

# Chapter III

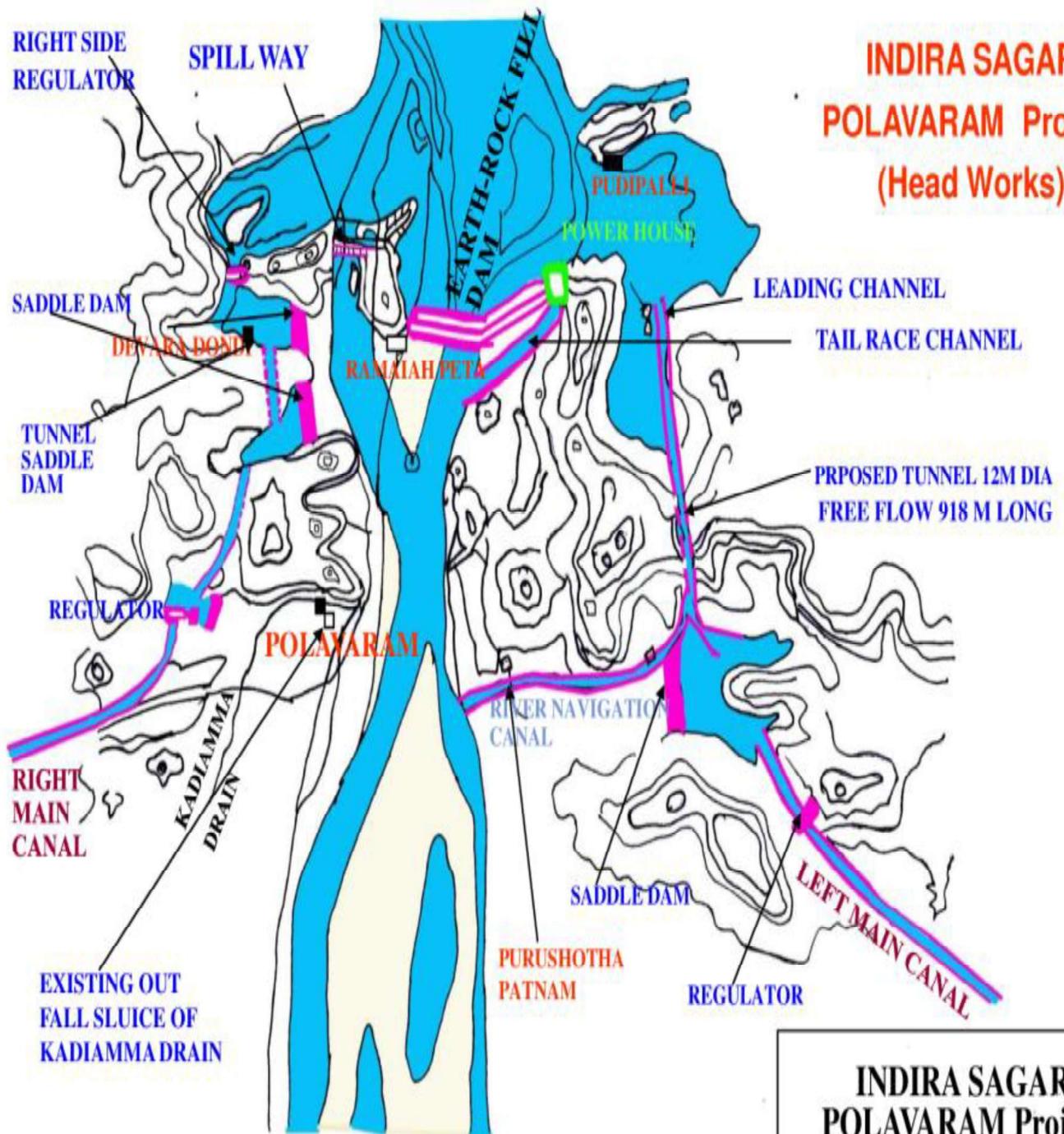
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## **Construction of Headworks and Powerhouse**

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# INDIRA SAGAR POLAVARAM Project (Head Works)



INDIRA SAGAR  
POLAVARAM Project  
INDEX MAP OF HEAD WORKS



## Chapter III Construction of Headworks and Powerhouse

Though planning tools and project monitoring system (PRIMAVERA), used for effective implementation of project, was procured by the Department, the same was not put to use. Non-adherence to the planned construction schedule led to damage to the Diaphragm Wall (D-Wall) and expenditure incurred on construction had become wasteful. The rectification of D-Wall was not taken up as of March 2023. There were instances of awarding of works on nomination basis duly revising the estimate in violation of rules, finalisation of contract agency by altering tender conditions and rules selectively and awarding of works to single tenderer in contravention to government rules for reverse tendering process.

The discharge capacity of twin tunnels was unilaterally increased in the right connectivities by GoAP without obtaining prior approval of PPA and CWC. Non-handing of clear title of land for execution of left side connectivities rendered the execution of left connectivities incomplete, even after 17 years of commencement of the project.

Interest free Special Revolving Fund and Special Imprest were sanctioned to the contract agencies, in contravention to the laid down rules, which led to loss of interest that could have been earned. Despite declaration of rock class by the Geological Survey of India as poor and suggested treatment of weak rock zones, the excavation of twin tunnels was carried out without treatment, which led to collapse of tunnel and expenditure rendered as wasteful. Due to closure of agreement with the existing contractor, GoAP had to shoulder additional expenditure towards dewatering and silt removal. Quality Control (QC) certificates are being issued to the contractors for facilitation of bills, despite non-compliance to the Inspection notes issued by QC wing.

In execution of Polavaram Hydro-electric Project, the Department had extended interest free advances causing loss of interest to the exchequer. Bank guarantees submitted by contract agency did not cover the contract period and were expired prior to termination of contract. There was delayed claim for goods and service tax after expiry of stipulated period. Procurement of Electromechanical material without immediate need resulted in idling of material. The cost of third-party quality assurance agency being the responsibility of contract agency was borne by the Department.

### 3.1 Construction of Headworks

The scope of work for Headworks consists of construction of 2,454 m long Earth-Cum-Rock Fill (ECRF) dam<sup>67</sup> (in Gap-I, II & Gap-III) with a maximum height of 45.08 m across the main

<sup>67</sup> the project comprises an ECRF dam of 564 m long and 25.32 m high in Gap-I on the left bank of the river; 1,750 m long and 45.08 m high in Gap-II at the center of the river and a concrete dam of 140 m long and 15.32 m high in Gap-III on the right bank

course of the river with Spillway on the right flank, and Powerhouse on left flank on downstream slopes of 'D' hill. To arrest the seepage of river water under ECRF dam, twin plastic concrete<sup>68</sup> Diaphragm Walls of 0.60 m thickness 2m apart was proposed. The Diaphragm Wall was to be constructed with plastic concrete using panel construction<sup>69</sup> method. To facilitate the construction of ECRF dam, it was proposed to block the river flow by constructing Cofferdams<sup>70</sup> and divert the flow through Spillway. The proposed gross storage capacity of the reservoir so formed would be 194.60 Thousand Million Cubic feet (TMC) at Full Reservoir Level (FRL) of (+) 45.72 m and live storage of 75.20 TMC.

The Spillway with crest level at Elevated Level (EL) of (+) 25.72 m located on the right bank is designed to discharge a maximum flood of 36 lakh cusecs with structural stability of probable maximum flood of 50 lakh cusecs. The length of Spillway proposed was 1,054.40 m overflow section and non-overflow of 37 m on either side with total length of 1,128.40 m long. The Spillway shall consist of 48 numbers of radial gates of size 16 m width and 20 m height. In the upstream of Spillway an Approach Channel (2,310 m long) and in the downstream a Spill Channel (2,764 m long) and Pilot Channel are to be provided. Stilling basin (110 m long and 1,043.40 m wide) with floor level of EL (+) 9.25 m shall be constructed in the downstream of Spillway for energy dissipation.



**Picture 3.1: Present status of Construction of Spillway**

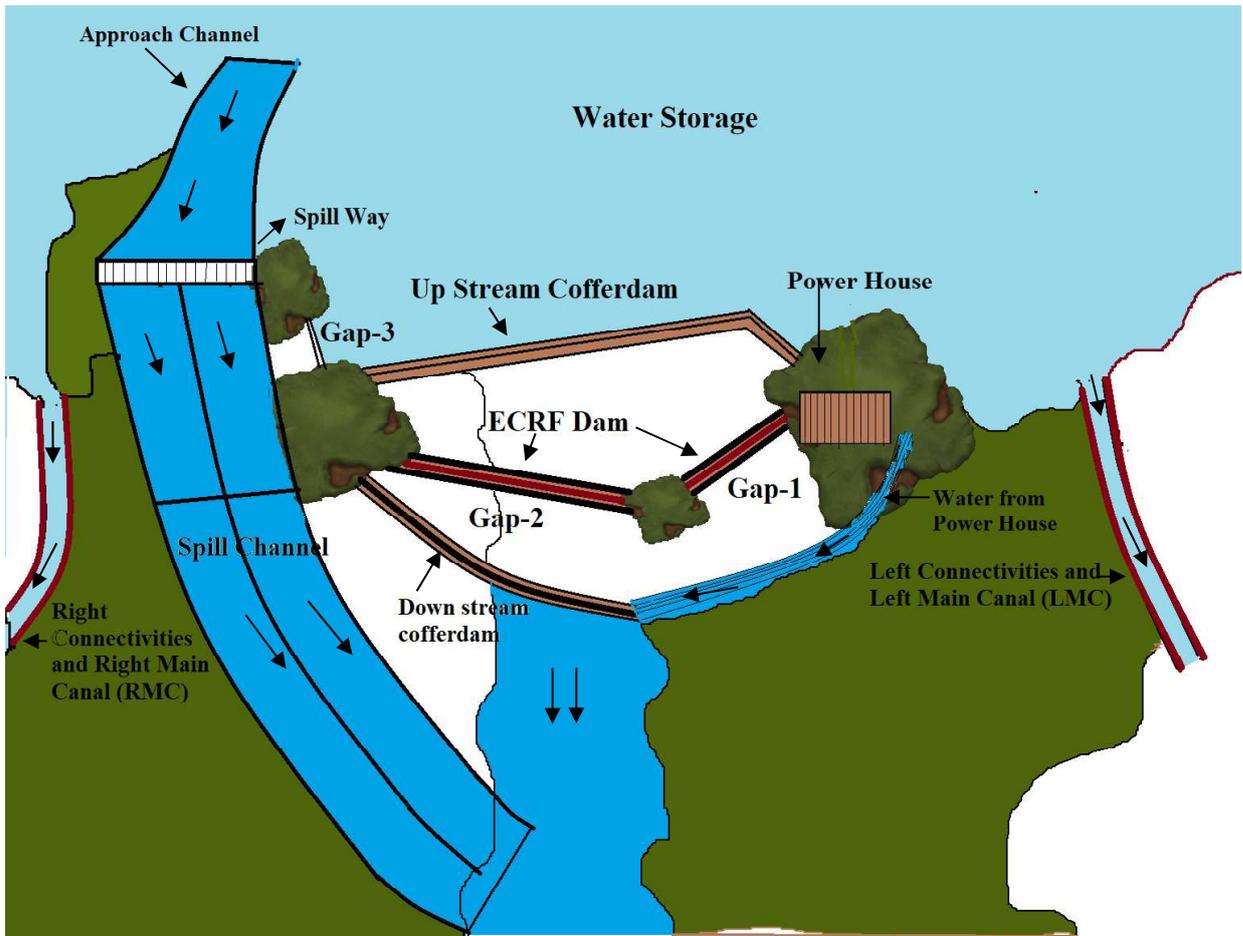
To connect the ECRF dam with the canals, right and left connectivities were proposed on both sides of the dam. The components of right and left side connectivities include construction of Head Regulators, entry & exit channels, excavation of tunnels, saddle dams, irrigation tunnel, navigation canal, *etc.* Suitable earthen bunds were proposed at E&F saddles to form subsidiary reservoirs interconnected with tunnels. A line diagram showing the layout of Headworks is given below:

