CHAPTER-III
COMPLIANCE AUDIT

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CHAPTER-III

DEPARTMENT OF ELECTRONICS AND INFORMATION TECHNOLOGY

3.1 Audit on e-Procurement system in Chhattisgarh

3.1.1 Introduction

Department of Electronics and Information Technology (DEIT), Government of Chhattisgarh rolled out[1] (August 2007) an integrated e-Procurement system to ensure transparency and efficiency in all Government procurements through a consortium comprising NexTenders and M/s Wipro Limited. The tenure of the consortium was for a period of five years up to December 2011 extended till September 2016. The functioning of the e-Procurement system was included in Audit Report (Civil and Commercial) of the CAG of India for the period ended March 2010. The initial software provided (August 2007) by NexTenders was replaced (April 2016) by a new enterprise resource planning (ERP) based commercial-off-the-shelf (COTS) software provided by Mjunction, another System Integrator (SI). The legacy system of NexTenders was wound up in September 2016, and the data was not migrated to the new system except for vendor registration. Hence, audit was confined to examination of the functionality of the new e-Procurement system developed by Mjunction for the period April 2016 to March 2017 by test check of records of CHiPS and three[2] out of 35 Departments/entities selected by sampling[3] method.

Chhattisgarh InfoTech & Biotech Promotion Society (CHiPS[4]) is the nodal agency under DEIT for setting up and overseeing the functioning of the system. Mjunction is responsible for customisation of the application software under the monitoring of CHiPS to meet the needs of the user entities/Departments.

The e-Procurement system was to facilitate vendor registration, tendering, award of work etc., for all tenders above ₹ 20 lakh (the threshold was lowered to ₹ 10 lakh in May 2016).

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1 Under public-private partnership (implemented in build-own-operate) mode involving developing the system and providing e-Procurement services

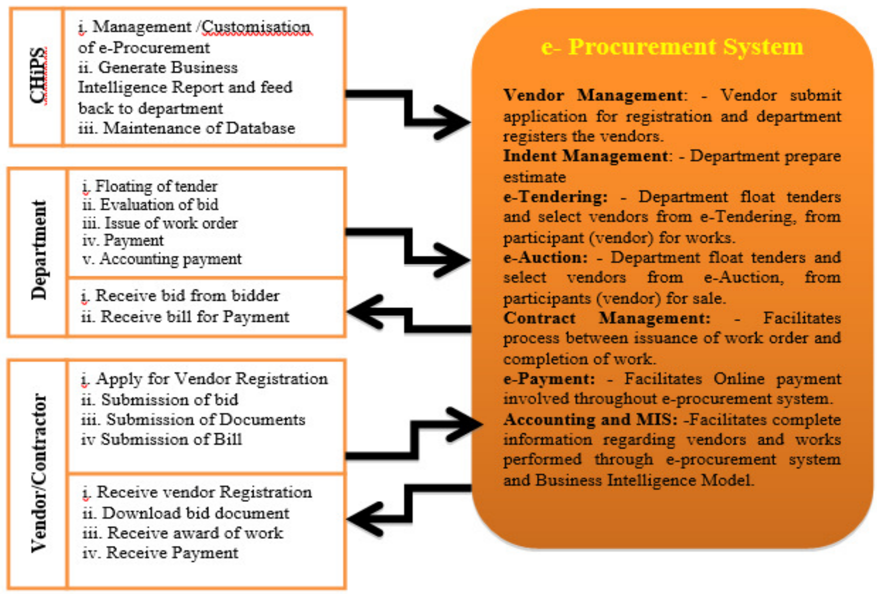
2 Public Works Department (PWD), Water Resources Department (WRD) and Panchayat and Rural Development Department (PARD).

3 Of the 35 Department/entities, 27 had floated less than 200 tenders during 2016-17 and were not considered. In the rest eight Departments/entities, two Departments (WRD-489 tenders and PARD-2,102 tenders) were selected using the Probability Proportionate Size without Replacement (PPSWOR) sampling method and PWD was selected on ground of being the nodal Department and also for floating second highest number (1,794) of tenders. Further, these three Departments together floated 39 *per cent* (3,268 numbers) of the total tenders valued ₹ 9,723 crore (55 *per cent* of total tender value of ₹ 17,765 crore) through the system. For test check of the e-Procurement system in the field offices, nine units (four out of 80 of PWD, three out of 90 of WRD and two out of 106 of PARD) were selected.

