

**SALIENT FEATURES**  
**RAJGHAT DAM AND HYDRO ELECTRIC PROJECT.**

1.	<b><u>LOCATION</u></b>	
	(i) Tehsil	Chanderi(M.P.)& Lalitpur(U.P.)
	(ii) District	Ashoknagar (M.P.) & Lalitpur (U.P.)
	(iii) Latitude	24° 45' 45"
	(iv) Longitude	78° 45'00"
2.	<b><u>SOURCE OF SUPPLY</u></b>	<i>BETWA RIVER</i>
3.	<b><u>CATCHMENT AREA</u></b>	
	(i) Gross Catchment area	16317 Sq Km
	(ii) Catchment area in M.P.	15644 Sq Km
	(iii) Catchment area in U.P.	673 Sq Km
4.	<b><u>RUN OFF</u></b>	
	(i) Average rainfall (Annual)	1000mm
	(ii) Total run off	3370 M cum
	(iii) Run off factor	207730 cum/Sq Km.
	(iv) Run off proposed to be utilized By M.P. & U.P. at Rajghat	1753 M Cum
5.	<b><u>DESIGN FLOOD</u></b>	
	(i) Maximum Probable Flood	45,555 cumsec
	(ii) Standard Projected Flood	39,014 cumec
	(iii) Routed discharge	33,893 cumec
	(iv) Diversion during construction	226 cumec
6.	<b><u>DAM</u></b>	
	(i) R.L. of top of earth Dam	377.70 m
	(ii) Total length of Earth Dam	10.79Km
	(iii) R.L. of top of Masonry Dam	377.00 m
	(iv) Total length of Masonry Dam	562.50 m
	(v) Maximum height of Earth Dam	29.5 m

	(vi) Maximum height of Masonry Dam	43.5 m
	(vii) Total length of spillway crest with piers	342 m
	(viii) No. & Size of Gate	18 gates of 15 m x 14.56 m
	(ix) Deepest Foundation Level	333.20 m
	(x) River Bed Level	337.80 m
	(xi) Dead Storage Level	356.62m
	(xii) Spillway Crest Elevation	357.00 m
	(xiii) Full Reservoir Level	371.00 m
	(xiv) Max. Water Level	373.07 m
7.	<b><u>POWER HOUSE</u></b>	
	(i) Capacity	45 MW (3x15 MW)
	(ii) Location	At left flank of dam toe
	<b><u>Head Race Water Level</u></b>	
	(i) Maximum	373.07 m
	(ii) Normal	371.00 m
	(iii) Minimum	361.50 m
	<b><u>Tail Race Water Level</u></b>	
	(i) No.m/c running	339.20 m
	(ii) 1 m/c running	339.79 m
	(iii) 2 m/cs running	340.06 m
	(iv) All the 3 m/cs running	340.66 m
	(v) Maximum tail race water level	355.70 m
	(vi) Design Head	28.00 m
	(vii) Maximum Head	31.80 m
	(viii) Minimum Head	20.30 m
	(ix) Maximum flow in each machine	63.2 cumecs
	(x) Spiral casing C/L Elevation	334.70 m
	(xi) D.T. Bottom level	326.36 m
	(xi) Spiral Inlet dia	4250 mm
	<b><u>Turbine</u></b>	Kaplan type with six Blades Runner Dia 2900 mm tip to tip
	(i) Rated output	15700 KW
	(ii) Efficiency (Maximum)	93%
	(iii) Normal Speed	250 rpm