<sup>68</sup> plastic concrete is used to provide a seepage cut-off wall that has sufficient strength to withstand both static and seismic stresses beneath ECRF dam which is flexible enough to undergo seismic deformations with the surrounding soils

<sup>69</sup> panel construction method involves construction of guide wall, excavation to form trench and reinforcement and placing of concrete

<sup>70</sup> upstream with top elevation of (+)42.50 m and downstream elevation of (+)30.50 m

Picture 3.2: Line diagram showing layout plan of Headworks



### 3.1.1 Planning Process

#### 3.1.1.1 Non-adoption of planning tools for effective implementation of project

The guidelines for preparation of Detailed Project Reports (DPRs) of Irrigation and Multipurpose Projects issued (2010) by Ministry of Water Resources emphasised formulation of Project Evaluation and Review Technique (PERT) Charts or Critical Path Method (CPM) diagrams (while preparing construction programme) for effective monitoring of milestones and taking timely remedial measures in all irrigation projects. The PERT/CPM would help in assessing the safety and proper functioning of dams and other hydraulic structures in river valley projects. The DPRs for irrigation and multipurpose projects shall be approved by the Central Water Commission (CWC). The Polavaram Project Authority (PPA) also suggested (July 2019) to hire services of consulting agency for providing service on PRIMAVERA software for monitoring real time progress of the project.

Audit noticed that though modified DPRs were prepared (2017-18) and got approved (February 2019) by CWC, the Department did not prepare any such PERT/CPM diagrams for effective monitoring of milestones and taking timely remedial measures while finalising the project cost and estimated time for completion of project.

The Government replied (June 2024) that PRIMAVERA software was purchased and installed in five locations. During the Exit Conference, the Government stated (November 2024) that the hardware and software for PRIMAVERA was installed in five locations. As the Department

lack expertise in maintenance / updating the data, the same is being entrusted to Water and Power Consultancy Services (India) Limited and would be in place within three months.

The Government did not furnish the reasons for non-preparation of PERT/CPM diagrams.

Thus, it is evident that though installation of hardware and software was completed, the software was not put to use. The project monitoring system was not implemented even after completion of majority of the works (*i.e.*, 82 per cent of Headworks). It was further noticed that there were critical failures in planning wherein the Department failed to envisage critical works before onset of monsoon/ flooding season, *etc.*, (*as discussed in subsequent paragraph*), thereby delaying the completion of the project and damaging certain portions of already executed works.

### **3.1.1.2 Non-adherence to the planned construction schedule led to damage of Diaphragm Wall**

As per construction schedule/programme stipulated in the Detailed Project Report (DPR) 2010-11 and 2017-18, the construction programme of dam and Headworks was planned for 12 years from the date of commencement of works. As per construction schedule, the project would commence with excavation of Pilot Channel, to be completed by second year of commencement of works. The excavation of foundation for Spillway and Spill Channel shall commence in the second year and continue till fifth year of construction programme. During the fifth year, construction of Diaphragm Wall (D-Wall) for main earth dam was to be commenced and completed partly except in the deep course portion and construction of Spillway on left flank to be completed.

During the first six years of construction schedule, the flood water shall pass through the main river course. Spill Channel would be completed by sixth year to full design section and construction of Diaphragm Wall would be completed except in deep course by sixth year. Approach Channel taken up in sixth year shall be completed, the Cofferdam in ECRF dam would be formed and the balance Diaphragm work in deep course portion would be completed by seventh year. By the eighth year of construction, the river water would flow through the gap of Spillway. The ECRF dam truncated section would be taken up and completed up to Cofferdam level.

Thus, as per construction schedule, diversion of the river course through the Spillway is the prima-facie requirement to commence construction of the D-Wall in the deep course portion and also construction of the Cofferdams.

**(a) Improper implementation of construction schedule**

Audit noticed that in deviation to the above construction schedule, the work of D-Wall<sup>71</sup> was taken up in February 2017 and completed at a cost of ₹399.77 crore by June 2018. However, the works of Spillway and Spill Channel commenced in July 2005 remained incomplete as of June 2018. Spillway was finally completed in September 2022 and the construction of Spill Channel was still in progress as of March 2023. Prior to completion of the Spillway and Spill Channels to the designed levels, and river diversion, the works of both upstream and downstream Cofferdams were also taken up (November 2018) with a target to complete before the onset of 2019 monsoon.

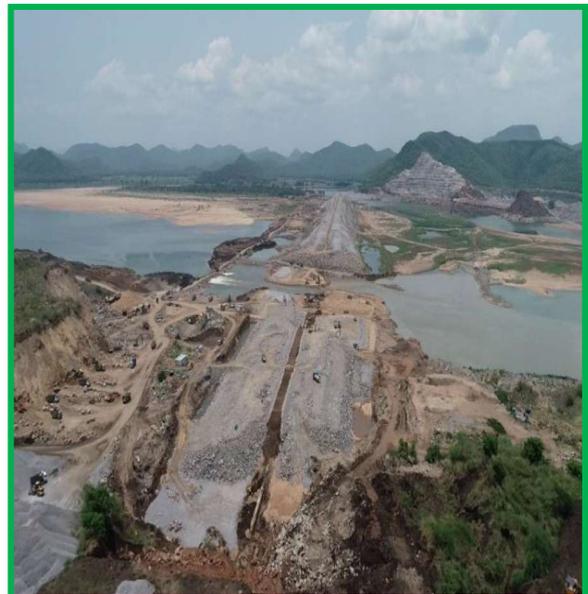


**Picture 3.3: Status of Spillway in August 2019**

As R&R works lagged far behind the schedule, the construction of Cofferdams could not be completed within the available time, *i.e.* before onset of monsoon 2019. Prior to onset of monsoon 2019, the works of both up and down stream Cofferdams was done duly leaving a total gap of 600 m length on both ends of the upstream Cofferdam for passage of water.

Meanwhile, GoAP had ordered stop work (July 2019) and pre-closed (August 2019) the contract with the existing contract agency. The contract was pre-closed without entrusting the works to another contract agency. Thus, necessary steps / precautions to protect the already executed works were not covered by the contract, as it was pre-closed.

During the monsoon period August to October 2019 and October and November 2020, floods with a maximum discharge of 14.90 lakh cusecs and 24.00 lakh cusecs respectively occurred in River Godavari. The flood water could not pass through the main course due to ongoing construction of Cofferdams across the river and the water could not be routed through Spillway as construction of Spillway was not completed.



**Picture 3.4: Damaged upstream Cofferdam**

As a result, at project site, the flood flow of width 2,400 m was allowed to pass through the available width of 600 m on upstream of Cofferdam. The excessive flood flow than the

<sup>71</sup> of length 1,396.60 m with a maximum depth of 93.50 m

capacity, not only damaged the partially constructed Cofferdam, but also caused severe damages to the D-Wall. Also, the riverbed in ECRF Gap-II portion was deeply eroded on both up and down stream side of D-Wall.

Thus, due to non-adherence to the planned construction schedule as per DPR and also due to non-existence of a contract agency to mitigate the situation, the flood water was blocked from passing through the normal river course and provision for diversion was not available due to non-completion of Spillway and Spill Channel. Instead, the entire flood water was allowed to pass through the gaps of upstream Cofferdam which resulted in damage to Cofferdam works and D-Wall. Thus, the entire expenditure of ₹399.77 crore incurred towards construction of D-Wall was rendered wasteful.

**(b) Rectification works for Diaphragm Wall**

At the request (May 2022) of WRD, National Hydroelectric Power Corporation (NHPC) visited the project site, conducted geo-physical studies and other required tests and presented (March 2023) the observations to Dam Design Review Panel (DDRP). The members of DDRP agreed for construction of a new D-Wall parallelly in the scoured portions and in two weak zones upto fresh rock level with proper link with the existing intact D-Wall and further suggested to remove the top 5m degraded D-Wall from Chainage 363m to 1035m. Accordingly, Government accorded (April 2023) administrative sanction for the rectification work<sup>72</sup> of D-Wall for ₹2,020.05 crore.

Thus, it took four years (since 2019) to assess the extent of damage and finalise the alternatives to rectify the damaged D-Wall, due to which construction of ECRF dam could not be commenced.

**(c) Expenditure towards rectification work**

Audit noticed that to safeguard the already constructed structures or to rectify the damaged Cofferdams, the Department had incurred an additional expenditure of ₹143.50 crore towards protection works of Cofferdam as detailed in *Table 3.1*.

**Table 3.1: Showing the rectification works taken up**

Sl. No.	Name of the Work	Expenditure incurred (₹ in crore)
1.	Filling up of Cofferdams toe region with sand	109.54
2.	Protection works to the partially completed upstream and downstream Cofferdams and Diaphragm Wall	20.77
3.	Temporary work of Ring bund & Pipe culverts works under the upstream Cofferdam in reach III	10.34
4.	Sand filters for rectifying scoured portion in the Cofferdams	2.85
<b>Total</b>		<b>143.50</b>

Source: Information furnished by the Department

Thus, non-adherence to construction schedule had led to additional burden on the exchequer towards rectification works.

<sup>72</sup> G.O.RT.No.138 WRD dated 10.04.2023

The Government replied (June 2024/November 2024) that as PIP being a ‘National Project’, many institutions<sup>73</sup> are closely involved in construction of the project. The works of PIP were being carried out, based on the decisions, recommendations / suggestions of these institutions from time to time. Under these conditions, there was no possibility for execution of the project works haphazardly by the Department. Regarding rectification works, it was replied (June / November 2024) that in view of the urgency and as per the direction of DDRP, protection works were taken up for partially completed Cofferdams.

During the Exit Conference, the Government stated (November 2024) that the project involves very complicated Geo-technical aspects. At the time of preparation of DPR the dam was planned to be constructed in seven years. However, due to many challenges encountered during the process of execution, the actual execution got delayed and after detailed discussions and deliberations by various institutions involved, it was decided to execute the dam works and D-Wall along with the Cofferdams parallelly to save time. All the works executed in PIP were planned and monitored by various institutions. Now, a new D-Wall parallel to the existing one is planned for construction at an approximate cost of ₹990 crore.

The reply is not acceptable, as WRD and PPA failed to get the work executed in a sequential manner as per construction programme. Also, the contract with the second contract agency was pre-closed by the Government before awarding of the work to another contract agency. This led to damage to the already executed works resulting in a wasteful expenditure of ₹399.77 crore besides an estimated extra expenditure of ₹2,020.05 crore towards repairs/rectifications of the damaged D-Wall and an additional expenditure of ₹143.50 crore towards protection works to the Cofferdams.

***Recommendation 3.1: The State Government should ensure that the formulated construction schedule is adhered to, for smooth execution of the main dam work and finalise the long pending rectification work of damaged D-Wall.***

### **3.1.1.3 Grounding of works without prior approval of competent authority**

Section No. 9 (6) & (8) of the notification published (May 2014) by GoI, outlined the powers and functions of PPA. The PPA shall determine the volume of water to be stored, flowing in and out of the Polavaram reservoir, the volume of water utilised through each Main or Branch Headworks and evaporation and seepage losses on daily basis in a water year (1 June of a year to the 31 May of next year). The Authority shall decide on proper management of water including the manner and details of withdrawal of water from Polavaram reservoir in accordance with the orders of the Godavari Water Disputes Tribunal.