4 CHiPS was formed in September 2002 as an autonomous nodal agency for management of IT projects in the state under DEIT

To participate in the bidding process through the e-Procurement portal, the user Departments/entities and the vendors/contractors are required to register themselves, after which, users would be able to login to the system through user id and passwords generated by the system. The e-Procurement system also provides different payment gateways and other tender related services to the bidders. The functional architecture of the e-Procurement system is indicated in the process flow diagram:

Process Flow Diagram of e-Procurement system



During 2016-17, 8,444 tenders valued at ₹ 17,765 crore were floated through the system of Mjunction by 35 entities/Departments[5] out of 45 Departments of the State Government. All these tenders and other details available in the database of Mjunction were analysed by Audit using the business intelligence tool of the system and through IDEA software.

An entry conference was held (May 2017) with the Principal Secretary (PS), DEIT to discuss the objectives, scope and methodology of the Audit. An exit conference was also held (January 2018) with the PS, DEIT to discuss the audit findings. In the exit conference, Secretaries of PWD and WRD were also present. The views/replies of the PS, DEIT and Secretaries of PWD and WRD have been suitably incorporated in the Report.

Audit findings

3.1.2 Functionality of the (new) e-Procurement system

3.1.2.1 Establishing the (new) e-Procurement system

CHiPS entered into an agreement (June 2015) worth ₹ 28.50 crore with Mjunction for setting up the new e-Procurement system and to provide e-Procurement services for a period of five years. The system was designed to include eight modules viz., vendor management, e-tendering, indent management, e-payment, MIS, contract management, e-auction and

[5] 20 Departments and 15 entities viz., corporations, societies, boards etc.

accounting as a complete ERP solution as detailed in ***Appendix 3.1.1***. The new system was to go-live by January 2016.

As per terms of agreement, Mjunction was required to complete one transaction cycle of one tender involving all the eight modules in five pilot[6] Departments. Upon successful completion of these exercises and obtaining user acceptance test (UAT) report from these Departments, the system was to be declared go-live by January 2016. Thereafter, the system was to be rolled out in the remaining 30 entities/Departments and UAT was also to be obtained from these entities/Departments by February 2016. The go-live was to be followed by O&M support for a period of five years. In the event of breach of these milestones, CHiPS was entitled to levy a penalty of ₹ 50,000 per week of delay on Mjunction.

Despite four out of eight modules were non-functional, the system was declared go-live and rolled out in all the 35 entities

Audit observed deficiencies as under:

✓ The payment terms were front loaded as 74 *per cent*[7] of the contract value was to be paid to Mjunction upfront on receipt of application software with licenses, supply of hardware and yearly cost of ATS (Annual Technical Support) in advance and only seven *per cent* (₹ two crore) was earmarked for customisation of the software for the user Departments/entities. Resultantly, ₹ 19.78 crore (69 *per cent* of contract value of) was paid[8] (between February 2016 and September 2016) but customisation work had not been carried out for four modules in 22 Departments/entities and in none of the eight modules in 11 of the 35 Departments/entities where the system was rolled out. The balance amount of contract value worth ₹ 8.72 crore to be released in a phased manner on account of yearly ATS cost and customisation cost etc., had not been paid till date (January 2018).

✓ The system was declared go-live on 1 April 2016 with only four operational modules (vendor management, e-tendering, e-payment and MIS) and receiving UAT only from three[9] out of the five pilot entities/Departments for failure of the Mjunction/CHiPS to provide necessary customisation to the needs of the remaining two pilot Departments.

