9.0 SALIENT FEATURES

I) Location	
State	Himachal Pradesh
District	Shimla & Mandi
River	Satluj
Nearest Village (Dam Site)	Khaira
Rail Head	Kalka (Haryana) 155km
Latitude of Dam Site	31°14'53"N.
Longitude of Dam site	77°12'39"E
II) Hydrology	
Catchment Area at Diversion Site	52955 km^2
90% dependable year	2001-2002
Flood discharge for river diversion	780.00 m^3/sec
Probable Maximum Flood (PMF)	15842.00 m^3/sec
III) Reservoir	
Full Reservoir Level (FRL)	EL 710.00 m
Minimum Draw Down Level (MDDL)	EL 707.00 m
Gross Storage at FRL	73.0 X 10^6 m^3
Dead Storage at FRL	64.2 X 10^6 m^3
Live Storage at FRL	8.8 X 10^6 m^3
Length of Reservoir	18.00 km (approx.)
Desilting Basin	Reservoir will act as Desilting basin
IV) Dam	
Type of Dam	Concrete Gravity
Top of the Dam	EL 715.00 m
Average River Bed Level at Dam Site	EL 644.00 m
Dam Height above River bed	71.00 m
Length of Dam at Top	184.42 m
Top Width of Dam	8.00 m
Length of Overflow Blocks	87.00 m
Length of Non-Overflow Blocks	97.42 m
V) Spillway	
Design Flood (PMF)	15842.00 m^3/sec
Type of Spillway	Combination of Upper Level Spillway(ULS) and Low Level Spillway(LLS) (sluice spillway)
Energy Dissipation System	Stilling Basin
Low Level Spillway(LLS)(Under sluice Spillway)	
Type	Sluice type

General Layout

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No. of Bays	Six(06) (Block No 3 to 8)
Size of opening	8.5 m (W) X 15.0m (H)
Type & No. of gate	Radial, Six (06)
Width of each block	14.5 m
Total width of LLS Blocks	87.00m
Crest Level	EL 660.00 m
Upper Level Spillway(ULS) (Overflow Spillway)	
Type	Ogee with open crest overflow
No of Bays	One(01) (Block No. 7)
Size	8.5m (W) X 3.0m (H)
Type and No of gates	Flap Gate, One(01)
Width of each block	14.5 m
Total width of ULS	14.5 m
Crest of ULS	EL 707.00 m
VI) River Diversion	
River Diversion Discharge (1 in 25 years)	780.00 m^3/sec
Diversion Scheme	Through Diversion Tunnel(DT) and coffer dams
Location of Diversion Tunnel	Left Bank
No. of Tunnel	One(01)
Diameter and shape of DT	10.5 m, Horse Shoe Shape
Length of Tunnel	710 m
VII) Power Intake	
Number of Intake	Three (03)
Invert level	EL 690.0
Discharge Capacity of Intake 1 and 2 (for Main Units)	270.8 m^3/sec(10% additional capacity)
Discharge Capacity of Intake 3 (for Environment Units)	171.6 m^3/sec(10% additional capacity)
Size of Intake gate	5.7m(W)X8.0m(H)
VIII) Pressure Shaft	
Number of Pressure Shaft	Three (03) further bifurcated into six (06)
Design Discharge for Pressure Shaft-1 and 2 (for Main units)	271 m^3/sec
Design Discharge for Pressure Shaft-3 (for Environment units)	173 m^3/sec
Diameter of Penstock	7.5 m and 5.4m after bifurcation
Length of Penstock	± 250.0 m
IX) Power House	
Type	Underground

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Location	Right Bank
Size of machine Hall	185.42 m (L) X 22 m(W) X 48.36 m(H)
Normal Tail Water Level	EL 651.20 m
Minimum Tail Water Level	EL 647.50 m
Gross Head	57.8 m
Rated Head	54.8 m
Turbine Type	Francis
No of Unit	Six (06)
Design Discharge	713.2 m^3/sec
Installed Capacity (Main units)	4*67.4MW
Installed Capacity (Auxillary units)	1*67.4MW + 1*18MW
Total Installed Capacity	355 MW
X) Tail Race Tunnel	
Number	Two (02)
Size of Tunnel	9.8m di, Horse Shoe Shaped
Length of Tunnel	350 m
XI) Power Generation	
Design Energy (Main Units)	925.46 GWh
Design Energy (Auxillary Units)	373.53 GWh
Annual Energy	1298.99 GWh
Annual Load Factor (Main Unit)	40.04%
Annual Load Factor (Environment Unit)	51.60 %
XII) Estimated Cost	
Total Hard Cost at March'17 Price Level	₹ 2414.20 crore
Interest During Construction	₹ 487.46 crore
Financial Charges	₹ 10.19 crore
Total Project Cost	₹ 2911.85 crore
XIII) Financial Aspects	
1st year tariff at Power House bus bars (including IDC) during 90% dependable year as per CERC guidelines	₹ 5.40 /kWh
Levelised tariff at Power House bus bars (including IDC) during 90% dependable year as per CERC guidelines	₹ 5.07 /kWh
XIV) Construction Period	
Total construction period	5 years

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