Audit noticed that GoAP had accorded administrative sanction (April/ September 2021) to take up the works *viz.*, lifting of water from PIP for a lift irrigation scheme and enhancement of discharge capacity of tunnels without the mandatory approval of PPA. The works were awarded to the contract agencies as shown in **Table 3.2**.

**Table 3.2: Details of works grounded without the approval of PPA**  
(₹ in crore)

<sup>73</sup> Ministry of Water Resources, River Development & Ganga Rejuvenation (MOWR) of GoI, DDRP, CWC, PPA, Central Soil and Material Research Station (CSMRS), Central Water and Power Research Station (CWPRS), Water and Power Consultancy Services Limited (WAPCO'S) and A.P. State Government bodies

Name of the work	Agreement Value	Date of award of work	Intended date of completion	Expenditure incurred as of March 2023	Status
Polavaram Lift Irrigation Scheme <sup>74</sup> for lifting of water <sup>75</sup> from the dead storage of PIP.	765.94	28.10.2021	27.10.2023	NIL	Work is in progress.
To enhance <sup>76</sup> discharge capacity from 20,000 cusecs to 40,000 cusecs of twin tunnels in respect of Package-63 work (Right Side Connectivities).	104.87	07.09.2021	14.12.2023	NIL	
To enhance <sup>77</sup> discharge capacity from 20,000 cusecs to 40,000 cusecs of twin tunnels in respect of Package-64 work (Right Side Connectivities).	116.87	07.09.2021	14.12.2023	2.07	1.78 per cent of work completed.

Source: Compiled based on Data provided by the Department

The nature of above works taken up necessitates changes in storage capacity and discharge capacities of dam and canals respectively and also drawal of water which needs prior approval of PPA. However, no prior approval of PPA was obtained for taking up of above-mentioned works by GoAP.

The Secretary, MoJS in the review meeting (June 2021) observed that implementation of the scheme be taken only after the scheme is found techno-economically viable and advised GoAP against any hasty action on the proposed new scheme. Further, in the review meeting, Secretary, MoJS directed to stop all the unapproved works. However, GoAP, without ascertaining techno-economic viability and due processes, had gone ahead and grounded (September and October 2021) the works at a cost of ₹987.68 crore and incurred an expenditure of ₹2.07 crore as of March 2023.

The Government replied (February 2023) that the process of obtaining permission from the competent authority in respect of the above three works is in progress. During the Exit Conference, the Government stated (November 2024) that the work for enhancing the discharge capacity from 20,000 cusecs to 40,000 cusecs was taken-up with a futuristic view of interlinking the rivers.

The reply is not acceptable, as PPA is the competent authority for allowing drawal of water out of PIP, permission to draw water should have been obtained prior to grounding of works. Grounding works without approval may subsequently result in stoppage of work midway, litigation, etc., and the expenditure incurred would be rendered wasteful, if the permission is not accorded by the competent authority. Moreover, as the discharge capacity of RMC was designed for 496.21 cumecs (17,523 cusec) increasing the discharge capacity of twin tunnels to 40,000 cusec is not warranted.

<sup>74</sup> G.O.RT.No.134 dated 19.04.2021

<sup>75</sup> to provide drinking water facilities to drought prone areas of West Godavari and Krishna Districts

<sup>76</sup> G.O.RT.No.335 dated 07.09.2021 (Package 63) - Construction of tunnel of about 900m length

<sup>77</sup> G.O.RT.No.336 dated 07.09.2021 (Package-64) - Construction of tunnel of about 880m length

### 3.1.1.4 Non-handing of clear title of land for execution of left side connectivities

The work ‘Construction of tunnel of 919 m of left side connectivities (Package Number 65)’ was entrusted (March 2005) to a contract agency<sup>78</sup> on EPC contract system for an amount of ₹90.99 crore. A supplementary agreement for additional items of work was concluded<sup>79</sup> (June 2006) for ₹12.92 crore. The total agreement value of work after inclusion of additional items was ₹103.91 crore and to be completed in 24 months (June 2008). However, the work could not be progressed and completed within the given time due to issues related to Land Acquisition.

Scrutiny of records revealed that after completion of work worth ₹15.02 crore, the contract was terminated (November 2018) under Clause 72<sup>80</sup> of Preliminary Specifications to Andhra Pradesh Detailed Standard Specifications (PS to APDSS), as the contract agency was declared (June 2017) insolvent by Hon’ble Mumbai High Court.

The balance work worth ₹88.89 crore was administratively approved for ₹276.80 crore and was awarded (March 2019) to another agency<sup>81</sup> for ₹290 crore by inviting tenders with revised Standard Schedule of Rates (SSR) with a condition to complete the work in 18 months. The agency had executed work worth ₹1.81 crore, before the work was pre-closed (final bill paid in December 2019) under Clause 7.3<sup>82</sup> of agreement. Subsequently, the work was awarded (November 2019) to the same agency on reverse tendering system for ₹231.47 crore with time period for completion of 18 months (*i.e.* by May 2021). Out of this, an amount of ₹126.29 crore was paid (June 2023) to the contract agency upto LS XXVIII & part bill.

However, the work could not progress as villagers (P.Gonduru Village of Devipatnam Mandal) raised objection and stated that pattas were issued in the name of the villagers, for the land required for Approach Channel-II, by the District Forest Officer under Recognition of Forest Rights. The issue was finally resolved in June 2020.

Audit noticed that:

- The Department had awarded the work without handing over of clear work site (including Forest land up to January 2011) to the first contract agency, due to which multiple extensions of time (finally in November 2018) was given to the agency invariably without progress of work. As a result, the components of work *viz.*, Approach Channel, tunnel, Head Regulator and Navigation lock were held up without progress.
- Changes in contract agencies and the contract system led to revision of rates resulting in an escalation of contract price.

Due to the above, the balance work of ₹88.89 crore was awarded for ₹231.47 crore at SSR 2018-19 resulting in cost escalation of ₹143.12 crore and also time overrun of more than 17 years from the actual date of award of work. Despite incurring an expenditure of ₹143.12 crore (₹15.02 crore + ₹1.81 crore + ₹126.29 crore), the work remained incomplete.

<sup>78</sup> M/s Unity Infra Projects Limited, Mumbai

<sup>79</sup> agreement No.1/2006-07 dated 21.06.2006

<sup>80</sup> in the event of the death or insanity or insolvency or imprisonment of the contractor or where the contractor being a partnership or firm becomes dissolved or being corporation goes into liquidation, voluntary or otherwise, the contract may, at the option of the Executive Engineer, be terminated

<sup>81</sup> M/s Max Infra (I) Limited, Hyderabad

<sup>82</sup> the Executive Engineer may terminate the contract for convenience

The Government replied (June 2024) that due to objections raised by Government of Odisha, Hon'ble Supreme Court of India had issued stop work orders in 2006 and works were stopped during May 2006 to April 2007 by the first contract agency. The Agency resumed the work (April 2007) of Approach Channel in non-forest zone and again suspended the work as the land required was not acquired by LA Authorities and local people demanded immediate land compensation for Patta land. Due to non-acquisition of forest land up to January 2011, the components of work were held up. Subsequently, the work was awarded to second contract agency and the contract was pre-closed and awarded (November 2019) to the same agency on reverse tendering system. The work could not be progressed due to objections raised by villagers, delay due to Covid-19 restrictions imposed by the Government, revision of drawings and non-payment of running account bills to contract agency.

Thus, it is evident from the reply that works were awarded on land, which was not acquired and for forest land, clearance had not been obtained from the Forest Department which led to dispute. The inaction of the Department to resolve the land issues promptly resulted in time and cost overrun and an additional burden on the exchequer.

### **3.1.2 Awarding of works**

The Headworks including connectivities (both left & right) were divided into seven packages. The work "Investigation, survey, preparation of designs, drawing and construction of Headworks with components of ECRF dam, Spillway, Spill Channel, Approach Channel and Pilot Channel, etc., (Main Dam Package)" was initially awarded (March 2013) to a contract agency<sup>83</sup> for ₹4,054 crore under EPC system with period of completion as 60 months *i.e.*, by March 2018. Subsequently, during execution of works, the mode of contract and contract agencies were changed due to various reasons.

As of March 2023, Headworks worth ₹7,422.69 crore were awarded, expenditure of ₹5,757.48 crore was incurred, and balance works worth ₹1,665.21 crore were in progress.

#### **3.1.2.1 Pre-closure of work on the recommendation of expert committee which had no scope in National Project**

As per Article 51 of Andhra Pradesh Financial Code Volume-I, contracts for supply of stores or for execution of works, should be given on tender basis. However, as per Para 154 of Andhra Pradesh Public Works "D" code, the works proposed to be entrusted on nomination basis (duly dispensing with tenders), have to be entrusted at estimate rates only. This procedure can be followed only in case of emergency or with reasons to be recorded as per the delegation of powers.

As the original contract agency for the work "Main Dam Package" had achieved (January 2018) only 30.90 *per cent* financial progress (₹1,755.05 crore), Government had issued<sup>84</sup> orders (February 2018) for entrustment of balance work to the second contract agency<sup>85</sup> on nomination basis under Lumpsum (LS) system to improve the progress of work.

The work was awarded (February 2018) to second contract agency for an amount of ₹2,019.67 crore<sup>86</sup> with a stipulation to complete the work within 18 months. After incurring an

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<sup>83</sup> M/s TRANSSSTROY-JSC-EC-UES (JV) at 14.06 *per cent* less over Internal Bench Mark (IBM)

<sup>84</sup> memo No. ICD01-19052/40/2018-PROJ-I-WRD dated 17.02.2018

<sup>85</sup> M/s Navayuga Engineering and Constructions Limited

<sup>86</sup> revised estimates as per SSR 2015-16 for execution of balance works of Main Dam package

expenditure of ₹1,579.49 crore, Chief Engineer, PIP, Dowlaiswaram had issued (July 2019) termination notice<sup>87</sup> to the second agency for pre-closure of work, on the recommendations (May 2019) of the Expert Committee<sup>88</sup> duly stating that entrustment of work on nomination basis was not appropriate.

The balance work of ₹440.18 crore to be executed by the second agency was awarded (November 2019) to a third agency<sup>89</sup>, under reverse tendering system for ₹1,548.13 crore (12.60 per cent less than Estimated Contract Value of ₹1,771.31 crore) with a condition to complete in 24 months (November 2021). Out of awarded amount, ₹1,194.41 crore was paid to the contract agency to the end of March 2023 and the work was in progress.

Audit noticed that:

(a) The Chief Executive Officer (CEO), PPA had addressed (August 2019) GoAP and stated that there is neither ground nor any necessity for pre-closure of the present tenders and retendering the works. It was further stated that such a step would result into unforeseen consequences and plunge the project into uncertainty. The project is not only likely to get delayed, but also would have adverse socio-economic impact, as well due to delay in realisation of the benefits from the project apart from likely increase in cost of the project. It was also advised to abandon the idea of pre-closure and retendering of the works in the best interest of the project or atleast keep in abeyance till a considered view is taken by GoI.

However, disregarding the advice of CEO, PPA, the GoAP has proceeded with the pre-closure of the agreement with the second contract agency (August 2019) and proceeded with retendering of the balance work.