	<p><b><u>Run away Speed</u></b></p> <p>(i) On cam (for 15 min)  (ii) Off cam</p> <p><b><u>Generator</u></b></p> <p>(i) Normal Generation voltage  (ii) Rated output (15000 KW)  (iii) Overall efficiency maximum  (iv) Stator current  (v) Rotor current</p> <p><b><u>Resistance</u></b></p> <p>(i) Stator/phase at 75 dec C  (ii) Field winding at 75 dec C  (iii) Insulation type  (iv) Yearly Energy Production from Rajghat Dam  (v) Additional annual energy production from Matatila Dam</p> <p>8. <b><u>RESERVOIR CAPACITY</u></b></p> <p>(i) Full Reservoir Capacity  (ii) Dead Storage Capacity  (iii) Live Storage Capacity  (iv) Provision for silting in live storage  (v) Share of M.P.  (vi) Share of U.P.  (vii) For committed use at D/S  (viii) Total usable capacity</p>	<p>495 rpm  665 rpm</p> <p>Semi Umbrella with pivoted Segmental thrust bearing below Generator rotor</p> <p>11000V (+5%) 50 Hz(+3%)  18750 KVA/0.8 lag pf  96.1%  984 Amp  865 Amp at 112.5V</p> <p>0.412 ohms  0.1084 ohms  Class "B"  950 lack unit  450 lack unit</p> <p>2172 M Cum  227 M Cum  1945 M Cum  190 M Cum  750 M Cum  750 M Cum  255 M Cum  1755 M Cum</p>
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9.	<p><b><u>HEAD REGULATOR DISCHARGES</u></b></p> <p>(i) Upper Rajghat Canal Head Regulator at Km. 2.422 (Right Bank)</p> <p>(ii) Lower Rajghat Canal Head Regulator at Km 1.235 (Right Bank)</p> <p>(iii) Rajghat Canal Head Regulator at Km. 2.30 (Left Bank)</p>	<p>9.90 Cumec</p> <p>25.48 Cumec</p> <p>28.31 Cumec</p>						
10.	<p><b><u>IRRIGATION</u></b></p> <p><b><u>Uttar Pradesh</u></b></p> <p>(a) Upper Rajghat Canal</p> <p>(b) Jakhlone Pump Canal</p> <p>(c) Lower Rajghat Canal</p> <p>(d) Extension &amp; Intensification on Betwa &amp; Gursarai Canal</p> <p>(e) Badagaon Pump Canal</p> <p>(f) Jhansi Canal</p> <p><b><u>Madhya Pradesh</u></b></p> <p>(a) Rajghat L.B.C.</p> <p>(b) Datia Carrier Canal</p> <p>(c) Datia Canal System</p> <p>(d) Remodelling of Bhandar Canal</p>	<p>7809 Ha</p> <p>23903 Ha</p> <p>8388 Ha</p> <p>62644 Ha</p> <p>3820 Ha</p> <p><u>12097 Ha</u></p> <p><u>1,38,661 Ha</u></p> <p><u>24291 Ha</u></p> <p><u>3383 Ha</u></p> <p>57683 Ha</p> <p><u>36093 Ha</u></p> <p><u>1,21,450 Ha</u></p>						
11.	<p><b><u>SUBMERGENCE</u></b></p> <p><i>Area of Submergence</i></p>	<table border="1"> <thead> <tr> <th>M.P.</th> <th>U.P.</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>12248 Ha</td> <td>11962 Ha</td> <td>24210 Ha</td> </tr> </tbody> </table>	M.P.	U.P.	Total	12248 Ha	11962 Ha	24210 Ha
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12248 Ha	11962 Ha	24210 Ha						

12.	<b><u>VILLAGES AFFECTED</u></b>			
	(i) No. of villages affected	39	49	88
	(ii) No. of villages under full submergence	22	17	39
	(iii) No. of villages under partial submergence	9	21	30
	(iv) Total villages under submergence	31	38	69
13.	<b><u>ABADI AFFECTED</u></b>			
	(i) No. of villages fully affected	13	17	30
	(ii) Partially affected	9	6	15
	(iii) Total	22	23	45
14.	<b><u>SANCTIONED COST</u></b>			
	(a) Dam (Based on 1979 rates)	Rs. 123.22 Crores		
	(b) Power House (Based on 1984 rates)	Rs. 37.47 Crores		
15.	<b><u>REVISED COST</u></b>			
	<b><u>Dam Project</u></b>			
	(i) Estimated Cost (January 2000)	Rs. 300.60 Crore		
	(ii) Cost Per Hectare of Benefited area	Rs. 12023.00		
	(iii) Cost per Th cum of gross storage	Rs. 1785.00		
	<b><u>Power House</u></b>			
	Estimated cost (March 1997)	Rs. 131.26 Crore		