

Executive Summary

Background of the Project

The uplands of Prakasam, SPSR Nellore and YSR Kadapa districts of Andhra Pradesh form part of a semi-arid zone in the peninsular India with scanty and erratic rainfall. These areas have been identified as drought affected and the frequency of its occurrence during the last 50 years was on the raise.

To mitigate the drought conditions, the Government of Andhra Pradesh (GoAP) conceived the 'Poola Subbaiah Veligonda Project (PSVGP)', to ensure drinking water and one low duty crop (Khariff crop) in the area. In the above context, GoAP ordered (February 1991) to assess the feasibility and to conduct investigation for the project. Investigations were carried out and the first Detailed Project Report (DPR) was prepared in the year 1994. The present project was taken up in 2005 based on the DPR submitted in March 2005.

The PSVGP envisages drawal of flood water of river Krishna from the foreshore (Kollam vagu) of Neelam Sanjeeva Reddy Sagar (Srisailem Reservoir) during monsoon period. The water so drawn would be conveyed through an approach channel, two tunnels, feeder canal and would be impounded in the Nallamalasagar reservoir. The irrigation of the command area and provisioning of drinking water would be covered through three canals connected to the reservoir. The water so drawn would provide irrigation facilities to about 4.38 lakh acres for Irrigating dry crops and drinking water to 15 lakh population in the three districts. The project was proposed to be completed within five years of commencement of construction. However, the project remained incomplete as of date.

In the above background, the detailed Compliance Audit of 'PSVGP' was conducted covering the period since inception of the project with special focus on execution of works during last four years (2017-18 to 2020-21). The audit objective was to assess whether tunnel system, head regulator including approach channel were planned and executed effectively for required water drawal capacity, planning and execution of reservoirs was done with required storage capacity and structural adequacy and canals were designed and executed with adequate structures to create required ayacut. The audit involved scrutiny of records relating to planning and execution of works at the Executive Engineer offices, Superintending Engineer (SE), Chief Engineer (CE) and Principal Secretary, Water Resources Department. The focus was on the aspects relating to planning and execution of the project and their financial impact on the overall project.

Audit findings are organised into chapters namely planning and execution aspects of tunnels, planning and execution of reservoir and planning and execution aspects of canal and distributary networks. The major deficiencies noticed are detailed below:

A) Planning and execution aspects of tunnels

A preliminary analysis or study is vital in assessing the chances of success of a project, which is proposed to be solely dependent on flood water. There was no evidence, in the records made available to audit, regarding conduct of any such study or analysis. In the absence of which, Audit could not ensure whether the targeted flood water can be drawn without affecting other projects dependent upon flood water of Srisailam Reservoir.

Difference in bed level between the Tunnel II exit point and the link canal would cause stagnation of water for a length of 4.11 Km in Tunnel II. The feeder canal was designed with lesser discharge capacity of that of the two tunnels put together. This would make the tunnels to be operated with lesser discharge and thereby restricting the drawal of water and non-achievement of intended ayacut. Despite increase in budget authorization during 2017-21, the expenditure incurred was on decreasing trend. Out of total budget authorization of ₹2,190 crore, only ₹1,270 crore was incurred.

Due to untimely decision to execute balance portion of Tunnel I by manual drill and blast method instead of using Tunnel Boring Machine (TBM), there was wasteful expenditure towards manufacture of segments and procurement of cutters used in operation/functioning of TBM. There was avoidable expenditure towards cost of rehandling of earth material deposited within the boundaries of canals proposed to be widened.

B) Planning and execution of reservoir

Construction of only three Non Over Flow (NOF) dams was identified at the time of preparation of Detailed Project Report, ignoring the fourth gap which prevents maximum level of storage capacity of Nallamallasagar reservoir. This was identified belatedly in August 2019. In respect of link canal, excess payment was made due to erroneous deduction of Stage I earthwork quantity while arriving the quantities for Stage II.

C) Planning and execution aspects of canal and distributary networks

The bids were compared with higher Internal Benchmark (IBM) cost and contracts were awarded for a higher amount than was necessary due to instances of boosting of IBMs. Excess payment towards price variation for steel and fuel was made due to incorrect adoption of rate and formula respectively. Improper planning to procure hydro and electromechanical equipment without assessing the time required to complete the canals, pressure mains, distributaries not only resulted in blockade of funds but also idling of equipment.

The Government ordered that in Engineering Procurement Construction contract system, the contractor shall be bound to execute additional items, contingent to main work and within the scope of work, at no extra cost as the contract price quoted was inclusive of such additional items. However, in four cases though there was no change in the scope of work, the department made payments for the additional quantities executed by the contractors for increase in number of structures/quantities on structures on the canals which resulted in excess payment. Contrary to the above, savings due to

reduction in quantities/length of canals and bunds, while execution of work, were not accrued to the Government.

Schedule of Payments were incorrectly approved, with higher values to certain items of work, without reference to the corresponding agreement rates. This resulted in front payments to contractors and additional financial burden in case of pre-closure/non-continuance of works by contractors.

Though the Gottipadia canal was executed as unlined canal, the payment was made for canal lining as included in the agreement which led to excess payment to the contractor. The Eastern Main Canal (first reach) was proposed with canal lining which includes the lining of structures in the length of the canal. However, in the IBMs separate lining quantities were included in the structures. This resulted in excess sanction and payment to contractor.

Conclusion

- A preliminary analysis for assessing the availability of water, for a project solely dependent on flood water, is vital for the chances of success of the Project. However, no such records were available in conformity of any such analysis.
- Utilization of budget is on a declining trend, which shows that the progress of the project is dampening.
- Execution of feeder canal with lesser discharge capacity than tunnels would result in short creation of contemplated ayacut.
- Delay in approval of designs and frequent change in contracting agencies is hindering the progress of the project.
- Additional quantities over and above IBM quantities were sanctioned in respect of structures, tunnels, etc., though, there was no change in scope of work. On the other hand, whenever and wherever there was reduction in the execution of length of canals, earthen bunds of reservoir and also decrease in quantities executed, when compared to IBM, the contract price was not reduced proportionately.
- The Schedule of Payments were incorrectly approved with higher values to certain items of work without reference to agreement rates. This resulted in front payments to contractors and additional financial burden in case of pre-closure/non-continuance of works by contractors.

Finally, certain crucial components such as tunnels, distributary network and structures on canals are still in progress. Even after completion of 17 years, since commencement of the works, the project remained incomplete thereby depriving the intended benefits of the project to the people of this semi-arid and drought prone area.

Recommendations

- ❖ **Government should crystallize the planning parameters and redesign the components of the project wherever necessary and execute the project accordingly.**
- ❖ **Government should identify the phase wise priorities and expedite the execution of the project to derive early benefits.**

- ❖ **Government should streamline the procedures relating to EPC contracts including the deliverables, scope and specification of work to avoid undue advantage to contractors.**
- ❖ **Schedule of payments of all packages should be reviewed to ensure that payments are not frontloaded.**