(b) In contravention of Andhra Pradesh Financial Code, the work was awarded on nomination basis<sup>90</sup> to second contract agency without recorded reasons. Though the work was awarded on nomination basis, the works were awarded at revised estimated rates of SSR 2015-16 instead of at original estimate rates and also the contract system was changed from EPC to LS. This resulted in cancellation of the work contract and in turn delayed the completion of work.

(c) Projects / works, except taken up under Centrally Sponsored Scheme (CSS), Externally Aided Projects (EAP), Accelerated Irrigation Benefits Programme (AIBP)/ Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) and National Bank for Agriculture and Rural Development (NABARD), would come under scope of the Expert Committee. As Polavaram Project, is a National Project, this would not come under the scope of the Expert Committee constituted by the State Government. The recommendation of Expert Committee, which did not have scope in giving its recommendation for the National Project, resulted in extra expenditure of ₹1,107.95 crore (₹1,548.13 crore - ₹440.18 crore).

<sup>87</sup> clause 83.3 of the General Conditions of Contract

<sup>88</sup> constituted by GoAP vide G.O.RT.No.295 dated 14.05.2019

<sup>89</sup> M/s. Megha Engineering & Infrastructures Limited

<sup>90</sup> as per clarification under Clause 60 (C) of PS to APDSS the 'Executive Engineer (EE) can get the balance work executed as per the rate in the agreement of the original contractor'. If EE is, however, unable to find a contractor to execute the balance work at the original agreement rate, EE shall call for tenders at short notice and obtain realistic rates

Thus, the works scheduled to be completed by March 2018 remained incomplete as of March 2023 and expenditure of ₹4,528.95 crore (₹1,755.05 crore + ₹1,579.49 crore + ₹1,194.41 crore) incurred did not yield desired result.

Reply from the Government is awaited (November 2024).

### **3.1.2.2 Arbitrariness in selection of contract agency and undue benefit thereon**

As mentioned in the above paragraph, the Main Dam package work along with construction of Powerhouse was awarded (November 2019) to third contract agency<sup>91</sup> (being single tenderer) on reverse tendering methodology for an amount of ₹4,359.11 crore. The agreement period for completion of Headworks was 24 months and 58 months for Powerhouse. Scrutiny of records pertaining to the tendering and awarding of work to third contract agency revealed the following:

#### **(a) Denial of larger participation due to insufficient bidding time**

Government memo<sup>92</sup> (August 2019) facilitates a minimum of 21 days of response and closure time for the bids invited for balance works of main dam and hydro-electric project. However, the Department had fixed 16 days<sup>93</sup> time for response and closure of bids in tender notice published in August 2019.

Audit noticed that most of the bidders (14 bidders) who participated (September 2019) in the pre-bid meeting had requested for extension of time for preparation of bids. However, the due date for submission of bids was not extended resulting in denial of participation of more bidders in the tender process, as only one bidder participated in the final bidding.

The Government replied (June 2024) that initially the bid document availability date was fixed for a period of 29 days. However, due to technical problems in the e-procurement platform, the tender document could not be uploaded on the website as per the original schedule. Subsequently, an amendment has been issued (September 2019) duly changing the bid availability time to 16 days. It was further replied that the ratification orders are yet to be issued. During the Exit Conference, the Government stated (November 2024) that the orders issued in this regard stipulate 21 days, however, bidding time was reduced due to technical problems of uploading and preparation of tender schedule.

The reply is not acceptable, as documents in support of the technical snag in e-procurement were not made available to Audit. Further, it is more appropriate to extend the bid time when a technical snag has taken place. Denial of minimum bid period was against the principles of natural justice and loss of opportunity for larger participation and competitiveness in tender process.

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<sup>91</sup> M/s Megha Engineering and Infrastructure Limited

<sup>92</sup> memo No. ICD01-MJIR01C28(WTEN)/1/2019-MLO-II dated 17.08.2019 for Polavaram Hydro Electric Project on EPC

<sup>93</sup> from 05.09.2019 to 20.09.2019

**(b) Modification of tender conditions**

As per Government orders issued<sup>94</sup> (August 2019), the prequalification criteria while calling for tenders may be revised suitably as per standard guidelines stipulated in Government orders<sup>95</sup> issued in July 2003 to ensure larger participation. The Department had incorporated the following additional conditions in the tender document for balance works of Main dam and hydroelectric project as shown in **Table 3.3**.

**Table 3.3: Showing the additional conditions stipulated in tender document**

Conditions incorporated in tender document	Condition as per G.O.Ms. No. 94	Clause No. of Tender Document	Remarks
The bidder/JV members who have applied for Corporate Debt Restructuring or Board for Industrial and Financial Reconstruction or Strategic Debt Restructuring during the past five financial years (2013-14 to 2017-18) are not eligible to participate in this bid. Certificate in this regard from statutory auditor to be submitted along with bid.	Not prevailing in the G.O.	9 D (c)	Additional clause incorporated
The contract agency should have capacity for design office backup and field back up having experience on structural and hydraulic design for Spillway, ECRF, Diaphragm Wall, etc., or should have Memorandum of Understanding with such firm of experience.	Not prevailing in the G.O.	9 B (1)	Additional clause incorporated
Liquid assets or credit facilities or solvency certificate from Indian Nationalised or Scheduled Banks for ₹265.72 crore.	Not prevailing in the G.O.	9 C (4)(a)	Additional clause incorporated
Satisfactory completion of (not less than 90 per cent of contract value) similar works.	Satisfactory completion of (not less than 50 per cent of contract value) similar works	9 C (1)(a)	Increased the limit to curb the competition
Net profit made in at least three financial years during the last five years out of which one year should be immediately preceding year and certificate to that effect should be authenticated by statutory auditor.	Not prevailing in the G.O.	9 C (3)	Additional clause incorporated
Minimum annual financial turnover of ₹442.86 crore in all civil engineering and hydro mechanical works in any one year during last 10 years.		9 C (1)	
In respect of works executed outside India, the experience gained in Government Department shall be considered.		13 (24)	

Source: Information furnished by the WRD

<sup>94</sup> Column 2 (iv) of G.O.Ms. 67 dated 16.08.2019

<sup>95</sup> G.O.Ms.No. 94, I&CAD (PW Code) Department dated 01.07.2003

Audit noticed that:

- Modifications of pre-qualification criteria in the tender document for the subject work was not in consonance with Government orders issued in July 2003.
- Prior approval of Government was not obtained though all Engineer-in-Chief (ENCs)/CEs/Commissioner of Tenders (CoT) were instructed<sup>96</sup> (December 2018) to follow Government orders issued in July 2003 and obtain prior approval, if any deviations/special conditions needed incorporation.
- The CoT, while approving the bid also stated (October 2019) that the above clauses in bid document were not as per Government orders issued in July 2003.
- One of the bidders<sup>97</sup> addressed (September 2019) the Water Resources Department and requested to modify certain conditions in pre-qualification criteria as the existing conditions suited only one or two firms in the entire country and reduced the prospects of larger participation. However, no action was taken in this regard.

Audit noticed that the modification introduced, under the provisions of Government Order dated 01 July 2003, did not meet the intended objective of ensuring larger participation as the tender resulted in a single bidder, who could fulfill the modified conditions.

The Government replied (June 2024) that tender conditions were as per rules in vogue. It was also replied that other conditions are incorporated in the interest of successful execution and completion of work duly avoiding the hurdles experienced in the earlier contracts of the project.

During the Exit Conference, the Government stated (November 2024) that conditions were modified on the best interest of government. It was further stated that the tender conditions framed were of sound nature so that competent contractors participate instead of weak contractors and these are not the only reasons for participation of single bidders.

The reply is not acceptable, as additional stringent tender conditions in deviation to Government orders issued in July 2003 and reduction in the bidding time restricted participation of other bidders which resulted in finalisation of contract with single bidder. Though some of the additional conditions incorporated by the Department are in the spirit of timely completion of the work, the financial criteria included are unwarranted and the basis for arriving at the criteria was not made available to audit. Furthermore, prior approval of the Government was not obtained by the Department for incorporation of special conditions in the tender document.

**(c) Finalisation of reverse tender process with single bidder in contravention to government orders**

Para 2 (xv) of Government order (August 2019) stipulate that to conduct a reverse tendering, at least two bidders would be required. The guidelines were intended to be applicable for contracts where the Government is desirous of discovering a fair price through a competitive bidding process for the execution of ongoing projects.

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<sup>96</sup> as per Memo No. ICDO1-COOROMISC/20/2018-Reforms dated 14.12.2018

<sup>97</sup> M/s. SEW Infrastructure Limited

Audit noticed that:

- In contravention to the above Government orders, the Water Resources Department (Part A) and APGENCO (Part B) conducted (September 2019) the reverse tender process for the balance works (₹4,987.55 crore) of Main Dam and Polavaram Hydro-Electric Project (PHEP) and finalised the tender with single bidder, without going for fresh call, which may have denied the Government a competitive bid price.
- As per the provisions of clause 38 of agreement conditions<sup>98</sup>, additional items of work incidental to the main work are to be executed by the contractor at agreement rates. Instead of entrusting the additional items of work<sup>99</sup> incidental to the main work at agreement rates, the Department prepared estimates with current SSR 2020-21 and awarded the work to the same contract agency through tender process for an amount of ₹669.48 crore.

Had the work for additional items been awarded to the contractor at agreement rates, the contract value would have been ₹436.22 crore. This resulted in an undue advantage to the contractor and excess burden on exchequer to a tune of ₹233.26 crore (₹669.48 crore - ₹436.22 crore). Out of ₹669.48 crore, an amount of ₹551.37 crore was already paid (March 2023) to the contract agency.

The Government replied (June 2024) that though single bidder had participated in the reverse tendering, the work was awarded to the third agency<sup>100</sup> as the bid amount quoted by the bidder was 12.60 *per cent* less than the estimated contract value (ECV) and ₹628.43 crore<sup>101</sup> savings accrued to the exchequer. Regarding, PHEP, APGENCO replied (January 2023) that the single bidder was considered as per the approval of CoT, GoAP.

During the Exit Conference, the Government accepted (November 2024) the audit observation, however, submitted that due to selective modification of tender conditions only one bidder participated.

The reply is not acceptable. The modalities contained in the government order stipulates participation of at least two bidders for conducting reverse tendering process. Initiation of reverse tender process with a single bidder is in contravention to the government order and deprivation of competitive price. The claim of the government that 12.60 *per cent less* than ECV was incorrect as the additional works were entrusted, which were contingent to the main work, with rates of SSR 2020-21 instead of SSR 2015-16.

***Recommendation 3.2: The State Government should develop a fair and transparent tendering process that ensures compliance with prescribed rules and government orders to have / promote competitive bidding.***

<sup>98</sup> entrustment of additional items of work contingent upon main work would be authorised by the officers upto the monetary limits competent to accept items. For all items of work in excess of quantities shown in the bill of quantities/schedule-A of the agreement, the rate payable for such items shall be estimate rates for the items (-) or (+) over all tender percentage accepted by the contractor

<sup>99</sup> a) Construction of Reinforced Cement Concrete Diaphragm Wall end cutoff for Spill Channel; b) Vibro-stone columns and deep soil mixing in Gap-II; c) Construction of ECRF Dam Gap-I including Diaphragm Wall cut off vibro stone columns and deep soil mixing, concrete dam- Gap-III; and d) Slope Protection works on both sides of Spillway and Spill Channel

<sup>100</sup> M/s Megha Engineering & Infrastructure Limited (M/s MEIL)

<sup>101</sup> ECV of ₹4,987.55crore – bid value of M/s. MEIL ₹4,359.12 crore

### 3.1.3 Execution of works

The Headworks of PIP consists of various components<sup>102</sup> to be executed. The components of Headworks were divided into different packages and were initially entrusted to various contract agencies under EPC contract system. Subsequently, due to slow progress of works, part of the balance works were deleted from the scope of the original contract agencies and entrusted to other agencies on LS system. Despite change of contract agencies, the works were not completed as of March 2023.

