

SALIENT FEATURES

1 Location

State	: Uttarakhand
District	: Pithoragarh
Tehsil	: Thal
Place	: Kamtoli, Ramtal, Pilki
Stream	: Ramganga River
Nearest Airport	: Dehradun
Nearest Rail Head	: Tanakpur
Geographical Coordinates of Diversion Site	
a) Longitude	: 80°07'34.81"E
b) Latitude	: 29°44'50.35"N
c) Altitude	: 726 m

2 Hydrology

Gross Catchment Area	: 890 sq.km
Design Flood	: 7642 cumec

3 Diversion Arrangements

Location	: 10 km downstream of Thal town (along the river, actual location marked on drawing)
Type of structure	: Concrete Barrage
River Bed Level	EL 726 m
Top of Barrage	EL 749 m
Length at FRL	: 102 m
FRL	EL 747 m
Barrage crest level	EL 728 m (undersluice), EL 729 m (other barrage bays)
No of bays/ bay width	Total 8 Nos (7 nos barrage bays and 1 no undersluice), each bay width 10.7 m.
Thickness of pier	2.5 m
Number of Gates	: 8 Nos
Type of Gates	: Radial

4 Intake Structure

Type	Semi Circular
Location	Right Bank of river
Design Discharge	: 83 cumec
CL of Intake	EL 734.50 m
Invert level of Intake	EL 731.75 m

5 Head Race Tunnel

Length	1995 m
Shape	: Horse Shoe
Diameter	: 5.5 m
Design Discharge	: 83 cumec

6 Surge Tank

Type	: Simple
Dimension	: 15 m diameter, 43.5 m high

7 Pressure Shaft

Number	: One
Diameter & thickness	: 4.7 m dia, 22 mm thick
Length	: 145 m
Bifurcation	: 4.7 m dia pipe shall be bifurcated into two 3.2m dia 12 mm thick pipes.
Design Discharge	: 83 cumec

8 Power House

Location	: At right bank of river Ramganga near Pilki village
Type of Turbine	: Vertical Kaplan
Type of Generator	: Semi Umbrella
Power House Crane/Lifting Tackle Capacity	: EOT Crane, 80T/20T capacity of main hook,
Maximum Gross Head/Net Head	: 25.6 m / 19.07 m
Installed Capacity	: 14 MW (2X7 MW)
Maximum TWL	: 722.2 m
Minimum TWL	: 721.4 m
Units generated at 75% availability	: 56.73 MKwhr
Plant Load Factor at 75% availability	: 47.7 %

9 Construction Period : 36 Months

10 Cost Estimate & Financial Analysis

Civil works including gates	: 143.81 Cr
Electro-mechanical works	: 66.31 Cr
Total basic cost	: 210.12 Cr
IDC & FC	: 22.68 Cr
Price escalation	: 14.53 Cr
Subsidy	: 5.00 Cr
Grand Total (including escalation. IDC & FC)	: 242.33 Cr
Levelling Tariff	: 6.92 Rs/Kwh

11 Power Evacuation

Evacuation of power will be through 33KV double circuit line from switchyard to 33 KV Gouchar sub-station near Thal.