

Project: Sorang Hydro Electric Project - 100 MW

Specifications:

1		LOCATION	:	Near village Sorang Dogri in Nichar Tehsil of Kinnaur District of Himachal Pradesh State.
	i)	Latitude		
		a) Diversion Weir	:	31° 35' 40" N
		b) Power House	:	31° 34' 42" N
	ii)	Longitude		
		a) Diversion Weir	:	77° 52' 38" E
		b) Power House	:	77° 51' 28" E
2		HYDROLOGY		
	i)	Total Catchment area	:	137.80 sq km
	ii)	Annual Rainfall Average	:	896.90 mm
	iii)	Average annual yield	:	587.00 Mcum
3		DIVERSION WEIR (Trench Weir)		
	i)	Crest level	:	EL +1939.60 m
	ii)	Design Surplusing Capacity	:	200 Cumecs
	iii)	Design discharge (Drawal for Power Generation)	:	17.34 Cumecs
	iv)	Type of Structure	:	Concrete – gravity type, Trench Weir
	v)	Maximum height from deepest foundation	:	7.10 m
	vi)	Length - Total	:	59.0 m
4		INTAKE & DE SILTING CHAMBER		
	i)	Type	:	De-silting Hoppers
	ii)	Length of De-silting Chamber	:	144.0 m
	iii)	Width	:	12.0 m
	iv)	Size of Intake gate (Clear vent size)	:	4.00m x 4.00m
	v)	Size of Stop log gate (clear vent size)	:	4.00m x 5.715 m
	vi)	Normal operating level	:	EL + 1936.00m

	vii)	No. of hoppers	:	11
5		HEAD RACE TUNNEL		
	i)	Length & Diameter of HRT	:	1540 m long & 3.40 m Dia
	ii)	Shape	:	'D' shape
	iii)	Type & Thickness of Lining	:	0.30 m Cement Concrete
6		SURGE SHAFT		
	i)	Type & Diameter of Surge Shaft	:	Simple, Circular 6.50 m Dia
	ii)	Height of Surge Shaft	:	48m
	iii)	Type & Thickness of lining	:	RCC/CC, 300 mm
7		PENSTOCK TUNNEL		
	i)	Length & Diameter of Penstock	:	29 m long, 3.40 m Dia 'D' Shape
	ii)	Invert level of Tunnel at Surge Shaft	:	EL 1908.48 m
	iii)	Invert level at Exit Portal	:	EL 1908.35m
	iv)	Type & Thickness of Lining	:	Concrete 0.30 m thick
8		INCLINED PRESSURE SHAFT (TUNNEL)		
	i)	Length & Diameter of Tunnel	:	181 m, 3.25 m Dia. Circular
	ii)	Slope of tunnel	:	10 Deg with vertical
	iii)	Type & Thickness of Lining	:	Concrete 0.50m thick and Steel liner
9		PENSTOCK		
	i)	Length & Diameter of Penstock	:	Buried 965 m, 3.25 m dia.
	ii)	Shell Thickness of Pipe	:	Varying from 10mm to 40mm, encased in concrete
10		POWER HOUSE CAVERN		
	i)	Generator floor level	:	EL 1273.00 m
	ii)	Turbine centre line level	:	EL 1263.00 m
	iii)	Service bay level	:	EL 1273.00 m
	iv)	Length of power house (including S/Bay)	:	56.00 m
	v)	Width of power house (Cavern)	:	11.50m
	vi)	Design head (Rated)	:	666.46m

	vii)	Design discharge for 2 units	:	17.34 Cumecs
	viii)	Installed capacity	:	2 x 50 MW
	ix)	Valve House - Length - Width	:	47.00 m 6.50 m
	x)	Machine Hall Length Width	:	28.00 m 11.50 m
	xi)	Transformer Bay - Nos - Length - Width	:	2 12.00m 10.00m
	xii)	Finishing - Arch - Sides - Floor	:	RCC Lining Shotcreting Ironite CC Flooring / Mosaic tile flooring
11		TAIL RACE TUNNEL		
	i)	Length & Diameter	:	95.00 m, 4.5m, 'D' Shape
	ii)	Bed level of the Tunnel at the beginning	:	EL 1258.50 m
	iii)	Thickness of lining Bed and Sides	:	0.3 m Concrete
12		ELECTRO MECHANICAL EQUIPMENT		
		A) Turbines		
	i)	No. & Type of Turbine	:	2 Nos., Vertical, Pelton Wheel
	ii)	Rated Head	:	666.46 m
	iii)	Rated Turbine output	:	51550 kW Each
	iv)	Rated Speed	:	600 rpm
	v)	Rated discharge / unit	:	8.67 cumecs
		B) Generators		
	i)	No. & Type of Generator	:	2 Nos., Synchronous Vertical Shaft
	ii)	Rated output & Overload Capacity	:	50000 kW + 15% Overload
	iii)	Rated Speed	:	600 rpm
	iv)	Rated Generation Voltage	:	11 kV
	v)	Average Annual Energy	:	557.5 Gwhrs
		C) Power Evacuation		
	i)	Proposed Grid connection	:	At Kotla sub-station

	ii)	Length of Transmission Line	:	18 km
	iii)	Type	:	220 kV double circuit line with Zebra conductor

Thanks for your interest in our services.
Please do reach us at...

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