As per the construction programme detailed in DPR (2005), the Headworks were to be completed by the end of December 2017. As of March 2023, the physical and financial progress of the Headworks was 82 and 78 *per cent* respectively and the total expenditure incurred was ₹5,757.48 crore.

Further, construction of ECRF Dam had not yet commenced as the work can be taken up only after finalisation of treatment procedure and rectification of damaged portion of the Diaphragm Wall along with the excavation of Approach and Spill Channel.

#### 3.1.3.1 Delayed entrustment of works

##### (a) Wasteful expenditure on dismantling of existing bed lining and steel supports

The work “Construction of Tunnel of 880 m long with discharge capacity of 20,000 cusecs in the right side connectivities (Package-64)” was awarded (March 2005) to a contract agency<sup>103</sup> for an amount of ₹73.90 crore. Subsequently, Government accorded<sup>104</sup> (September 2021) administrative sanction to enhance the discharge capacity to 40,000 cusecs citing linking of Godavari-Krishna Rivers. The work was entrusted (December 2021) to the existing contract agency<sup>105</sup> on nomination basis at a cost of ₹246.83 crore (including additional works) on EPC system. Further, in a correspondence to the Chief Engineer (PIP), Superintending Engineer (PIP Headwork circle) informed (January 2022) that the lining to the twin tunnels excavated for 20,000 cusecs discharge capacity was not taken up.



**Picture 3.5: Construction of Tunnel in Right Connectivities**

Audit noticed that discharge capacity was enhanced from the existing 20,000 to 40,000 cusecs without the approval of PPA. To carry out the enhancement work, the contract agency had to dismantle the already built ‘Plain Cement Concrete’ (PCC) bed lining (75 *per cent* of work completed), worth ₹13.65 crore<sup>106</sup> for which an amount of ₹1.46 crore was provided in the

<sup>102</sup> ECRF Dam in Gap-I and Gap-II, concrete Dam at Gap-III, Spillway with radial gates, Right and Left side connectivity works and Navigation Channel

<sup>103</sup> M/s UANMAX Infra Limited

<sup>104</sup> G.O.RT.No.336 dated 07.09.2021

<sup>105</sup> M/s MAX-INFRA Private Limited (earlier M/s UANMAX Infra Limited)

<sup>106</sup> ₹11.49 crore for Bed lining + ₹2.16 crore for steel supports

estimates. Further, it was incorrectly informed that the lining to the twin tunnels excavated for 20,000 cusecs discharge capacity was not taken up. This resulted in wasteful expenditure of ₹15.11 crore (₹13.65 crore + ₹1.46 crore).

The Government replied (June 2024) that the decision is taken with a view to harness the surplus water from the River Godavari and for future requirements of the State. It was further stated that to execute the tunnel widening work, it was necessary to remove already laid bed-lining work. Accordingly, a provision has been made in the estimate for widening of the tunnel.

During the Exit Conference, the Government stated (November 2024) that the conception was an afterthought. It could not be assessed at the time of planning, which was a later thought with a futuristic view.

The delay in the decision to take up the work of enhancement of discharge capacity duly dismantling the already executed work, after 16 years of commencement of the original work, is unjustifiable. This injudicious decision had resulted in wasteful expenditure of ₹15.11 crore. Further, the Government has not obtained prior approval for taking up the extension work from PPA / CWC (being the nodal agency for approval of designs).

**(b) Delayed entrustment of Spillway slope protection works**

The Dam Design Review Panel (DDRP) instructed (June 2017) WRD to propose measures required for safety against failure of the slopes due to excavation on the left and right banks of the Spillway and Spill Channel.

As the slope protection works were not covered in the original estimates (August 2019) of Main dam work, the contract agency<sup>107</sup> submitted (February 2020) proposals for slope protection works for hill-1 and hill-2 as an additional item. Accordingly, a detailed estimate for slope protection work of Spillway along with protection work of Spill Channel were prepared (June 2021) for ₹129.33 crore with SoR 2015-16.

At the request of the Chief Engineer (CE), PIP, the Government approved<sup>108</sup> (December 2020) the additional items contingent to main work but not covered in original agreement, as a separate work with SSR 2020-21. Technical sanction was accorded (June 2021) for ₹134.21 crore and agreement<sup>109</sup> was concluded (August 2021) with the contract agency. Subsequently, CE, PIP had approved (June 2022) deviation (shotcreting<sup>110</sup> in inaccessible areas) for additional items for an amount of ₹16.67 crore. Thus, the total cost of executing the slope protection work amounted to ₹150.88 crore (₹134.21 crore + ₹16.67 crore).

Audit noticed that though DDRP had instructed the Department to execute the subject work in June 2017 itself, the same was neither included in the LS agreement of second contract agency<sup>111</sup> (awarded in March 2018) nor in the original agreement of third contract agency<sup>112</sup> (awarded in August 2019). The Department had entrusted (in August 2021) the work as an additional item as per current SSR 2020-21 to the third contract agency.

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<sup>107</sup> M/s Megha Engineering & Infrastructure Limited

<sup>108</sup> Government Memo No. ICD01/-MJIR01C28/207/2020-PROJECTS-I dated 25.12.2020

<sup>109</sup> agreement No.02/2021-22 dated 27.08.2021, item IV

<sup>110</sup> method of applying concrete with high velocity onto a vertical surface

<sup>111</sup> M/s Navayuga Engineering Company Limited

<sup>112</sup> M/s Megha Engineering & Infrastructure Limited

Had the Department taken prompt action and entrusted the slope protection work to the contract agency along with the dam work at SSR 2015-16 rates, the additional expenditure of ₹4.88 crore (₹134.21<sup>113</sup> crore - ₹129.33 crore) could have been avoided.

The Government replied (June 2024) that the work was entrusted to the first contract agency, as per DDRP instructions, which submitted a stability analysis report for Spillway and Spill Channel (*i.e.*, from (-) 200 m upstream to (+) 356 m downstream). However, before the work could be taken up the contract was terminated. Based on the report submitted by the first contract agency, the second contract agency prepared designs/drawings and submitted them to CWC for approval. Meanwhile, the contract with the second agency was also terminated. The new agency, based on site conditions and citing difficulty in execution of work, had submitted revised drawings and the same were approved by CWC only in February 2021. As the approved drawings were prepared for both Spillway and entire Spill Channel (*i.e.*, from (-)200 m upstream to (+) 990 m downstream), the quantities to be executed have increased and the estimates were prepared with SSR 2020-21 for ₹134.21 crore. Further, CE, PIP has approved (June 2022) deviations for ₹16.67 crore. Thus, the total cost of the subject work amounts to ₹150.88 crore.

During the Exit Conference, the Government stated (November 2024) that due to delayed finalisation of designs, the protection works were not entrusted to the earlier contract agencies.

The reply is not acceptable, as the Department has not produced any proof of entrusting the work or entering into a supplementary agreement with the first contract agency. However, the reply is silent as to why the slope protection work which was entrusted to the original contract agency was not made part of the scope of work while entrusting the Main Dam work to the third contract agency.

Thus, entrustment of the slope protection work which is contingent to main work to the contract agency at ₹134.21 crore with SSR 2020-21 rates instead of ₹129.33 crore at SoR 2015-16 rates resulted in cost escalation by ₹4.88 crore.

### **3.1.3.2 Undue financial assistance to contract agencies**

The work “Construction of Main Dam and Powerhouse” was awarded and agreement was concluded (March 2013) with a contract agency at a cost of ₹4,054 crore with a condition to complete the work by March 2018. Scrutiny of records revealed the following:

#### **(a) Provisioning of special imprest to a contract agency**

As per clause 25 of Special Conditions of agreement, the contract agency<sup>114</sup> shall supply materials, plant, tools, appliances, implements for proper execution of work, at its own cost. The Government of Andhra Pradesh (GoAP) sanctioned (May 2017 to May 2018) a special imprest amount of ₹170 crore to Superintending Engineer, PIP Headworks Circle, Dowlaiswaram for arranging payments to the contract agency towards material purchase and other expenditure.

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<sup>113</sup> the estimate prepared by the Department using SoR 2015-16 did not include the additional item shotcreting in inaccessible area for ₹16.67 crore

<sup>114</sup> M/s TRANSSTROY -JSC-EC-UES (JV)

This was in addition to the mobilisation advance paid for the same purpose, subject to recovering the amounts so paid from the subsequent running account bills of the agency. The amounts recovered shall be recouped to the imprest fund for subsequent use. While sanctioning the special imprest, the Government directed to formulate 'Guidelines for Operation' of the fund.

Audit noticed that:

- Of the ₹170 crore special imprest created, an amount of ₹446.32 crore was advanced cumulatively to the contract agency and an amount of ₹302.10 crore was recovered cumulatively between August 2017 to November 2018. Further, the special imprest amount released to the agency were not fully recouped/recovered leaving a balance of ₹144.22 crore (as of November 2018) to be recovered.
- Out of ₹144.22 crore to be recovered, ₹123.07 crore was recovered (March 2019) through encashment of BGs leaving a balance of ₹21.15 crore to be recovered as of March 2023.
- Guidelines for Operation of Special Imprest Fund were not formulated by the Department.
- The Government order was silent regarding levy of interest on the amount advanced through imprest. Based on the interest rate (11 *per cent*) levied as per agreement clause 49.4<sup>115</sup>, the interest on the amounts released to agency from time to time worked out to ₹30.61 crore (till March 2023) as detailed in **Table 3.4**. Details of imprest advanced, recoveries made and interest calculation on the advanced amount is given at **Appendix 3.1**.

**Table 3.4: Showing the amount of interest to be levied**

Sl. No.	Details		Amount (₹ in crore)
1.	Imprest	Total imprest amount advanced to contract agency	446.32
2.		Amount recovered	302.10
3.		Amount recovered through encashment of BGs (29.03.2019)	123.07
4.		Amount to be recovered from contract agency	21.15
5.	Interest on Imprest	Rate of interest (in <i>per cent</i> )	11
6.		Interest on amount (upto November 2018)	16.05
7.		Interest on amount recovered <i>i.e.</i> on ₹123.07 crore (from December 2018 to March 2019)	5.25
8.		Interest on outstanding amount of ₹21.15 crore (April 2019 to March 2023)	9.31
9.		<b>Total interest due (as of March 2023)</b>	<b>30.61</b>

Source: Compiled by Audit based on records of the Water Resources Department

The Government replied (June 2024) that sanction of special imprest was aimed at facilitating project continuity and to avoid delays that arise from financial constraints faced by the contract agency.

During the Exit Conference, the Government stated (November 2024) that financial assistance was extended to the Contractor in the interest of work. The project was at critical stage and as the financial condition of the Contractor was not good, it was felt to financially support the Contractor. If work is stopped at that juncture, a fresh tender needs to be called for, which

<sup>115</sup> 01/2012-13 dated 02.03.2013 with M/s TRANSSTROY (Main Dam agreement)

would increase the cost of the project due to the application of new SSR. Considering all this, financial assistance was given by way of special imprest or advance to contractor.