✓ Even the e-payment and MIS modules, though operational, could not be used as the contract management module which is linked to the payment module was not functional for failure of Mjunction/CHiPS to make necessary customisation to the needs of the user entities. As a result, payments to the contractors/suppliers were routed through another system (e-works[10] portal) which limited the effectiveness of the e-Procurement system. The MIS, in the

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6 PWD, WRD, PHED, Health & Family Welfare, and Commerce & Industries identified by CHiPS from the 35 entities served by the legacy system of NexTenders on the basis of maximum numbers of tenders floated through the legacy system

7 On receipt of licenses of application modules- ₹ 18.30 crore; supply of hardware- ₹ one crore; ATS Cost in advance for one year- ₹ 1.80 crore; total-₹ 21.10 crore

8 For application software with licenses, supply of hardware and yearly cost of ATS (Annual Technical Support) in advance

9 PHED, Health & Family Welfare (Chhattisgarh State Medical Society Corporation), and Commerce & Industries (Chhattisgarh State Industrial Development Corporation)

10 e-Works is a separate portal which was prepared by NIC for works Department particularly for PWD, PHE and WRD and through this portal, these Departments makes payment to the contractors

absence of other modules remaining non-functional, could not be used to generate the reports for monitoring.

✓ CHiPS allowed Mjunction to roll out the incomplete system in 30 additional entities, of which UAT was received only from 19 entities for the four modules while no UAT was received from 11 entities/Departments even for a single module. The main reasons, as noted from the files of CHiPS and responses of the sampled entities, were non-customisation of the modules of the system to the needs of these Departments. Resultantly, only 22 out of the 35 entities/Departments gave UAT for the four modules.

✓ The system was partially functional in the 22 entities which gave UAT and functions such as award of work after tendering, record of measurement, preparation of progress reports, payments to contractors etc., were done manually despite the system having dedicated modules for these services. In the 11 entities which did not give UAT for any module, only tenders were floated through the system and other related works done manually.

✓ CHiPS, though required to impose penalty worth ₹ 53 lakh till date (January 2018) against Mjunction for the delay in setting up the fully functional system, levied (March 2017) a penalty of only ₹ five lakh for the delay and that too after this was pointed out by Audit. No reasons were on record of CHiPS or DEIT for levying part penalty. Further, no penalty could be levied against Mjunction for failure to provide necessary customisation to the needs of the entities/Departments where the system was rolled out in the absence of any such clause in the contract. However, ₹ two crore earmarked for customisation has not been paid to Mjunction till August 2018.

In the exit conference (January 2018), the PS, DEIT *inter alia* stated that all the modules were prepared and deployed for use by the user Departments and any customisation as per the requirement of the user Departments would be done accordingly. The PS also stated that the user Departments have been requested to adopt the modules as per their requirement for optimal use of the integrated e-Procurement system. The PS further stated that CHiPS had made payment against the modules actually in use.

The reply is not correct as (i) the Joint Secretary, DEIT after the exit conference had confirmed (March 2018) to Audit that four modules have been partially adopted by the Departments while the remaining four modules were not being utilised by the Departments for lack of customisation; (ii) the Secretary, PWD present in the exit conference informed (January 2018) Audit that it had not granted the UAT in the absence of necessary customisations in the e-Procurement system, and Audit noticed that PWD had been using the e-works portal for making payments to contractors and not the payment module of the e-Procurement system. Hence, the request of PS, DEIT to the user entities/Departments to use the system, which was not functional in all respects, lacked rationale; (iii) the payment to the SI has been made upfront without linking it with customisation work and hence, the reply that payment was made against modules actually in use was not backed by evidence.

Recommendation

All the eight modules of the software should be made operational with required customisation as per the needs of all the Departments within a specified time span to optimise the system.

3.1.2.2 Manual floating of tenders of ₹ 108.35 crore

Tenders worth ₹ 108.35 crore, each valued between ₹ 10 lakh and ₹ 20 lakh were floated manually by PWD and WRD bypassing the system

CHiPS, based on an instruction from Empowered Committee (EC[11]), directed (May 2016) all the Departments to reduce the threshold value of processing online tenders from ₹ 20 lakh to ₹ 10 lakh. However, the Engineer-in-Chiefs of PWD and WRD did not issue instructions to their divisions to invite all tenders valued ₹ 10 lakhs and above through the new e-Procurement system for reasons not on record.

Resultantly, between May 2016 and June 2017, all the 48 PWD divisions and 18 WRD divisions manually invited 658 tenders[12] worth ₹ 108.35 crore, each valued between ₹ 10 lakh and ₹ 20 lakh. Thus, the new e-Procurement system was bypassed.

