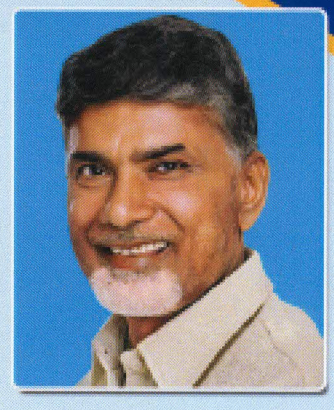
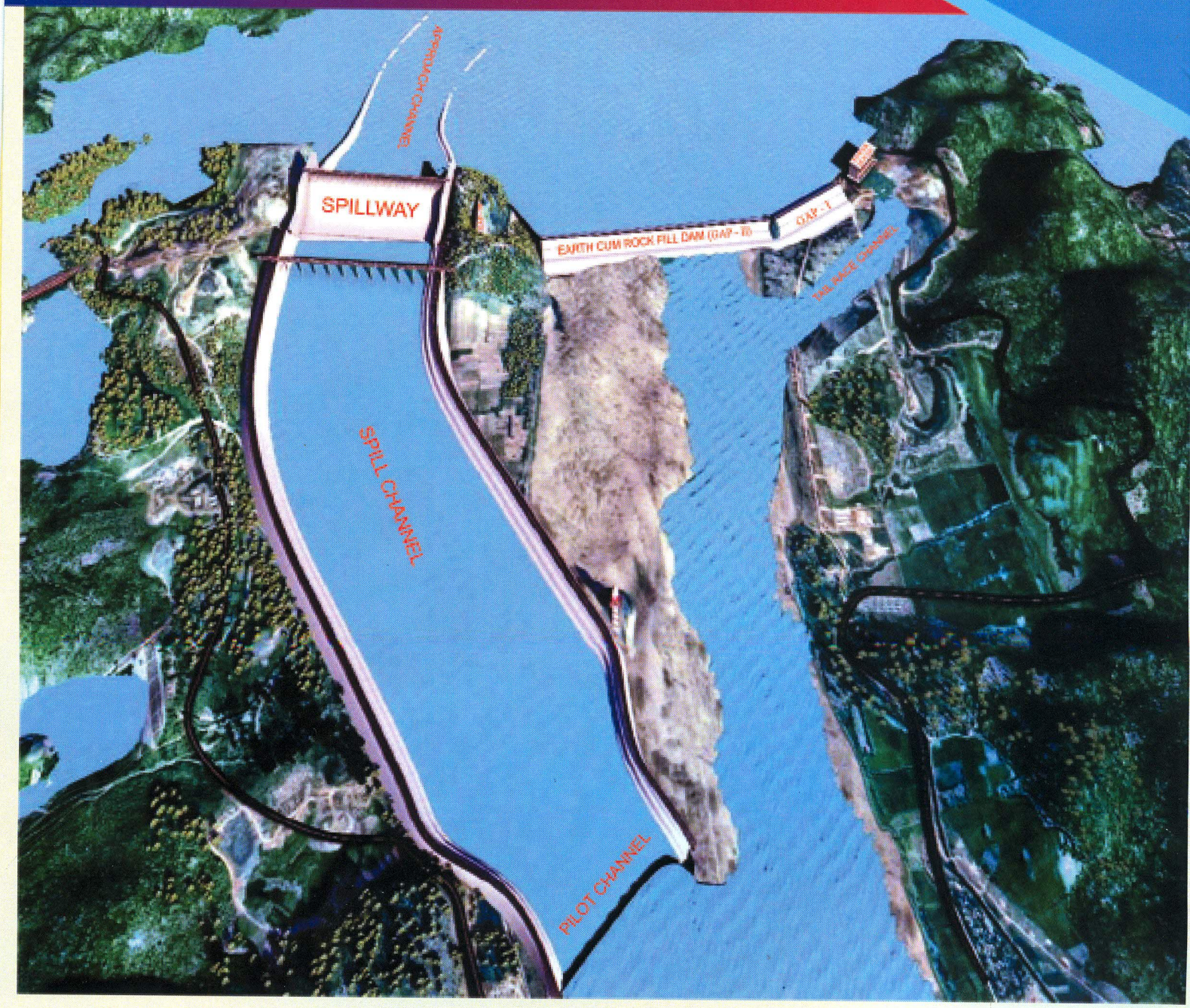


