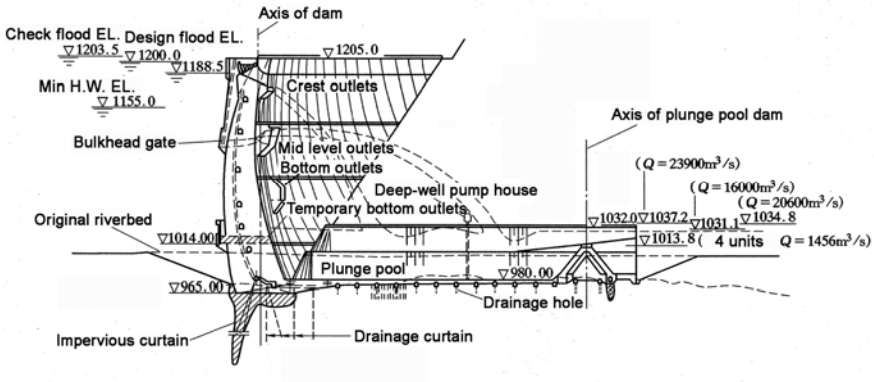
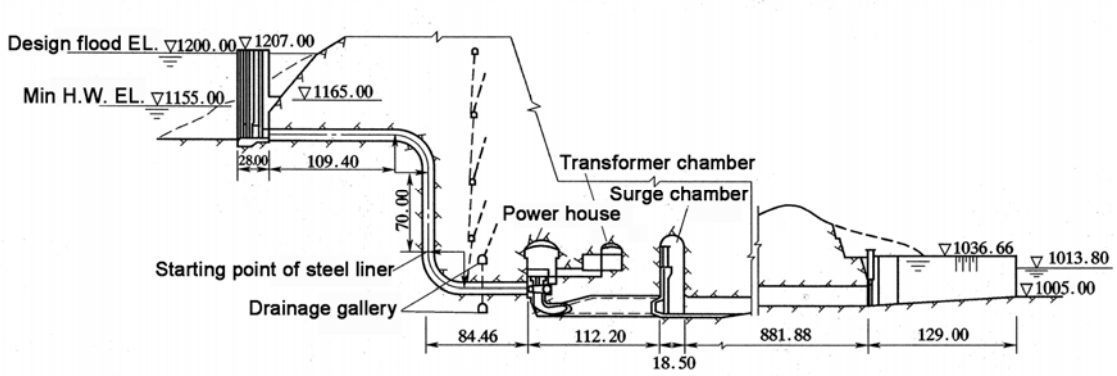
Ertan Hydropower Project

Flood discharge of Ertan



Section drawing of Ertan Arch Dam

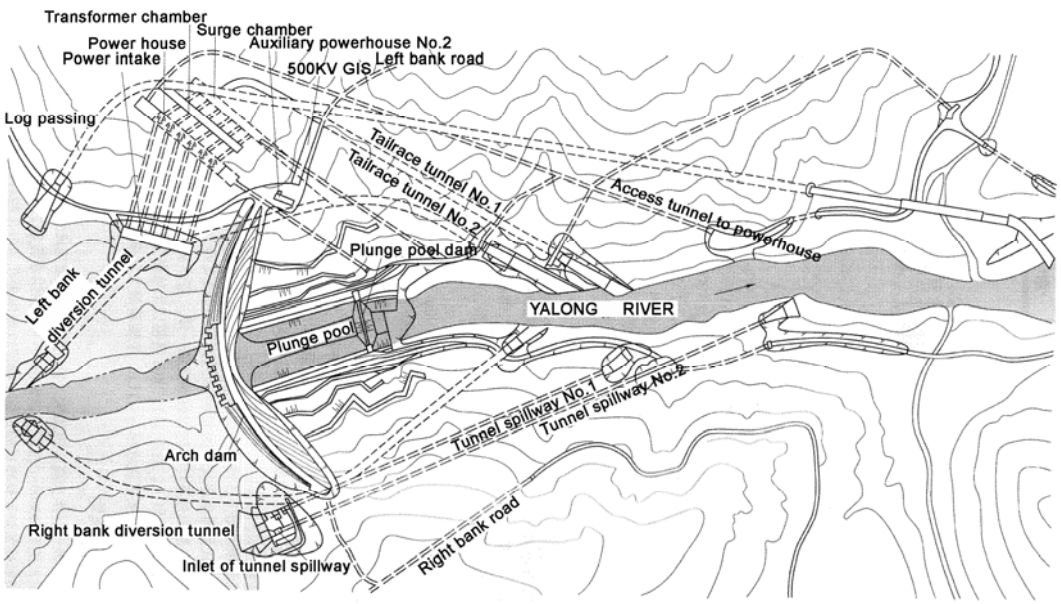


Section drawing of power conduit and power house

Main features

Project Location	On the Yalong River, Sichuan province, P. R. China	**Project Purpose**	Hydroelectric Power Generation
		Years of Construction	1987-1999
Catchment and Reservoir		**Main Dam**	
Catchment Area	116,400km^2	Type	Double-curvature Arch Dam
Mean Annual Runoff	1,670m^3/s	Height	240m
Reservoir Area at FSL	101km^2	Crest Length	774.69m
Storage at FSL	5,800 million m^3	**Power plant**	
Active Storage	3,370 million m^3	Maximum gross head	189 m
Discharge Capacity		Installed Capacity	3,300 MW
Crest Outlet	7 / 6,260 m^3/s	No. and Capacity of Units	6×550 MW
Mid Level Outlet	6 / 6,930 m^3/s	Power Conduits	6 steel embedded in concrete I.D.=9.0 m
Bottom Outlet	4 / 2,084m^3/s	Type of Turbine	Francis
Flood Discharging Tunnel	2 / 7,400 m^3/s	**Main Construction Volumes**	
River Diversion for Construction		Concrete	5,857,000 m^3
First Phase	Cofferdam of Left and Right Diversion Tunnel, Diversion Tunnel Construction	Excavation	12,638,000 m^3
		Main Equipment Suppliers	
Second Phase	Remove of Diversion Tunnel Cofferdam, Closure, Cofferdam of Dam	Turbines	GE Canada, Dongfang Electrical Machinery Co, Ltd., Harbin Electric Machinery Co, Ltd.
Third Phase	Close Diversion Tunnel, Temp Diversion Bottom Outlet	Generators & HV Electrical	GE Canada, Dongfang Electrical Machinery Co, Ltd., Harbin Electric Machinery Co, Ltd.
Fourth Phase	Close Temp Diversion Bottom Outlet, Ponding	Gates & Hydromechanical	Jiajiang Hydraulic Machinery Works, China Gezhouba (Group) Corporation, Sinohydro Bureau No.8,
Project Developers			
Owner	Ertan Hydropower Development Company,Ltd.		
Designer	CHIDI		
Contractor	EJV, SGEJV, GYBD		

The main project components of Ertan are a concrete double-curvature arch dam (240m high and 775m long) and a huge underground powerhouse complex. Ertan dam is China's first dam exceeding 200m, and Ertan underground powerhouse complex is the largest one in Asia. The underground complex includes a powerhouse cavern (281m×26m to 31m×66m) with six 550MW units, a transformer cavern (215m×19m×25m) and a surge chamber (201m×19m×69m). The project also has the two large spillway tunnels (13m×13.5m) and a 500m-long bridge, 7 surface spillways and 6 middle outlets. The Project was completed in 2000.



General layout of Ertan hydroelectric scheme