The Secretary, WRD stated that no tenders valued above ₹ 10 lakh were floated manually except the work through expression of interest and RFP. The reply was incorrect as 34 tenders were invited[13] by WRD manually between May 2016 and June 2017 having value of more than ₹ 10 lakh each. The Secretary PWD could not give any justification for inviting tenders between ₹ 10 lakh and ₹ 20 lakh manually.

Recommendation

CHiPS must ensure that concerted efforts are made by the user Department/ entities to float tenders valued above ₹ 10 lakh through the system.

3.1.3 Data analytics

Analysis of data in the database of e-procurement system through the business intelligence (BI) module of the system and IDEA software tools along with scrutiny of the reportedly functional modules by Audit revealed collusion between the departmental officials and the contractors resulting in unfair tender practices as commented below:

3.1.3.1 Lack of transparency in the e-Procurement system

The BI module of the ERP system is equipped with the reporting format to detect collusive bidding by keeping a track of various activities of the vendor as well as the departmental officials. One such BI report was to identify the cases where the vendors as well as the officials dealing with the bidding process are in close contact prior to bidding. Use of same machines by both the vendor and Department may indicate possible collusion.

Audit analysed the data obtained through the analytical tool of Mjunction and by using IDEA and observed that in 1,921 tenders (***Appendix 3.1.2***) valued at

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11 EC was formed in June 2006 to grant approvals to the IT projects in various Departments of the State

12 PWD-624 amounting to ₹102.92 crore and WRD-34 amounting to ₹ 5.43 crore

13 Which were neither through expression of interest nor RFP

In 1,921 tenders, valued ₹ 4,601 crore, one or more bidders have used such 74 computers to upload their bids which were also used by officials of 17 Departments indicating cartel formation and requiring investigation from vigilance angle

₹ 4,601 crore invited by 17 Departments/entities during April 2016 to March 2017, one or more bidders had used such 74 numbers of computers[14] to upload their tender details which were also used by at least one Government official in these 17 Departments/entities for tendering. Of these, 477 bidders who used these common machines with at least one Government official were awarded works worth ₹ 961.26 crore.

This indicated that the bidders and the officials processing these bids were in close touch even before the bidding process and with several vendors/bidders using the same primary email-id (commented in **paragraph 3.1.3.3**), the whole system becomes porous and unreliable. Moreover, WRD had cancelled (2016) 10 tenders on the grounds of collusive practice between the Department officials and the bidders for using the same machine and requested (April 2017) CHiPS to take preventive measures. However, no such measures were taken by CHiPS, for reasons not on record. The matter, therefore, is a red flag to probable cartel formation and merits examination from a vigilance angle.

In the exit conference (January 2018), the PS, DEIT stated that corrective measures have been taken by CHiPS by blocking the use of same MAC-id by Departments and vendors and also by multiple vendors. Further, the PS also stated that the data extracted from the system need not be considered as cases of collusion/ cartel formation and loss to the State, as it needs to be further corroborated, to conclusively establish that collusion/cartel formation has actually happened. CHiPS further stated (March 2018) that they had alerted user Departments several times against the use of same machine by multiple bidders.

The reply of PS, DEIT and CHiPS is not acceptable as CHiPS should have blocked the use of same MAC-id by officials and vendors and not limited itself to merely flagging the issue to the user Departments despite the same situation also occurring in CHiPS (***Appendix 3.1.2***) and especially when WRD sounded CHiPS for preventive measures on same grounds. Further, no steps were taken by CHiPS and DEIT either to identify the 73 computers used by officials and vendors upon reported by Audit or to take action against the officials involved in such practice. Moreover, the fact that the vendors used the same computers with the departmental officials and also possessed common primary and partner's email-id is in itself a strong indication of cartel formation/collusive practices and needed investigation from vigilance angle. Cancellation of tenders by WRD on the ground of collusive practices by bidders further substantiates the audit finding.

Recommendation

DEIT should ensure investigation from a vigilance angle on the use of same machines in 1,921 tenders by officials and vendors worth ₹ 4,601 crore under 17 Departments by an independent agency for taking suitable action within a specified time period.