The reply is not acceptable. As per the terms of the agreement, mobilisation of finances and material is the responsibility of the contract agency. It is pertinent to mention that, despite provisioning of funds through special imprest, the contract agency could not gear-up the work resulting in termination of the contract and subsequent award of work to another agency. Hence, the advancement of interest free imprest, which is of the same nature as that of mobilisation advance, that too without establishing any secured means of recovery, resulted in an undue advantage of ₹30.61 crore by way of interest to the contract agency.

**(b) Provisioning of Revolving Fund to a firm**

For the work “Construction of Main Dam Package” agreement was concluded (February 2018) with a second contract agency<sup>116</sup> for ₹1,244.36 crore with a condition to complete the work by August 2019. Special Conditions (Sl. No. 15 of Bill of Quantities) of agreement stipulate that the contract agency shall itself procure the steel, cement, bitumen, blasting material, sand, metals, soils, *etc.*, and such other material required for the work well in advance. The contract agency has to bear the cost of material along with conveyance.

Audit noticed that contrary to the above agreement condition, Government had sanctioned (March 2018) Special Revolving Fund<sup>117</sup> of ₹20.00 crore which was subsequently increased (November 2018) to ₹50.00 crore<sup>118</sup>, for procurement of diesel, subject to the condition that the amount shall be recovered in lumpsum from the immediate running account bill paid to the contract agency. However, the above order was silent regarding levy of interest on the advanced amount made through the Special Revolving Fund.

The contract agency utilised (July 2019) an amount of ₹26 crore out of the Fund and the same was recovered from the bills paid. Based on the interest rate (11 *per cent*) as applicable on mobilisation advance, the interest on the amounts released to contract agency worked out to be ₹2.84 crore (detailed calculation at *Appendix 3.2*) to the date of last payment (July 2019).

The Government replied (June 2024) that the Revolving Fund was established to support the contract agency in managing cash flow and uninterrupted progress of work. Further, it was replied that there were no government guidelines or directives that mandate the imposition of interest on such advances.

The reply is not acceptable. The conditions of the agreement stipulated that it was the responsibility of the contract agency to procure materials at its own cost. Hence, advancing interest free Revolving Fund which is of the same nature as mobilisation advance to the agency, resulted in undue advantage of ₹2.84 crore to the contract agency.

***Recommendation 3.3: The State Government should ensure that advances are paid to the contract agencies in line with the existing rules and regulations. Any financial support extended to contract agencies should include a reasonable interest component and backed by supporting BGs for the amount advanced.***

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<sup>116</sup> M/s Navayuga Engineering Company Limited

<sup>117</sup> Memo No. 985324/Proj.I/2018-3 dated 22.03.2018

<sup>118</sup> Memo No. ICD01-MJIROIC28/30/2018-PROJECTS-I-WRD dated 19.11.2018

**(c) Liabilities more than assets**

Contract conditions (Clause 42.2.3) of agreement stipulate that any recovery or recoveries advised by the Government/Department, due to non-fulfillment of conditions of contract, shall be recovered from any bill or deposits of the contract agency.

As the work (after incurring an expenditure of ₹1,755.05 crore) could not be completed by the contract agency despite issue of several notices, the Department terminated<sup>119</sup> (October 2019) the contract under Clause 55<sup>120</sup> of the agreement and Clause 61<sup>121</sup> of PS to APDSS.

The Chief Engineer, PIP addressed<sup>122</sup> (December 2020) the Government and submitted a detailed report on settling the accounts of the contract agency. As per the report, the assets (encashed Bank Guarantees, Retention money, bills pending for payment, *etc.*) and liabilities<sup>123</sup>, pertaining to the contract agency, lying with the Government were ₹842.03 crore and ₹848.01 crore respectively as detailed in *Appendix 3.3*. The net liability of the contract agency to the Government was ₹5.98 crore.

Apart from the above, the Department proposed a penalty of ₹269.29 crore, as per section 60 (C) of PS to APDSS (limited to five *per cent* on contract value of ₹5,385.91 crore), an amount of ₹26.02 crore is payable by the contract agency to Andhra Pradesh Eastern Power Distribution Corporation Limited towards ‘Power consumed’ and an amount of ₹30.61 crore recoverable as interest on Special Imprest (commented in Para No 3.1.3.2 (a)). Summing up the above, the Department would be at loss by ₹331.90 crore (₹5.98 crore + ₹269.29 crore + ₹26.02 crore + ₹30.61 crore), if not recovered from the contract agency.

It is pertinent to mention that Canara Bank have filed<sup>124</sup> (October 2018) an insolvency petition in National Company Law Tribunal (NCLT) Hyderabad bench seeking directions to initiate corporate insolvency resolution process against the partner<sup>125</sup> of contract agency. It was also proposed by the Department to file an appropriate suit with NCLT and recover the amount due. However, the Department has neither recovered the amount of ₹331.90 crore nor filed any suit with NCLT for recovery of amounts due from the contract agency.

The Government replied (June 2024) that the liabilities to the vendors are not actual liabilities but projected liabilities. Also, as there was no provision for recovery of interest of imprest in the Government Order (G.O.RT.No.253 dated 29.05.2017), after deducting these two items, the difference in assets and liabilities would be meagre. It was also replied that the relaxation of the penalty of five *per cent* of contract value as per clause 60 (C) of PS to APDSS is under consideration of the Government.

<sup>119</sup> Lr. No. CE/PIPHW Unit/Polavaram/DCE-II/OT-I/AEE-1/529M dated 30.10.2019

<sup>120</sup> termination to be governed by PS to APDSS

<sup>121</sup> under Clause 61 of PS to APDSS: If the contractor suspends / sub-let the work, the EE shall have power to give notice in writing to the contractor requiring that the works be proceeded with in accordance with the terms of the contract. If the contractor shall fail, for 14 days after such notice has been given, Government may enter upon and take possession of the works and site, and of all such plant and materials thereon, for the purpose of completing the work

<sup>122</sup> Lr. No. CE/PIP/DCE/OT.3/AEE.1/F20, Vol.14 dated 29.12.2020

<sup>123</sup> imprest, electricity charges payable by agency, liabilities to other agencies, *etc.*

<sup>124</sup> under Section 7 of Insolvency and Bankruptcy Code, 2016

<sup>125</sup> M/s TRANSSTROY

The reply is not acceptable, as the relaxation of penalty to be levied as per clause 60 (C) of PS to APDSS and advancing of interest free financial assistance would set an unwarranted precedence to all the contract agencies, which would have a cascading effect on the works in progress in the State.

### 3.1.3.3 Avoidable liability towards expenditure on treatment of collapsed tunnel

The work “Construction of right side connectivities (Package 64: Tunnel of 880m length)” was awarded (March 2005/December 2021) to a contract agency<sup>126</sup> at a cost of ₹116.86 crore with a condition to complete the work by December 2023. Scrutiny of the records revealed the following.

During construction stage of twin tunnels of right connectivities, the Geological Survey of India (GSI) submitted (2010) geo-technical investigation report and declared the quality of ‘rock class’ in different<sup>127</sup> chainages of Left and Right<sup>128</sup> Tunnel as ‘Poor’. Further, GSI report made certain recommendations as detailed below:

- To avoid failure by excessive deformation, it was recommended to determine appropriate design of tunnel support such that it is adequate to withstand pressure, all along the entire circumference of the surface of the tunnel.
- For the shear zones (poor rock mass), it was recommended to remove all the loose/crushed rock and soft gouge material, and back fill with concrete. Subsequently, steel mesh with shotcrete and inclined bolting may be provided.

Audit noticed that no such precautionary measures were taken to ensure the strength of tunnel at the above-mentioned chainages. As a result, the tunnel collapsed (June 2021) in the left tunnel between chainage 70 m to 90 m which was classified as weak zone by GSI. A provision of ₹63.18 lakh was made (September 2021) for treatment of collapsed tunnel in the estimates of the work “Widening of Twin Tunnels”.

Had the Department taken adequate steps to strengthen the weak stretches as pointed out by GSI before or during the execution of work, the collapse could have been avoided. Lack of action from the Department resulted in avoidable liability. As of March 2023, no expenditure was incurred towards the treatment of the collapsed tunnel.

The Government while confirming the tunnel collapse, replied (June 2024) that the amount of ₹63.18 lakh provided in the estimates is not meant for treatment of the collapsed portion, but for filling up the loose pockets in the heading portion of the tunnel.

The reply is not acceptable, as the estimates clearly states that the amount was provided ‘for treatment of collapsed portions’.

### 3.1.3.4 Avoidable expenditure towards rectification works

As per bid condition number 17, the total contract value shall include the work of any kind necessary for satisfactory construction, completion and maintenance of works. The contract value shall include compliance with all the general conditions of contract, all materials, plant, equipment, provision of proper and sufficient protective works, diversions, *etc.* Further,

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<sup>126</sup> M/s MAX-INFRA Private Limited, Hyderabad

<sup>127</sup> 18 m to 46 m, 70 m to 90 m, 424 m to 444 m, 470 m to 505 m

<sup>128</sup> 66m to 100m, 110m to 124m, 130m to 140m

condition 18 stipulates that ‘the works executed by the contractor shall be maintained at the contractor’s risk and shall arrange for own insurance against floods, fire and other usual risks during the contract period’. As such, during the contract period, it shall be the responsibility of the contractor to protect the executed work at no extra cost.

The balance Main Dam package work was awarded (November 2019) to a third contract agency<sup>129</sup>, on reverse tendering basis, at a cost of ₹1,548.12 crore with a stipulation to complete the work in 24 months (November 2021) after pre-closure of work (July 2019) of second contract agency<sup>130</sup>.

Due to time gap<sup>131</sup> between awarding of balance work (between August 2019 and November 2019) and mobilisation of work force/commencement of work by the new contract agency, the following avoidable rectification works were executed in the work site by third agency which were not part of the contract.

(i) During the monsoon season (July to September 2019), the Spillway and stilling basin were filled with water. To commence the work, the third contract agency had taken up the work ‘Dewatering in Stilling Basin and Spill Channel’<sup>132</sup> during December 2019/January 2020 and an amount of ₹8.30 crore was paid (July 2022) to the contract agency.

(ii) After dewatering, as the entire work area was filled with slushy/marshy soil due to stagnation of water for a long period, the third contract agency cleared the slush<sup>133</sup> and ₹8.98 crore was paid (July 2022) to the contract agency.

Audit noticed that the work awarded to the second contract agency was closed haphazardly without foresight for protection of works already executed that would be exposed to floods in the ensuing monsoon season. Had the second contract agency continued till completion of monsoon season, the additional expenditure of ₹17.28 crore incurred towards, dewatering and removal of slushy soil accumulated during monsoon could have been avoided as the same has to be borne by the contract agency as a part of the contract condition.

The Government replied (June 2024) that as dewatering and removal of slush was essential to execute the balance works, the new contract agency has undertaken the work and payments were made.

Thus, imprudent decision to close the work awarded to the second contractor agency before awarding the work to another agency resulted in further extra expenditure of ₹17.28 crore towards the de-watering and slush removal, disregarding the agreement clause that protection of executed works was the responsibility of the contract agency.

### **3.1.4 Quality Control**

The regular day-to-day quality control checks are carried out by the Quality Control (QC) Department of GoAP as per QC manual of Irrigation Department.

