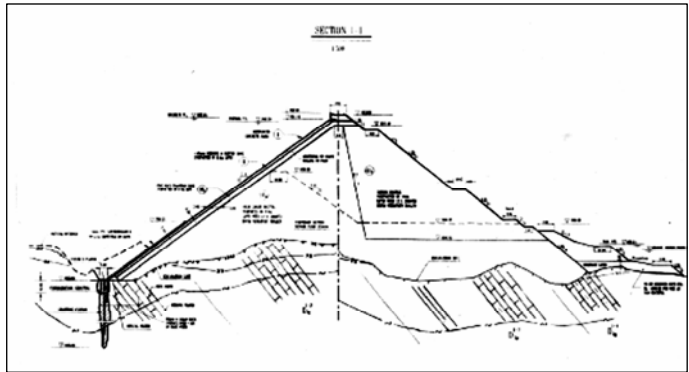
### PROJECT CHARACTERISTICS

**Works:** Concrete faced rockfill dam, gated spillway on the right bank, bottom outlet, intake tower, pressure tunnel surge shaft and underground power house on the left bank, equipped with 2 Francis turbine-generator units.

**Purpose:** Power generation, flood control, irrigation, and water supply.

### Dimensions:

- Reservoir storage: 58 000 000 m<sup>3</sup>
- Annual runoff: 450 000 000 m<sup>3</sup>
- Peak runoff: 1 000 yr. flood 2 510 m<sup>3</sup>/s
- Tunnel length: 1 295 m
- Tunnel diameter: 4.2 m
- Dam height: 98.8 m
- Dam crest length: 226 m
- Installed Capacity: 24 MW
- Annual energy: 92 000 000 kWh



### Materials:

- Dam foundation: limestone with mudstone interbedding
- Tunnel: limestone
- P.H. cavern: limestone
- embankment: limestone rockfill

### PROFESSIONAL SERVICES PERFORMED

Review and revision of preliminary design to introduce construction-effective and cost-effective solutions, design of the CFR dam, design of the power house, updating of feasibility study.

Shenxigou hydropower plant is located on the middle reach of Baisha river, 55 km Northwest of Chengdu (Sichuan province) and is planned as the 4<sup>th</sup> plant in a cascade development of 7 drops.

The underground powerhouse, located 1.1 km away from the dam site, is 44 m long and 28 m high with a crown span of 15 m. The surrounding rock is sound and massive limestone dipping across the cavern with some karst fissures and small karst caves.

The diversion tunnel is 640 m long out of which 420 m will be used for the bottom outlet. Its city gate cross section is 6 m wide and 8 m high. The tunnel will be lined with 0.5 m thick reinforced concrete.

The dam is a 2 zones rockfill, faced with reinforced concrete slabs as waterproofing liner. The slab thickness varies from 0.50 m to 0.25 m.

The spillway of the open channel type, is located on the right bank, and controlled by 3 radial gates 9 m wide and 11 m high. The spillway channel ends with a flip bucket, apron and plunge pool.