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14 One computer was found in the tender cell of PARD, Raipur but the locations of other 73 computers were not on record of the CHiPS and though called for by Audit, was not replied to. These computers were identified by Audit through the computer machine number.

3.1.3.2 Lack of validation for the unique field "PAN" in vendor management module

The vendor management module stipulates that every bidder should obtain a vendor registration (vendor-id) for participating in the tenders by registering with the e-Procurement portal. For this, the vendor/ contractor needs to submit Permanent Account Number (PAN) and other financial details. As per the RFP, PAN should be the unique feature for vendor registration.

Audit observed as under:

e-Procurement system could neither match PAN used by vendors in the e-Works portal nor it could prevent dual use of same PAN for generating vendor-ids more than once for failure to create unique field as per the approved architecture of the system and integration with the e-Works portal

✓ The vendor management module, though operational, could not register the vendors as it was not functioning properly. As a result, the contractors had done their registration from PWD through e-works portal and submitted the registration number certificate in physical form to generate vendor-id through CHiPS in the vendor registration module of e-Procurement system. However, the vendor registration certificate does not contain the PAN used to generate it.

✓ Cross verification of data in the databases of e-Works and e-Procurement system revealed that 79 contractors/vendors (***Appendix 3.1.3***) have used two sets of PAN numbers, one for registration in the e-works portal of PWD and the other for generation of their vendor-id in e-Procurement system in violation of section 272 B of Income Tax Act 1961, which stipulates that one person can hold only one PAN.

✓ No action could be taken against these contractors as the e-Procurement system was not integrated by CHiPS either with the e-Works or with the Income Tax Department, though required as per the RFP. Rather, 25 of these 79 contractors/vendors were awarded tenders valued at ₹ 209.50 crore.

✓ The vendor management module is designed to restrict creation of two vendor-id against the same PAN already recorded in the e-Procurement system. However, in 90 cases (vendor-id) two vendor-ids were generated against the same PAN[15] and this would facilitate the same bidder to generate as many vendor-ids as they want and also assist bidding more than once for the same tender using such vendor-ids.

Thus, the e-Procurement system could neither match PAN with the PAN used in e-works portal for the same vendor in the absence of integration of these two systems nor the unique field in the e-Procurement system could be established as per the system architecture to prevent the use of same PAN more than once.

In the exit conference (January 2018), the PS, DEIT and the Secretary, PWD stated that the anomaly resulted from non-integration of the centralised vendor registration portal of e-works managed by NIC with the vendor registration of the e-Procurement system for which efforts would be made to integrate the two systems.

15 For example, vendor-id 15987 and 18275 was generated against the same PAN 'AADCK8525G'

The reply is not acceptable as no efforts were taken by CHiPS to (i) make PAN the unique field in the e-Procurement system to prevent generation of multiple vendor-ids against the same PAN; (ii) integrate the system with the income tax Department as per RFP or to intimate[16] the income tax Department about the vendors possessing more than one PAN; and (iii) coordinate with PWD to integrate the system with e-works portal by devising suitable mechanism/common fields etc.

Recommendation

CHiPS should take adequate and timely measures to put in place input controls for the unique fields like PAN and to integrate the system with income tax Department and e-works portal maintained by NIC.

3.1.3.3 Use of common email ids by vendors

All bidders applying for tender through the system had to provide primary email id and partners email-id. Audit observed that 1,459 vendors used 235 common primary email-ids between November 2015 and March 2017 to generate vendor-ids where one common email id was used by a minimum of two vendors and maximum[17] by 309 bidders. In the three sampled Departments, multiple bidders applying for the same tender (in 133 tenders valued at ₹ 225.14 crore) mentioned the same partner's email-id for obtaining vendor-id while in 48 of these tenders (out of 133 cases), more than one bidder had mentioned the same primary email-id in addition to the common partner's email-id. In all these 133 tenders, one of the participating bidders who either submitted common primary email-id or partner's email-id got the works.

In the exit conference (January 2018), the PS, DEIT informed Audit that measures have been taken to block common email-id, common PAN and common mobile number.