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<sup>129</sup> M/s Megha Engineering Infrastructure Limited

<sup>130</sup> M/s Navayuga Engineering Company Limited

<sup>131</sup> delay of four months, which was flood season of the river

<sup>132</sup> up to Ch 356.00 m and Spill Channel from Ch 356 m to Ch 2,920 m with 20 HP diesel pump

<sup>133</sup> ‘Excavation & Removal of slushy/marshy silt in the Spill Channel and stilling basin of Spillway deposited over & above the excavated levels of before floods 2019’

### 3.1.4.1 Issuance of quality control certificates

As per QC Manual, QC wing shall periodically inspect the work and conduct the required tests. The deficiency found, if any, pertaining to QC shall be brought to the notice of the concerned contract agency and construction division in the form of inspection note/report for its rectification. The construction divisions should submit compliance reports to the inspection notes after attending to the remarks offered by QC wing.

Audit noticed that compliance reports to 23 inspection notes<sup>134</sup> issued (March 2006 to April 2022) by QC wing were pending from construction divisions as detailed at **Appendix 3.4**. However, without compliance to the inspection notes, QC certificates were issued by QC division for allowing payment of bills to the contractors.

Similarly, scrutiny of records of Left Main Canal revealed that the Chief Engineer, Superintending Engineer and Executive Engineer of QC wing had conducted (March 2018 to February 2019) inspections on various occasions and issued inspection notes for compliance by the construction divisions. However, compliance reports to four inspection notes, issued by QC wing, were pending from construction divisions as detailed in **Table 3.5**.

**Table 3.5: Details of pending quality control remarks**

SI. No.	Reference to Inspection Notes & date	Construction Division	Name of work	Status
<b>Superintending Engineer, QC, Vigilance &amp; Enforcement Circle, Dowlaiswaram</b>				
1.	236M, 17.05.2018	PIPLMC, Division No.2, Dowlaiswaram	NH Crossing at Km 33.559	Pending
2.	65M, 06.02.2019	PIPLMC, Division No.1, Dowlaiswaram	Package-1 A	Pending
3.	108M, 16.03.2018	PIPLMC, Division No.1, Dowlaiswaram	Package-1	Pending
<b>Executive Engineer, QC Division, Dowlaiswaram</b>				
4.	41M, 18.01.2019	EE, PIPLMC, Division No.4, Tuni	Package-4 A	Pending

Source: Records of the Department

Pending receipt of Compliance Reports to the inspection notes, in contravention to the rules, the QC division issued QC certificates for payment of bills. The works were allowed to continue by the construction divisions without reporting of compliance to the inspection notes.

The Government stated (November 2024) that compliance reports to inspection notes pertaining to Headworks were submitted to QC wing.

The Government did not produce documentary evidence in support of submission of compliance reports, hence, correctness of submission of compliance reports could not be verified.

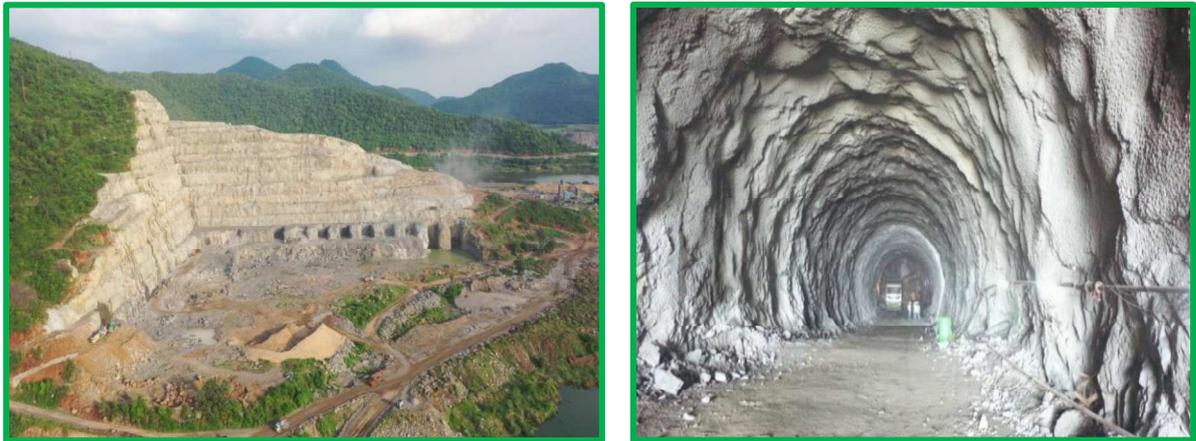
## 3.2 Construction of Powerhouse

Polavaram Hydro Electric Project (PHEP), as a part of Polavaram Multi-Purpose Project, was proposed by GoAP across river Godavari at Anguluru Village in Devipatnam Mandal of erstwhile East Godavari District, with an installed power generation capacity of 960 MW (12

<sup>134</sup> Chief Engineer:2, Superintending Engineer: 11 and Executive Engineer:10

turbines of 80 MW each). The Central Electricity Authority (CEA), Ministry of Power, Government of India has accorded (February 2012) Techno-Economic Concurrence to PHEP at an estimated cost of ₹3,013.68 crore (at 2010-11 Price Level).

Construction of Powerhouse involves civil, electrical and mechanical works for generation of power and connecting to power grid. Civil works involve preparation of estimate, obtaining administrative and technical sanctions, tendering, awarding and execution of works. The technical component of the Powerhouse is being executed by APGENCO.



**Picture 3.6 & 3.7: Construction of Polavaram Hydro Electric Project**

The salient features of the Powerhouse is depicted in *Chart-3.1*.

**Chart 3.1: Salient Feature of Powerhouse**

**(a) Components**

Capacity	• 12 x 80 MW= 960 MW
Type of Turbine	• Vertical Kaplan adjustable blade
Design head	• 27 m
Minimum Draw Down Level	• 41.15 m
Normal Total Water Level (12 units discharge)	• 18.20 m
Discharge per Unit	• 331 cumecs
Cost of Electro-mechanical Works	• ₹2,613.36 crore
Cost of Civil Works	• ₹1,511.28 crore
Total Project Cost	• ₹4,124.64 crore (2017-18 Price level)
Designed Energy of operation	• 2,308.41 Million Units (MU) in the first year and 431.27 MU in final (35th) year
Levelised Tariff	• 461 paise/Kwh (Kilo Watt hour)

The major components of Powerhouse were divided into civil structures and electro-mechanical (E&M) works as given in *Table 3.6*.

**Table 3.6: Showing the civil and electro-mechanical works**

Sl. No.	Component	Description
<b>I</b>	<b>Civil Structures</b>	
1.	Approach Channel to Intake structure	A channel upstream of intake structure to take the water to the intake and trash rack structures.
2.	Intake structure with Trash rack and intake gates	These structures lead the water to 12 head race tunnels.
3.	Head race Tunnels	Flow of water is regulated through intake gates.
4.	Powerhouse pit	Designed to accommodate 12 generating units.
5.	Tail race pool and channel	To convey the tail water back to the main course of the river. An approach road to Powerhouse pit and switch yard is proposed on the left bank of this channel with 10 m width at EL (+) 45.72 m.
<b>II</b>	<b>Electro-Mechanical Works</b>	Turbines, Generators, Transformers and Switch Yard Equipment.

Source: Records of the Department

**(b) Status of Polavaram Hydro Electric Project**

The Techno-Economic Concurrence (TEC) was received (February 2012) from CEA for an amount of ₹3,013.68 crore for power component and the target for commissioning the power project was March 2018. Accordingly, the civil works contract was awarded (March 2013) to a contract agency<sup>135</sup> and E&M works contract was awarded (December 2017) to another contract agency<sup>136</sup>. The agreement for civil works was terminated and was entrusted (February 2018) to the contract agency undertaking the E&M works. Subsequently, both the agreements for Civil and E&M works were cancelled (August 2019) and were entrusted (November 2019) to another contract agency<sup>137</sup>. The TEC was revised to ₹4,124.64 crore as per 2017-18 price level. The cost was further revised (November 2016) to ₹4,956.39 crore and then to ₹5,338.95 crore with revised target date for commissioning of the project as January 2026. The total expenditure incurred on the project so far (March 2023) was ₹884.89 crore. The physical and financial progress of civil works was registered at 12 and 17 *per cent* respectively.

**3.2.1 Execution of works by first contract agency**

Construction of PHEP (Electro-mechanical component) was awarded (December 2017) to a contract agency<sup>138</sup> in EPC mode for a contract price of ₹3,220.28 crore. The time for completion of the project was 58 months from zero date (January 2018) *i.e.*, up to November 2023. The contract agency was paid (January 2018 to August 2018) advances worth ₹753.47 crore (inclusive of Goods and Services Tax (GST)) against Bank Guarantees (validity between September 2020 to May 2023) submitted worth ₹643.55 crore<sup>139</sup>:

- Mobilisation advance (10 *per cent* of contract value): ₹380 crore (including GST) of ₹57.97 crore)
- Interest free Model test payment (10 *per cent* of the cost of turbine, *etc.*): ₹145.47 crore (including GST of ₹22.19 crore) and

<sup>135</sup> M/s TRANSSTROY

<sup>136</sup> M/s Navayuga Engineering Company Limited

<sup>137</sup> M/s Megha Engineering & Infrastructure Limited

<sup>138</sup> M/s Navayuga Engineering Company Limited

<sup>139</sup> Mobilisation Advance: ₹322.02 crore + Milestone Advance: ₹193.22 crore + Model Test: ₹128.30 crore

- Interest bearing Milestone advance payments (six *per cent* of the contract value): ₹228 crore (including GST of ₹34.78 crore).

However, in August 2019, the contract was terminated and the work was awarded (November 2019) to a new contract agency<sup>140</sup>. Despite release of advance payments, the original contract agency had executed works<sup>141</sup> worth ₹1.70 crore only.

Scrutiny of records revealed the following:

### **3.2.1.1 Incorrect inclusion of clause for payment of interest free advance in the agreement**

As per Payment terms II (payment for E&M works), clause 6 (iii) of the agreement entered into with the contract agency, “After successful completion of Model test and approval of Model test reports, 10 *per cent* of the cost of ‘Turbine, Generator and their auxiliaries’ as per the approved billing break-up would be paid against a Bank Guarantee (BG) for equal amount valid for 40 months from the date of advance payment against Model test”.

An amount of ₹145.47 crore towards interest free advance was paid to the contract agency upon submission of successful completion of Model Test Report.

Audit noticed that the interest free advance payment was in contravention to the payment terms as mentioned in the agreement. Any change in the agreement terms requires approval of the APGENCO Board or GoAP. However, no such approval was obtained, which led to a loss of interest of ₹19.14 crore<sup>142</sup>.

The APGENCO replied (July 2024) that the advance clause was incorporated as per the request of the contract agency to ensure cash flow to the agency. The Government stated (November 2024) that an amount of ₹145.47 crore was paid as interest free advance against successful completion of model test, as per the agreement clause 6 (Payment terms II) incorporated at the request of the bidders participated in the pre-bid meeting.

The reply is not acceptable. The inclusion of clause for payment of interest free advance on successful completion of Model Test, in the agreement is against the laid down rules of the Government and was not approved either by the Board or GoAP, resulting in undue advantage of ₹145.47 crore to the contract agency.

### **3.2.1.2 Acceptance of bank guarantees with short validity period**

As per clause 6 (V) of EPC contract agreement (December 2017) between APGENCO and contract agency<sup>143</sup>, if requisitioned by the firm, two additional milestone advance payments (interest<sup>144</sup> bearing) would be made against suitable BG for equal amounts. This additional milestone advance would be paid for Design & Engineering (not exceeding six *per cent* of the contract price) and placement of order for major equipment (not exceeding 10 *per cent* of contract price).

