

KARMOLI HE PROJECT (2 x 70=140 MW)

SALIENT FEATURES

LOCATION

State	Uttaranchal
District	Uttarkashi
River	Jadhganga

Dam site

Location	700 m D/S of confluence of Chorgad with Jadhganga river
Latitude	31° 6' 4" N
Longitude	78° 58' 5" E
Nearest Airport	Dehradun
Nearest rail head	Rishikesh

HYDROLOGY

Catchment area at dam site	1605 sq km
Snow bound catchment area (Including area under glacial cover)	977.0 sqkm
Maximum average discharge at Dam site	139.8 cumec
Minimum average discharge at Dam site	7.7 cumec
Average annual runoff	1489.8 Mcum
Average monsoon runoff	1204.9 Mcum
Average non-monsoon runoff	284.9 Mcum

RESERVOIR

Full Reservoir Level (FRL)	El 3268.5 m
Maximum Water Level (MWL)	El. 3268.5 m
Minimum Drawdown level (MDDL)	El 3254.0 m
Gross storage at FRL	1.953 M cum
Live storage	0.816 M cum
Area under submergence at FRL	9.94 ha

DIVERSION TUNNEL

Number	1
Size	5.0 m ϕ
Length	350 m
Diversion discharge (assumed)	80 cumec

DAM

Type	Concrete gravity dam
Top elevation of dam	El 3271 m
Height of dam above deepest foundation level	56 m
Length of dam at top	128 m
River bed level	El 3225 m

SPILLWAY

Design flood	5905 cumec
Type	Ogee
Crest elevation	El 3244.5 m
Number & size of bays	4 of 12.5m x 11.5m (clear)
Length of spillway	68 m
Energy dissipation	Trajectory bucket

INTAKE

Invert level	El 3246.5 m
Number	1
Size of gate opening	3.5 m x 3.5 m
Trash rack	5 of 9 m x 5 m

DESILTING CHAMBER

Number	1
Size	10m x 15 m
Length	200 m
Design discharge	45 cumecs
Particle size to be removed	0.2 mm and above
Silt flushing discharge	8 cumecs
Silt flushing tunnel size	2 m ϕ
Silt flushing tunnel length	180 m

HEAD RACE TUNNEL

Number	1
Size	3.5 m
Shape	Horse shoe
Length	8.6 km
Design discharge	37.0 cumec

SURGE SHAFT

Number	1
Type	Simple surge shaft
Size	8 m ϕ
Height	120 m

PRESSURE SHAFT

Numbers	1 (Bifurcated into 2 of 2 m ϕ)
Size	2.8 m ϕ
Length	600 m

POWER HOUSE

Type	Underground
Installed capacity	140 MW
Number of units	2
Power house cavern size(main)	77.5 m x15.5mx 34 m
Type of turbine	Vertical axis Francis turbine
C.L. of turbine	El 2811.5 m
Rated Head	419.67 m

TAIL RACE

Size	3.5 m ϕ
Type	D-shaped
Length	600 m
Design Discharge	37 Cumec
Maximum TWL	2820 m
Minimum TWL	2818 m



SWITCHYARD

Size

Gas Insulated Switchyard (GIS) on the floor above the transformer/s in P/H cavern

POWER GENERATION

Installed capacity

140 MW

Annual energy generation

i) 90% dependable year

621.31 GWh

ii) Energy in 90% year
on 95% availability

592.22 GWh

CONSTRUCTION PERIOD

5 years