GOVERNMENT OF ANDHRA PRADESH

WATER RESOURCES DEPARTMENT

POLAVARAM IRRIGATION PROJECT

DECEMBER 2016



Hydraulic Particulars

- Full Reservoir Level : +45.72 metres (+150.00 feet)
- Minimum Draw Down Level : +41.15 metres (+135.00 feet)
- Crest Level of Spillway : +25.72 metres (+84.39 feet)
- ECRF Dam Top Bund Level : +54.00 metres (+177.16 feet)
- Gross storage of Reservoir : 194.60 TMC
- Live storage : 75.20 TMC
- Probable maximum Flood Discharge : 50 Lakh Cusecs
- Catchment Area : 3,06,643 Sq. Kms

Introduction

- National River-Linking Project, which works under the aegis of the Indian Ministry of Water Resources, was designed to overcome the deficit in water in the country.
- In this project's case the Godavari river basin is considered as a surplus one, while the Krishna River basin is considered to be a deficit one. Every year thousands of TMC of Godavari water flowed into the Bay of Bengal.
- The Study recommended that sizeable surplus water was to be transferred from the Godavari River basin to the Krishna River basin.
- Polavaram Irrigation Project, widely known as the Polavaram Project, is planned on the river Godavari, near Ramayyapeta Village, Polavaram Mandal of West Godavari District, Andhra Pradesh.
- The Project is located 42 Kms upstream of Sir Arthur Cotton Barrage at Dowlaiswaram.
- The Project is a Multi-purpose Terminal reservoir on the river Godavari.
- The unique feature of Polavaram Project involves construction of 1.5 m thick concrete diaphragm wall up to a depth of 100 m below the river bed under the earth cum rockfill dam which is first of its kind in India.
- Spillway of 1054.40 m with 48 vents to enable discharge of 50 Lakh cusecs of water which is first of its kind in world.

History

- The Polavaram Project was first proposed during the year 1941 and preliminary investigations were conducted during 1942 – 44.
- At that time, the project was contemplated with FRL up to +208 feet with storage of 836.35 TMC.
- The Board of consulting Engineers, (BOCE) under the Chairman-ship of Dr. J L Salvage (retired Chief Designs Engineer of USBR, Denver), was formed to study the difficulties in dam construction.
- The other members of Board of consulting Engineers were Dr. Karl Terzagi, Professor of Soil Mechanics & Engineering Geology (Harvard University, USA) and father of soil mechanics, Mr.S.O.Harper, retired Chief Engineer of USBR, USA and Sir. Murdoch Macdonald. & Partners consulting Engineers, London for the Polavaram Project.
- The Project was earlier named as "Rama Pada Sagar Project".
- After reorganization of States, the Godavari Water Disputes Tribunal passed final orders directing that Polavaram Project shall be cleared by CWC as expeditiously as possible for FRL/MWL+150 ft.
- In 2004-05, execution of the Polavaram Irrigation Project (main dam and canal works) was started.
- The Government of India, recognizing the importance of this Project, declared it as a National Project under AP Reorganisation Act, 2014.
- As per the Ministry of Water Resources (Government of India) notification, Polavaram Project Authority (PPA) was formed on 9th January 2015 for speedy execution of the Project.
- As per special package announced to new Sate of Andhra Pradesh by Govt of India. The balance cost of Irrigation component of the Project as on 1st April 2014 will be borne 100% by Govt. of India taking financial assistance from NABARD.

