Shisanling Pumped Storage Power Station

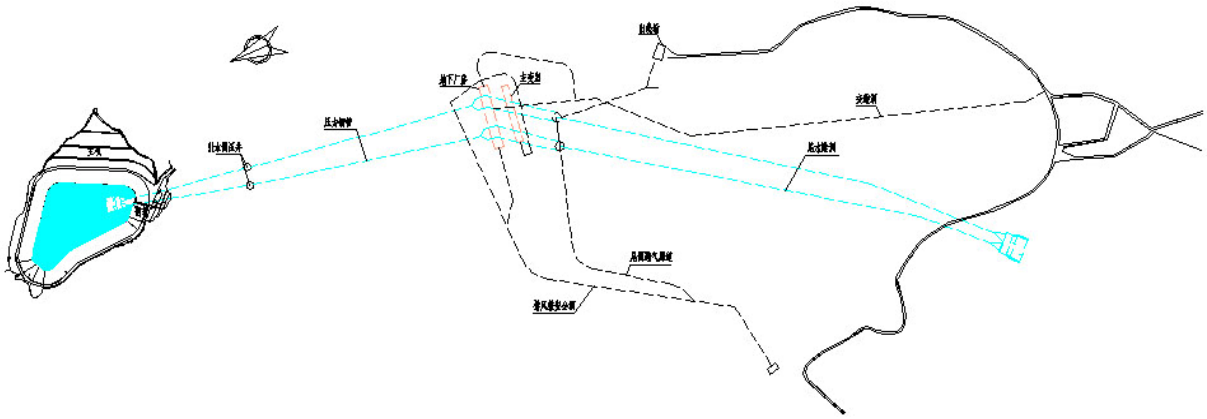
Project Features for Shisanling Pumped Storage Power Station

Item	unit	quantity	Item	unit	quantity
I. **Hydrology**			14．Opening/net width	number/m	1/14m
1．Catchment area above the dam site	km^2	223	**Ⅳ. Upper reservoir**		
2．Mean annual runoff	10^6m^3	18.8	15．Crest elevation of dam	m	568.0
3．Design flood flow（p=1%）	m^3/s	2200	16．Normal storage level	m	566.0
4．Check flood flow（p=0.1%）	m^3/s	3520	17．Gross storage	10^6m^3	4.45
Ⅱ. Lower reservoir			18．Type of dam	CRFD	
5．Check flood level（p=0.1%）	m	101.23	19．Dam height（at axis）	m	75
6．Design flood level（p=1%）	m	98.1	20．Crest length of dam	m	550
7．Normal storage level	m	89.5	Ⅴ. Powerhouse	underground	
8．Gross storage	10^6m^3	51.33	21．Installed capacity	MW	800
Ⅲ.Water retaining structure			22．Unit number	set	4
9．Type	Earth dam with inclined core		23．Exvacated size of powerhouse （L×W×H）	m	145×23×46.6
10．Crest elevation of dam	m	103	24．Max /min head	m	474.8/418.2
11．Max. dam height	m	29	25．Rated head	m	430
12．Crest length of dam	m	627	26．Discharge passing unit at max /min head	m^3/s	47.8/52.8
13．Crest elevation of spillway	m	89.5			

The Shisanling pumped storage power station is located in the Shisanling scenic spot on the north of Beijing. The Station uses the original Shisanling reservoir as its lower reservoir. Its upper reservoir is built on the Shangsi gulley behind Mang Mountain. The water way system and underground powerhouse complex are placed in the rock mass of Mang Mountain. The project, a I-rank one, consistes of upper reservoir, headrace tunnels and penstocks, underground powerhouse and transformer hall, tailrace tunnels and anti-seepage and water replenishment works on the lower reservoir. Main structures are designed as 1-class hydraulic structure. With a maximum head of 481m, the Station has a total installed capacity of 800MW, providing an annual energy output of 1246 GWh. The Station is put in the Beijing-Tianjin-Tangshan Grid to provide peak loading and emergency reserve power source, thus improving power supply quality in Beijing area.

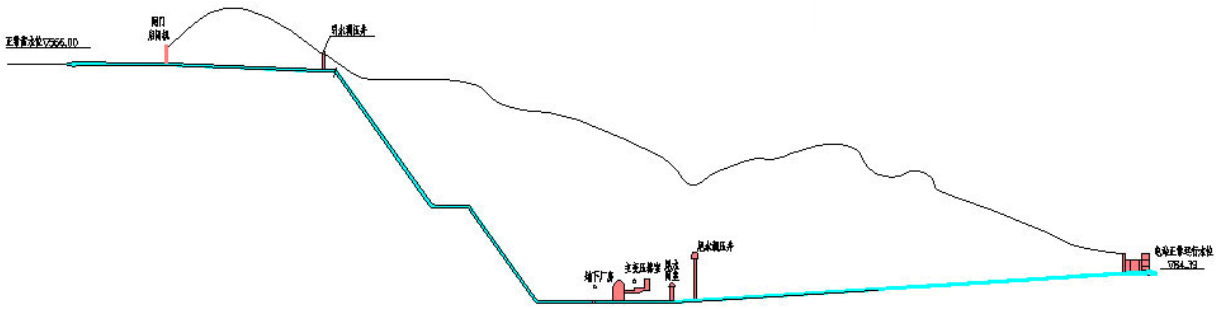
For the Station, the designer is the Beijing Hydroelectric Investigation and Design and Research Institute, and the contractors include No.1, No.5 and No.6 Bureaus of Hydropower Construction.

General Layout plan of Shisanling Project



Bird’seye View of Lower Reservoir

Profile along No.1 Water Way



Section of Upper Reservoir Dam