3.1.3.4 Non-detection of ineligible bidders

Five contractors were irregularly allowed to bid beyond their classes

PWD assigns a class to each contractor based on their capacity which is recorded in the e-Works portal and vendor management module of the e-Procurement system. Five contractors, in violation of their classes assigned by PWD (***Appendix 3.1.4***), were allowed to submit bids for five tenders valued at ₹ 15.44 crore which was beyond their eligible classes. However, the vendor management module could not detect and prevent low class contractors bidding for high value tenders as the vendor management module in the e-procurement system are not mapped with the class of contractors assigned by PWD in the e-Works portal.

In the exit conference (January 2018), the PS, DEIT and Secretary, PWD stated that the anomaly would be avoided once the contractor's data is integrated between e-Works and e-Procurement.

[16] Audit intimated (April 2018) the IT Department about these 79 vendors possessing more than one PAN for suitable action

[17] Email id -harendracg@gmail.com was used by 309 different bidders in the system; tenderjdp@gmail.com- 180 different bidders; etenderconsultant@gmail.com- 75 bidders; sanisurajpur@gmail.com- 70 bidders; sprasad469@gmail.com- 56 bidders

3.1.3.5 Non-submission of pre-qualification documents

In four out of nine sampled divisions (***Appendix 3.1.5***) under two (PWD and WRD) out of three sampled Departments, Audit found that seven firms participated in the bidding process of 12 tenders without submitting income tax returns/other documents of the previous five years and submitting partial documentation on financial capacities, a precondition for qualifying for the bids. However, the concerned fields in the system did not prevent processing the bids and the firms were awarded contracts worth ₹ 89.34 crore. This was rendered possible as inputs controls were not put in place or the primary key for this field was not defined.

In the exit conference (January 2018), the PS, DEIT accepted the audit observation and asked the Secretaries of Departments present in the meeting to take corrective measures.

Recommendation

CHiPS should ensure putting in place adequate input controls for the different modules to prevent use of common emails by different vendors, ineligible contractors to bid for works and to ensure submission of all pre-qualification documents by bidders before processing of bids through the system.

3.1.3.6 Irregular acceptance of tenders bypassing online pre-bid evaluation

E-Tendering module of e-Procurement system comprises of system built evaluation of availability of required plant and machinery (P&M), key technical personnel etc., with the bidder after online submission of bids. Opening of financial bid of bidders is subject to their eligibility in pre-qualification (PQ) criteria.

Four contracts were awarded to a contractor who submitted the same list of P&M and key personnel in all the works

Audit observed in PWD (B/R), division Mahasamund that four contracts[18], each valued at more than ₹ five crore, were awarded during 2016-17 to the same contractor who submitted the same list of P&M and technical personnel. Further, the contractor submitted proof of ownership of only one out of 12 P&M and qualification certificates of only two Engineers out of five technical personnel[19] engaged in those works without their experience certificates. Thus, the PQ was not met and the contracts were to be instantly rejected. However, the evaluation of technical bids was carried out manually by the technical bid evaluation committee of PWD and nothing was reported about not meeting the PQ criteria. The financial bids were opened and processed through the system to award the work to the ineligible bidder. The main reason for manual evaluation was the fact that the system did not require an end to end processing and facilitated a pick and choose approach.

In the exit conference (January 2018), the PS, DEIT accepted the audit observation and asked the Secretary, PWD to take corrective measures. Secretary, PWD also accepted that contractors submitted the same technical staff and P&M for executing more than one work before finalisation of bid.

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[18] 38 DL/2016-17, 39 DL/2016-17, 41 DL/2016-17 and 69 DL/2016-17

[19] Site engineer, plant engineer, quantity surveyor, soil & material engineer and survey engineer.

However, the Secretary, PWD did not initiate any action against the technical evaluation committee for suppressing the fact of ineligibility of the bidder.

Recommendation

CHiPS should ensure that all the modules are made fool proof and are functional in all respects. PWD should initiate action against the technical evaluation committee for suppression of the PQ criteria of the ineligible bidder to award the work by bypassing the e-tendering module.

3.1.3.7 Award of work beyond bidding capacity of the bidder

As per the pre-bid condition, any contractor applying for a tender should have bid capacity[20] more than the estimated value of the contract.