Benefits

- Irrigation to 6.14 Lakh Ha. (15.2 Lakh Acres)
- Production of Hydro power with installed capacity of 960 MW
- Diversion of 80 TMC of Godavari water from river Godavari to Krishna river (which will provide Irrigation to 8.0 Lakh Acres)
- Supply of 23.44 TMC of water to Vishakhapatnam city
- Drinking water facility to 540 villages (population of 28.5 lakhs)
- Development and export of pisci-culture & boating facilities
- 5 TMC & 1.5 TMC of water to Odisha & Chhattisgarh, respectively
- Stabilization of existing command area of KDS & GDS of 23.50 Lakh Acres

Clearances obtained

- Environmental clearance from MoEF.
- R&R Clearance from Ministry of Tribal Affairs .
- Forest Clearance from MoEF – Stage I & Stage II .
- TAC clearance for revised cost of Rs 16,010.45 Crores (2010 – 11 price levels) from CWC / MoWR. TAC clearance for original cost of Rs. 10,151.04 Crores at Price level of 2005-06.
- Investment clearance for original cost from planning commission.
- All the statutory clearances required for the Project have been obtained.

Main Components

Head Works

Spillway: A concrete spillway is proposed on right flank for a length of 1054.4 metres with 48 nos. radial gates, each of size 16 metres x 20 metres with Hydraulic hoist arrangement

Earth cum Rockfill Dam: It is proposed across the main river course for a length of 2454 metres with a top width of 15 metres (Gap -I: 564 M, Gap-II: 1750 M and Gap-III: 140 M) and a Diaphragm Wall under the ECRF Dam throughout the dam portion, with a thickness of 1.5 metres and depth varying from 40 metres to 100 metres

Hydro Electric Power House: A Hydro Electric Power House of 960 MW with 12 nos of vertical Keplan turbines, each of 80 MW capacity is proposed on the left flank of the river

Right & Left Connectivities: Connectivities with regulators, twin tunnels and saddle dams are proposed for diverting water to the right and left canals from the reservoir

Main Canals

Right Main Canal: The 174 Kms length of right main canal will provide irrigation facility to 3.2 lakh acres of new command area in West Godavari & Krishna districts, besides diverting 80 TMC of water from river Godavari to Krishna river, which will provide irrigation to a new ayacut of 8.0 Lakhs acres

Left Main Canal: The 181.5 Kms length of the left main canal will provide irrigation facility to 4.0 lakh area of new command area in East Godavari & Vishakapatnam districts besides supplying of 23.44 TMC of water to Vishakapatnam city.

Status of Works

Head Works

Spillway

Earthwork excavation of 151 Lakh CuM has been completed against a total of 161.50 Lakh CuM (93% Completed)

Concrete work of 17 Lakh CuM is proposed to be commenced from 30th December, 2016.

Proposed to start fabrication of Radial Gates of 22,000 MT from 14th January, 2017.

Approach Channel, Spill Channel, Pilot Channel & Left Flank

Earthwork excavation of 512 Lakh CuM has been completed against a total of 1055 Lakh CuM (49% Completed)

Earth cum Rock Fill Dam

Earthwork embankment of 131.00 Lakh CuM (Including Gap I ,ECRF Dam,Gap III and Coffer Dams) is to be taken up.

Diaphragm Wall of 1.20 Lakh CuM of plastic concrete is proposed to be commenced from January, 2017

Main Canals

Right Main Canal : 90% of the work has been completed

Left Main Canal : 61% of the work has been completed

Expenditure

Expenditure incurred before National Project : 5548.69 Cr.
Expenditure incurred under National Project :3133.75 Cr.
Total expenditure incurred under Polavaram Irrigation Project : 8682.43 Cr.

Important Events

Hon'ble CM of Andhra Pradesh Sri N. Chandra Babu Naidu garu has visited the project site 11 times so far.

Every Monday Hon'ble CM is conducting virtual review of the project from Vijayawada. So far 12 No's of virtual inspection and reviews have been conducted.

CEO, PPA Sri Amarjeet Singh has visited the project site and conducted review meeting.

Dam Designs Review Panel of the Project is conducting meeting every month to resolve the technical issues.


POLAVARAM IRRIGATION PROJECT
GRAB AND TRENCH CUTTER FOR DIAPHRAGM WALL


POLAVARAM IRRIGATION PROJECT
PIT TEST ALONG THE DAM AXIS

POLAVARAM IRRIGATION PROJECT - HEAD WORKS