

Chapter – 9

Construction Programme and Manpower and Plant Planning

9.1 Construction Programme

The Parbati-Kalisindh-Chambal link project envisages construction of 243.613 km canal in case of linking to Rana Pratap Sagar alternative (a), 226.628 km in case of linking to Gandhi Sagar alternative (b)-I and 201.828 km II long link canal in case of linking to Gandhi Sagar alternative (b)- including three dams across Parbati river, Newaj river, Kalisindh river, barrage across Ahu river, five tunnels, lift and the creation of seven reservoirs in upper Chambal sub-basin. It is programmed to complete the project in two phases. The 1st phase having the construction of link canal including head works and the 2nd phase contains construction of seven reservoirs in upper Chambal sub basin. Both the phases will be executed simultaneously. The works broadly comprise the following items:

- i. Construction of three main dams at Patanpur across Parbati River, Mohanpura across Newaj River and Kundaliya across Kalisindh river and barrage across Ahu river.
- ii. Either construction of 243.613 km link canal in case of linking to Rana Pratap Sagar reservoir alternative (a) or construction of 226.628 km link canal (including 19.0 km pumping reach alongwith 1.55 km pipe line) in case of linking to Gandhi Sagar alternative (b)-I involved three stage lift or 201.828 km long link canal (including 3.2 km pumping reach) in case of linking to Gandhi Sagar reservoir alternative (b)-II involved single stage lifting.
- iii. Construction of one tunnel having 6.608 km length between Patanpur to Mohanpura, two nos. of tunnel having 1.285 km and 3.10 km length between Mohanpura to Kundaliya reservoirs and two tunnels of 3.601 km and 5.96 km length between Kundaliya to Rana Pratap Sagar reservoir.
- iv. In case of linking to Gandhi Sagar alternative (b)-I laying of 1.55 km long pipe line at three different places and installation of pumps.
- v. In case of linking to Gandhi Sagar alternative (b)-II laying of 3.20 km long pipeline and installation of pumps.
- vi. Construction of cross drainage and canal structures.
- vii. Construction of seven reservoirs in Upper Chambal sub basin.

Keeping in view of above works, the P-K-C link canal project is proposed to be completed in 8 years.

During the first year of construction period the infrastructural works such as pre-construction survey & investigation, all designs, invitation of tenders, land acquisition, construction of approach roads and temporary buildings, purchase of machineries will be taken up. The construction of buildings, camp colonies, land acquisition and pre-construction survey and investigation would be completed in 3rd year.

During 2nd year the excavation and construction of three dams and excavation in deep cutting of canal will be started and completed in 7th year.

Excavation of tunnels, construction of canal in balance reaches and embankment portion and construction of seven reservoirs in upper Chambal reaches will be started in 3rd year, construction of seven reservoirs would be completed in 8th year.

During the 4th year construction and lining of tunnels, construction of major cross drainage works and lining of canal will be taken up. The construction and lining of tunnels and canal will be completed in the 8th year.

Installation of pumps, pipelines and construction of Intake well will be started in 5th year. The plantation along the bank of canal will also be started in 5th year. The distributary system as well as drainage including command area development is programmed to be taken up by 5th year will so planned as to be completed by 8th year.

9.2 Material Planning

All the construction materials like soil for embankment sand, coarse aggregate, bricks etc. except cement and steel are available within close vicinity of link canal alignment. The cement and steel are to be procured from various agencies. The cement can be procured from Mangalam cement factory situated in village Modhak, district Kota (Rajasthan). The carting distance of each dam sites by road from respective railway stations are as given in Table -9.1.

Table - 9.1
Distance of Dam sites from Railway Stations

Railway Station	Dam site	Distance in km
Biaora	Patanpur	40 km
Biaora	Mohanpura	15 km
Bhawani mandi	Kundaliya	80 km

The location of seven reservoirs is within 45 km from Ujjain railway station. The quarry map showing the availability of material has been prepared.

9.3 Plant and Machines Planning

The requirement of plant and machinery has been worked out separately for earthwork, canal lining and structures. Details are given in Table-9.2.

**Table-9.2
Special tools & plant**

Sl. No.	Particulars	Quantity in Number
	'Q' special tools & plant	
1	Dumper	8.00
2	Wagon drills	5.00
3	Air compressor	2.00
4	Concrete mixture of Different sizes	10.00
5	Sheep- foot roller	4.00
6	Diesel Road Roller(8 T to 10 T Capacity)	2.00
7	Water Tanker 7000 Its	5.00
8	Crawler Tractor 50 HP	2.00
9	Crane 10 T	1.00
10	Generator 75 KVA	2.00
11	Diesel Pump	
	60 HP	2.00
	35 HP	2.00
	10 HP	4.00
	Inspection and Transportation Vehicles	
12	Jeeps	16.00
13	Car	2.00
14	Ambulance	2.00
15	Buses	2.00
16	Trailer	10.00

9.4 Man Power Planning

Based on the construction programme and various other norms, the administrative set up is worked out for completion of project. It is proposed to have two Chief Engineers (Level-1), one for head works and other for canal & canal structures headed by the Project Manager. Under the Chief Engineer (Head work) four circle offices will be proposed and under the Chief Engineer (Canal & Canal Structures) three Circle offices will be proposed. There will also be one Director (Administration), one Director (Finance), one Director (Quality Control) and one Director (Technical) under the Project Manager. There will also be attached Superintending Engineer (Mechanical) under the each Chief Engineer. All these offices will be suitably located for effective monitoring and control over the execution of project. A chart showing the administrative set up is shown below:

