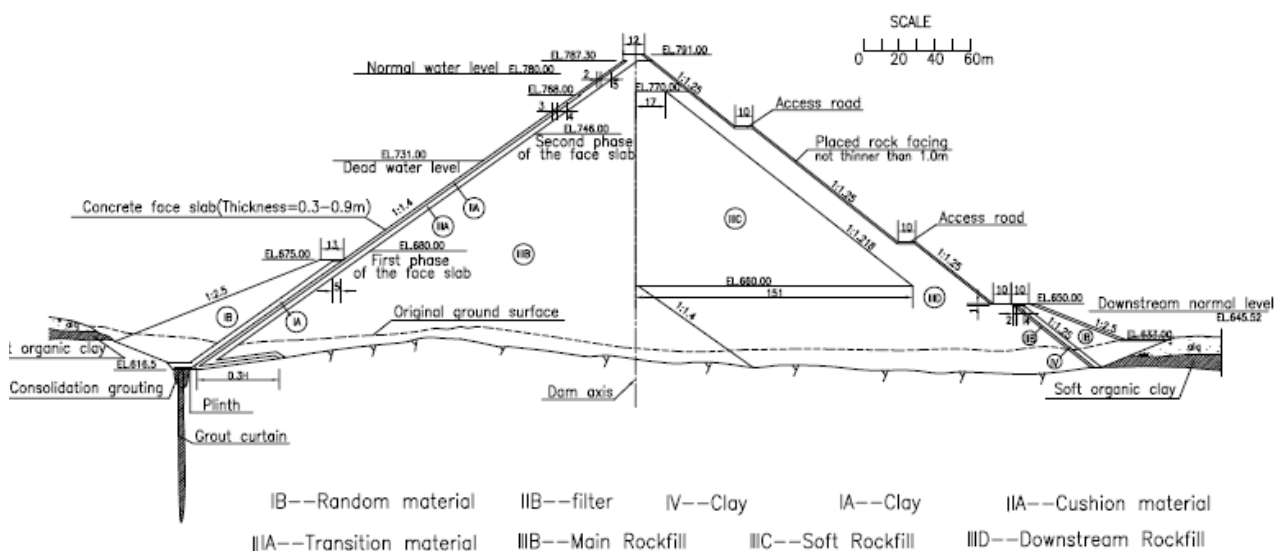
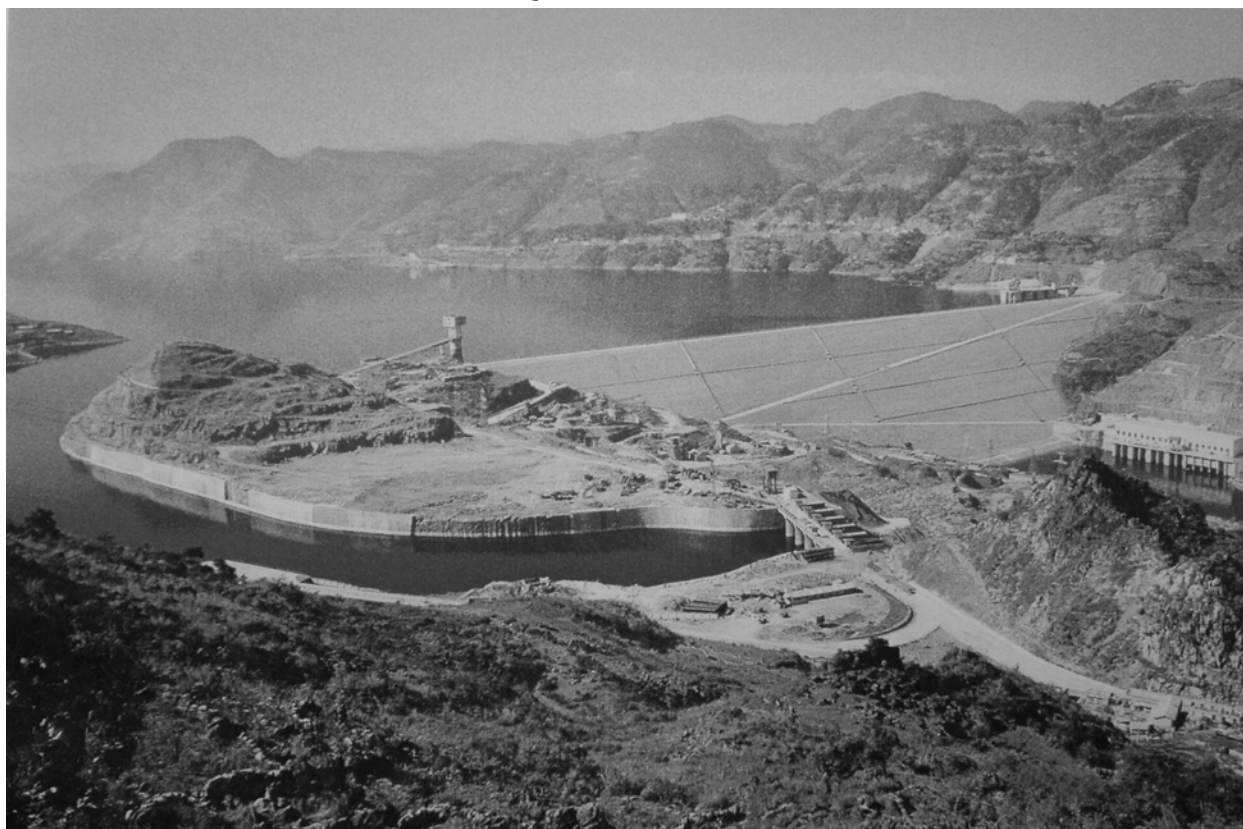