The advance and interest are to be recovered from the running account bills on a pro-rata basis. The BGs shall be valid till the completion of the contract or till the recovery of the complete

<sup>140</sup> M/s Megha Engineering & Infrastructure Limited

<sup>141</sup> towards erection of temporary office at project site

<sup>142</sup> 12 *per cent* interest of ₹100 crore from 30.06.2018 to 14.08.2019 and 12 *per cent* interest on ₹45.47 crore from 01.08.2018 to 14.08.2019

<sup>143</sup> M/s Navayuga Engineering Company Limited

<sup>144</sup> rate of interest one *per cent* over & above the borrowing rate of APGENCO, which is 11 *per cent* at present

advance amount with interest, whichever is earlier. As such, BG should be valid upto May 2024 (including claim period of six months beyond scheduled date of completion of contract).

Audit noticed that instead of submitting BGs having validity up to May 2024, the contract agency had submitted BGs worth ₹193.22 crore and ₹128.30 crore with validity up to March 2021 and April 2022 respectively. Meanwhile, the contract was terminated by the Government (August 2019) and the contract agency approached (November 2019) Hon'ble High Court of Andhra Pradesh against the termination. The petition of the contract agency was disposed (January 2021) by the Hon'ble High Court based on the joint Memorandum of Understanding submitted by both the parties involved. However, due to inaction of APGENCO, BGs worth ₹321.52 crore expired without revalidation.

Scrutiny of records revealed that APGENCO requested (December 2020/January 2021) the Banks and the firm to extend the validity of BGs, however, the banks did not honour the request. Thus, APGENCO could neither encash the BGs nor recover the amount from the contract agency, thereby incurring a loss of ₹321.52 crore.

The Government replied (July 2024) that as per the sanction terms, BGs can be issued only for 36 months and after that the BGs would be extended for another 36 months. Further, regarding the non-encashment of BGs, it was stated that after taking the decision of termination of contract and one day before termination of the actual contract, the BGs were submitted for encashment (August 2019). However, the Banks did not honour the request due to the injunction order issued by the VIII Additional District Judge, Vijayawada. As APGENCO has tendered the claim within the validity period, the responsibility of honouring the claim lie with the Bank. It was further replied that the Hon'ble High Court of Andhra Pradesh ordered that all disputes are to be adjudicated. As such, the claim pertaining to refunds of Mobilisation Advance alongwith interest were presented before the arbitration tribunal and final award is awaited.

The reply stating that BGs are issued for a maximum validity of 36 months is not acceptable, as Reserve Bank of India guidelines (clause 1.1.3 of 02 July 2007) state that BGs can be issued for a maximum period of 10 years and can be claimed within 12 months over and above the validity period. Thus, ignorance on part of the APGENCO officials with respect to guidelines issued by the RBI led to locking of funds to the tune of ₹321.52 crore besides loss of interest and further legal disputes in claiming the amount.

During the Exit Conference, the Government accepted (November 2024) the audit observation and replied that the contract agency agreed to validate BGs upto completion of the work and the Defect Liability Period. However, as the contract was terminated prior to completion of work, the BGs were produced to the Bank for encashment within the validity period. As such, it is the obligation of the Bank to honour the request of the Department. After finalisation of the arbitration pending in this regard, the issue would be solved within one or two months.

### **3.2.1.3 Delay in claim for goods and service tax paid**

Section 54 (1) of CGST Act, 2017 stipulate that, "Any person claiming refund of any tax and interest, if any, paid on such tax or any other amount paid, may make an application before the expiry of two years from the relevant date (the date of payment of tax) in such form and manner as may be prescribed."

Further, as per the sub-section 8(c) of Section 54 of CGST Act, 2017, the refundable amount shall, instead of being credited to the Fund, be paid to the applicant, if such amount is relatable to refund of tax paid on a supply which is not provided, either wholly or partially, and for which invoice has not been issued, or where a refund voucher has been issued.

Audit noticed that APGENCO had paid advances worth ₹753.47 crore including GST of ₹114.94 crore<sup>145</sup> to the contract agency<sup>146</sup>. The contract was finally terminated in August 2019. As the services were not obtained from the contract agency, refund for GST can be claimed by the agency as per provisions of CGST Act, 2017 before the expiry of two years from the payment of GST. The APGENCO requested (December 2019) the contract agency that a credit note for sum of advance and GST amounts be issued immediately to APGENCO. However, the contract agency had not issued credit note to APGENCO till March 2023 for ₹114.94 crore. Further, the Department reported that contract agency had submitted APGENCO, the proof of payment of GST to tax authorities. However, the same was not produced to audit.

The Government replied (July 2024) that as per Explanation 2(d) to Section 54 of GST Act, the tax becomes refundable within two years from the date of judgement/decreed/order/direction of the Appellate Authority. As the issue is before the Arbitration Tribunal, the contract agency is legally liable to repay the advance amount alongwith GST.

During the Exit Conference, the Government stated (November 2024) that the APGENCO has approached the CGST authorities for refund of GST paid. However, due to arbitration the refund was not honoured. After completion of the arbitration, the refund claim would be submitted within the mandatory two year period.

### **3.2.2 Execution of works by second contract agency**

The second contract agency<sup>147</sup> has quoted an amount of ₹4,359.12 crore (12.60 *per cent* less than Estimated Contract Value of ₹4,987.55 crore) for the combined tender of Civil and E&M works of balance works. The value of E&M works was ₹2,810.88 crore.

#### **3.2.2.1 Sanction of interest free advance**

Clause 4.1 of the General Conditions of the Contract stipulate that the contractor shall supply the goods and/or perform or cause to be performed all work and services required in connection with the work. The above clause of the agreement was amended (November 2021) by APGENCO under Amendment No.2, which facilitates payment of advance to the contractor on the material bought to site.

Audit noticed that the contract agency was paid (December 2021 to October 2022) an amount of ₹30.86 crore as advance for procurement of steel (Structural and Reinforced). The contract agency had not drawn any mobilisation advance which attracts 12 *per cent* interest. However, APGENCO had facilitated interest free advance in the form of material advance resulting in undue advantage to the contract agency. Due to the above payment of advance to the contract agency by amending agreement clauses after tender, APGENCO had favoured the contract

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<sup>145</sup> January 2018: ₹57.97 crore, March 2018: ₹34.78 crore, June/August 2018: ₹22.19 crore

<sup>146</sup> M/s. Navayuga Engineering Company Limited

<sup>147</sup> M/s Megha Engineering & Infrastructure Limited

agency and also sustained a loss of ₹1.10 crore (December 2021 to November 2022) in the form of interest as shown in **Appendix 3.5**.

The Government replied (August 2024) that as per the terms of contract, the contract agency has to submit Price breakup schedule for payment of bills. The Price breakup schedule submitted by the contract agency for reinforcement steel was split into two parts, *i.e.* supply of steel and cutting/ bending/ placing, *etc.*, instead of 'Finished item of work including cost of material', which was approved by the Board. As such, the payment was made to the contract agency on receipt of the material at site.

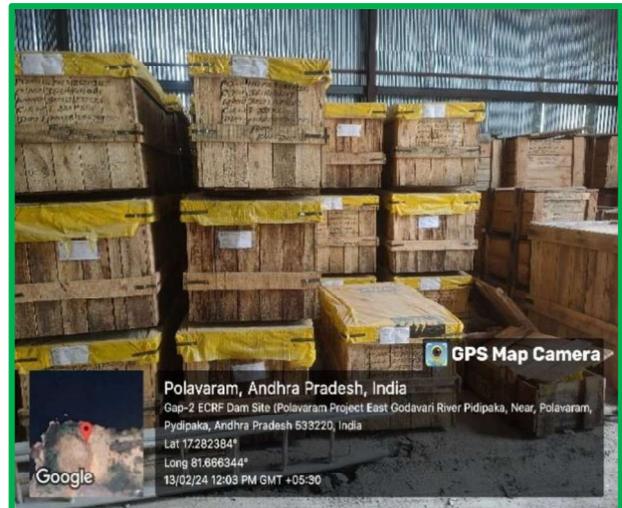
During the Exit Conference, the Government stated (November 2024) that the payments were made upon receipt of material at site, which was as per the agreement clauses only, and hence it is not an interest free advance. Regarding changes made in the agreement clauses after entering the agreement (being against the laid down rules), Government replied that the clauses were inserted upon request of the contract agency, for mobilisation of funds.

The reply is not acceptable, as the payment is to be made for finished items of work and not for the material brought to site, which tantamount to mobilisation advance. The approval of price breakup schedule (November 2021) by APGENCO as submitted by the contract agency duly splitting the items of work, is not in order. This resulted in undue advantage to the contract agency by way of interest free advance.

### 3.2.3 Advance procurement of Electro-Mechanical components

As per agreement condition No. 11.1.1 (C), entered (March 2021) into with the contract agency<sup>148</sup> for a contract price of ₹2,810.88 crore, the schedule of supply of E&M material/equipment shall be planned in such a way that the material shall be delivered to site not before six months of its requirement for erection as per approved schedule. In case, if any material/equipment is supplied too early, (*i.e.*, before six months of its requirement as per schedule) the process of bills of such material/equipment shall be initiated by purchaser only before six months of its requirement as per schedule.

For execution of Polavaram Hydel Electric Project, APGENCO obtained a term loan of ₹3,965.11 crore with an interest rate of 11 *per cent* per annum from Rural Electrification Corporation Limited towards funding the debt portion of PHEP costing ₹4,956.39 crore.



**Picture 3.8: Electro-Mechanical component lying idle**

<sup>148</sup> M/s. Megha Engineering & Infrastructure Limited

As per approved PHEP Level 2 schedule (showing the items to be procured and phase-wise erection), E&M material/equipment were procured by making payments to supplier and issued to the site for erection.

Audit noticed that E&M material/items/components worth ₹41.26 crore were procured (June 2022 to June 2023) six months prior to requirement and were lying idle without installation for the period ranging between 28 and 428 days in excess of six months.



**Picture 3.9: Electro-Mechanical components lying idle at site**

Thus, improper planning to procure the items without assessing the time required to complete the other components not only resulted in blockage of funds to APGENCO and idling of E&M components, but also led to additional financial burden of ₹1.90 crore (*as detailed in Appendix 3.6*) towards interest (as of February 2024) for the material brought to the site.

The Government replied (August 2024) that as per clause 8.1 and 8.2 of the contract agreement, the existing approved schedule for commissioning units 1, 2, 3 is 31 July 2024 and thereafter two months for each unit and hence for unit 12, it is 31 January 2026. It was further replied that as per clause 8.4.1 of the contract, Liquidated Damages (LDs) are applicable for delayed commissioning of the units at the rate of 0.5 *per cent* for delay of every week subjected to a maximum of 10 *per cent* of the contract value including taxes.



**Picture 3.10: Electro-Mechanical material lying idle at site**

During the Exit Conference, the Government accepted (November 2024) the observation and replied that the designs of the Hydroelectric project were changed. As such, Bharat Heavy Electricals Limited has supplied some of the equipment/ material in advance and the turbines are yet to be supplied.

The reply is not acceptable, as the schedule to procure the material has to be planned in such a manner that there should not be any idling of equipment. Further, the payments were made to the contract agency without their actual utilisation. This resulted in loss of ₹1.90 crore towards interest on the amount paid to the agency.

***Recommendation 3.4: The Electromechanical material be procured in consonance with the execution of work and as per the actual requirement, as the PHEP construction is funded through an interest-bearing loan component.***