

HARSIL HE PROJECT (3x70= 210 MW)

SALIENT FEATURES

LOCATION

State	Uttaranchal
District	Uttarkashi
River	Bhagirathi

BARRAGE SITE

Location	Located just u/s of Jhala bridge
Latitude	31 ⁰ 01'09" N
Longitude	78 ⁰ 42'47" E
Nearest Airport	Dehradun
Nearest rail head	Rishikesh

HYDROLOGY

Catchment area at dam site	3235 sq km
Maximum average discharge at dam site	297.7 cumecs
Minimum average discharge at dam site	15.0 cumecs

RESERVOIR

Normal Pond Level	El 2447.50 m
Minimum Draw Down Level	El 2445.50 m
Gross storage at Pond Level	8.55 M cum
Live storage	2.29 M cum
Area under submergence at Normal Pond Level	91.56 ha

DIVERSION STRUCTURE

Type	Barrage
Crest elevation	El 2441.50 m
Length	218.00 m

No of Bays	16 Nos.
Width of each bay	11 m
River bed level	El 2441.0 m
Design flood	6300 cumecs
Crest elevation	El 2441.50 m
Energy dissipation	Stilling Basin

INTAKE REGULATOR

Length	40 m
No & Size of bays	3 no x 12 m
Crest Level	El 2444.0 m
Trash rack	3 no x 12 m x 7.5 m
Design Discharge	100 Cumecs

INTAKE AT HRT

Invert level	2434.50 m
Number	One
Size of gate opening	5.5 m x 5.5 m

DESILTING BASIN

Number	2
Size	150 m x 14 m x 13 m
Design discharge	100 cumecs
Particle size to be removed	0.2 mm and above

HEAD RACE TUNNEL

Number	1
Size	5.0 m
Shape	Horse shoe
Length	5.06 km
Rated Discharge	83.04 Cumecs

SURGE SHAFT

Number	1
Size	8 m
Height	85 m

PRESSURE SHAFT

Numbers	1
Size	4.5 m
Length	419 m

POWER HOUSE

Type	Underground
Installed capacity	210 MW (3x70 MW)
Number of units	3
Power house cavern size (main)	83 m x16.5 m x 30 m
Type of turbine	Francis
C.L. of turbine	El 2139 m
Rated Head	281.33 m

TAIL RACE

Size	5.5 m
Type	D-shaped
Length	280 m
Design Discharge	83.04 cumecs
River Bed Level	2143.0 m
Maximum TWL	2148.50 m
Minimum TWL	2146.50 m

SWITCHYARD

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

Installed Capacity	210 MW
Annual energy generation	
i) 90% dependable year	920.57 GWh
ii) Energy in 90% year on 95% availability	877.68 GWh

CONSTRUCTION PERIOD	5 years
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