## TIANSHENGQIAO-1(TSQ-I)

TSQ-I Hydropower Project comprises a concrete faced rockfill dam (178m high and 1104m long in crest), a large chute spillway, an emptying tunnel, a power generation tunnel and powerhouse. The total quantity of the rockfill dam is  $18 \times 10^6 \text{ m}^3$ , and the excavation materials that can be used as rockfill is about  $14 \times 10^6 \text{ m}^3$  (about 78% of the total quantity), of which soft rock is  $4.8 \times 10^6 \text{ m}^3$  (1/4 of the total rockfill quantity). The spillway is located on saddle-back of right bank and the emptying tunnel is located on the right bank. The power house is located on the left bank with four tunnels and four turbines, and the total installed capacity is 1200 MW.

TSQ-1 BIRD VIEW



DAM SECTION

### General Features

<b>Project location</b>	On the Nanpan River Guizhou/Guangxi, China
<b>Catchment and reservoir</b>	
Catchment area	50139 km <sup>2</sup>
Mean annual runoff	612 m <sup>3</sup> /s
Reservoir area at FSL	173.7 km <sup>2</sup>
Storage at FSL	10257×10 <sup>6</sup> m <sup>3</sup>
Active storage	5796 million m <sup>3</sup>
<b>Spillway</b>	
Number of spillway	1
Type	Chute surface spillway
Discharge capacity	21750 m <sup>3</sup> /s
Type and no. of gates	5-radial
Size of gates	13m×20m
<b>River diversion</b>	
2 diversion tunnel: 2-13.5m×13.5m	
<b>Project developers</b>	
Owner	South China Electric Power Joint Venture Corporation
Engineers	KHIDI
Civil contractor	Shca /Sinohydro Engineering Bureau
Erection contractor	China Gezhouba Water & Power(Group) Co., Ltd
<b>Project purpose</b>	Power Generation and

	Flood Control
<b>Years of construction</b>	1992-2000
<b>Main dam</b>	
Type	CFRD
Height	178 m
Crest length	1104 m
<b>Power plant</b>	
Maximum gross head	143m
Installed capacity	1200MW
No. and capacity of units	4×300MW
Power conduits No./Type	4tunnels, D=9.6m
Type of turbine	Francis
<b>Main construction volumes</b>	
Concrete	1.32×10 <sup>6</sup> m <sup>3</sup>
Rockfill and soil	19.0×10 <sup>6</sup> m <sup>3</sup>
Excavation	26.5×10 <sup>6</sup> m <sup>3</sup>
<b>Main equipment suppliers</b>	
Turbines & generators	Harbin Electric Machinery Limited Duty Co.
Hv Electrical	Gec Alstom / Xi'an Xidian Transformer Co. Ltd
Gates & Hydro Mechanical	Fuchunjiang Hydro Machinery Works /Jiajiang Hydraulic Machinery Works

