

## **Chapter 10**

### **Construction programme and manpower and plant planning**

#### **10.1 Construction programme**

The construction work of Mahanadi (Barmul)- Godavari (Dowlaiswaram) link project is proposed to be completed in 8 years. It is proposed to complete all the preliminary works such as additional surveys, design studies, laboratory tests, construction of approach roads etc. in the first 3 years. The process of land acquisition and thereafter rehabilitation and resettlement, procurement of machinery and T&P are proposed to be taken-up from the first year itself and can be completed by the end of third year. Construction of colonies and approach roads for the same and laying of electric lines shall also be commenced from first year onwards. The construction of power block, power house, head regulator and tunnels are to start with excavation from the fourth year and would be completed by the end of seventh year. The excavation of canals is to commence from third year and construction of the cross drainage and cross masonry (CD and CM) works are proposed to be completed by the end of eighth year. The lining work of the entire length of canal will be started in fourth year and the same will be completed by the end of eighth year. The distributary system as well as drainage including command area development are programmed to be taken-up simultaneously in the third year and can be completed by eighth year. The proposed diversion to Godavari river will be started by the end of eighth year. **Plate 29** depicts the construction schedule of the above events of works of the link project. The unit wise construction programme is given in the following paras.

#### **Unit I - Head works**

All the preliminary works are proposed to commence in the first year and to be completed by the end of third year including designs and field tests. The construction works of dam and head regulator shall be taken-up from fourth year and completed by the end of seventh year. Other miscellaneous works are also slated to be taken-up and completed simultaneously.

#### **Unit II - Conveyance System**

The preliminary works shall be started from first year and to be finished by third year including land acquisition, rehabilitation and resettlements. Construction of camp colonies is also proposed to be started in the first year itself and completed by the end of third year. The excavation for main canal, branch canals, construction works of CD & CM structures are to be started from third year and completed by the end of eighth year. The procurement of

special tools and plants is to be taken-up and completed in one year time i.e. in the third year. Construction of distributaries, minors and water courses, are also to be simultaneously started in the third year and completed by eighth year. Plantation can be taken-up in the seventh year and to be completed by eighth year.

### **Unit III - Power house**

The preliminary works such as design of various components of power house and laboratory tests shall be started in the first year and completed by the end of third year. Procurement of tools and plants is to be done in third year. All the power plant civil works and electrical works shall be started in the fourth year and completed by seventh year.

## **10.2 Material planning**

### **The works broadly comprise of the following items**

- i. Construction of dams, power block and head regulator
- ii. Construction of power house at the head of the link canal
- iii. Construction of 0.75 km long tunnel at RD 24.475 km and 5.4 km long tunnel at RD 634.050 km
- iv. Construction of link canal, branch canals, distributaries and field channels and allied works.
- v. Construction of CD & CM structures.

All the construction materials like soil for embankments, sand and coarse aggregates are available within a maximum lead of about 50 km from the proposed alignment of the link canal. Nearest stone and sand quarries have been identified during the surveys and investigations, throughout the length of the link canal. **Plates 10 (1/2) and 10 (2/2)** show the locations of the same. Cement and steel required can be procured from places identified for the purpose, which are well connected by roads and railways. These aspects are already dealt in detail in **Chapter 4: Surveys and Investigations**.

## **10.3 Plant and machinery planning**

The special tools and plants required for construction of the link project are shown in **Table 10.1**.

**Table 10.1**  
**Requirement of special tools and plants**  
**for construction of link canal**

<b>Sl. No.</b>	<b>Item</b>	<b>No.</b>
<b>I.</b>	<b>“Q” Special tools and plants (Machinery)</b>	
1	Hydraulic Excavator 3.8 m <sup>3</sup>	62
2	Hydraulic Excavator 2.84 m <sup>3</sup>	10
3	Rear dumper 35T	380
4	Wagon drills	35
5	Air compressors 40 cft	35
6	Concrete mixer 1077 cft	17
7	Concrete mixer 1 m <sup>3</sup> with weight batcher	35
8	Dozer 320 HP	14
9	Water tanker 7500 Lts.	59
10	Water pump 10 HP	24
11	Vibrator rollers	14
12	Trucks 8-10T	114
13	Motorised water tanker 7500 Lts.	173
14	Trailors 25T	7
15	Trailors 40T	7
16	Pneumatic tractor 50 HP	104
17	Trailors 7.5T	104
18	Crane 10 T	4
19	Generator 75 kVA	14
20	Water pump	35
21	Workshop equipment	311
22	Dewatering equipment	35
23	Explosive van	7
<b>II.</b>	<b>Inspection and transportation vehicles</b>	
24	Jeeps	430
25	Cars	28
26	Ambulances	7
27	Buses	7
28	Station wagons	104
29	Jeep trailors	69

#### **10.4 Manpower planning**

It is proposed to have a General Manager (Project) office at Bhubaneswar, and two Chief Engineer's Offices located at Berhampur and Visakhapatnam under the control of General Manager (Project). Each of these Chief Engineer's Office in turn will have four construction Circle Offices, one

Designs & Quality Control Circle and One Mechanical Circle office. Four divisions will be located at various places along the canal alignment under each Construction Circle office and four Divisions under Mechanical Circle office. It is also proposed to have two pay and Accounts Offices under each Chief Engineer's office to facilitate the fiscal transactions in respect of the works and other payments like salaries, T.A and D.A, etc., to the personnel working in the project offices. Total seven Special Deputy Collector Offices are proposed, i.e. three under CE-I and four under CE-II offices for the land acquisition and other related works. Suitable places along the link alignment for locating all these offices have been tentatively identified to facilitate effective monitoring and control over the execution of various works. A chart showing the administrating setup of offices with tentative locations of various offices is given as **Annexure 10.1**.

### 10.5 Programme of year-wise expenditure

The total cost of the Mahanadi - Godavari link project is estimated to be Rs. 54019 crore at 2018-19 price level. **Table 10.2** shows the tentative distribution of the year-wise expenditure for construction of the link project, so as to complete the same within the proposed period of construction of 8 years. A bar chart depicting the annual financial outlay is given at **Annexure 10.2**. The year wise expenditure for the construction of the link canal is given at **Table 10.2**.

**Table 10.2**  
**Year-wise expenditure for the construction of the link canal**

<b>Year</b>	<b>Total Expenditure (Rs. in crore)</b>
1 <sup>st</sup>	3754
2 <sup>nd</sup>	3799
3 <sup>rd</sup>	9248
4 <sup>th</sup>	7789
5 <sup>th</sup>	7789
6 <sup>th</sup>	7789
7 <sup>th</sup>	7065
8 <sup>th</sup>	6786
<b>Total</b>	<b>54019</b>

If financial allocations are made in accordance with the above proposed year-wise distribution, duly increasing the same in relation to the possible inflation and planning of men and material is properly done, the construction of the project can be completed within the proposed period of 8 years.