In the e-Procurement system, tender for construction of Rafel-Manpali-Bastipali-Dongijharan-Kesratar road was invited (system tender number 7279) for ₹ 7.19 crore by PWD. The work was awarded (August 2016) to a contractor based on his bid capacity of ₹ 13.47 crore[21] calculated[22] by PWD by factoring in 14 works in hand under PWD valued at ₹ 25.19 crore.

PWD awarded 11 works valued ₹ 23.77 crore to a contractor by suppressing his bid capacity

However, Audit noticed from the e-Procurement database that the contractor had 18 works in hand valued at ₹ 34.23 crore in different Departments during the same period and accordingly his bid capacity was only ₹ 4.38 crore[23]. As the actual bid capacity was less than the contract value of ₹ 7.19 crore, the contractor was not eligible to get the work. After award of above work, the value of works in hand was enhanced from ₹ 34.23 crore to ₹ 41.42 crore and his bid capacity further dropped to minus ₹ 2.75 crore[24]. Despite negative bid capacity, the contractor was additionally awarded 10 more works valued at ₹ 16.58 crore between August 2016 and October 2016 by suppressing his actual bid capacity. This is a red flag to unfair tender practice and merits investigation from vigilance angle and disciplinary action against the tender committee members.

In the exit conference (January 2018), the PS, DEIT accepted the audit observation and asked Secretary, PWD to take corrective measures.

Recommendations

DEIT in coordination with PWD should ensure vigilance investigation of all cases of suppression of bid capacity of contractors to award works to the ineligible bidders. Disciplinary action should be taken against the tender committee members involved in the above cases. The in-built

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[20] Bid capacity = AxNx2.5 – B, where,
A= maximum financial turnover in any one year during last five years
B=existing commitment and ongoing work for the period of completion mentioned in NIT
N=Period of completion as per NIT (more than 6 months is taken as one year)

[21] Bid Capacity = A*N*2.5 (-) B
₹ 13.47 crore = ₹ 15.47 crore * 1 * 2.5 (-) ₹ 25.19 crore

[22] Calculated by tender evaluation committee comprising of members such as Chief Engineer, Superintending Engineer and Executive Engineer

[23] Bid Capacity (A*N*2.5 (-) B = ₹ 15.47 crore * 1 * 2.5 (-) ₹ 34.23 crore = ₹ 4.38 crore

[24] Bid capacity (A*N*2.5 – B) = ₹ 15.47 crore* 1 *2.5 - (₹ 34.23 crore. + ₹ 7.19 crore = ₹ 41.42 crore) = (-) ₹ 2.75 crore

business intelligence mechanism should be extensively used to prevent suppression of bid capacity of bidders.

3.1.4 Conclusion

The e-Procurement system suffered from functional deficiencies as four out of eight modules were non-functional since the system had gone live in April 2016. The incomplete system was rolled out in 35 entities/Departments of which, only 22 had given UAT.

Though tenders above ₹ 10 lakh was to be invited only through the e-Procurement system effective May 2016, 48 PWD divisions and 18 WRD divisions invited 658 tenders worth ₹ 108.35 crore manually each valued between ₹ 10 lakh and ₹ 20 lakh between May 2016 and June 2017 for failure of Engineer-in-Chiefs to instruct the divisions under them. Thus, the new e-Procurement system was bypassed.

In 1,921 tenders valued at ₹ 4,601 crore invited by 17 Departments during September 2016 to August 2017, one or more bidders had used 74 numbers of computers to upload their tender details which were also used by at least one Government official in these 17 Departments for tendering. Of these, 477 bidders who used these common machines with at least one Government official were awarded works worth ₹ 961.26 crore. The matter, therefore, is a red flag to probable cartel formation and merits examination from a vigilance angle.

In violation of section 272 B of Income Tax Act 1961, which stipulates that one person can hold only one PAN, 79 contractors/vendors used two sets of PAN numbers, one for registration in the e-Works portal of PWD and the other for generation of their vendor-id in e-Procurement system. Of these, 24 contractors were awarded works worth ₹ 209.50 crore.

The vendor management module, though intend to restrict creation of two vendor-id against the same PAN already recorded in the e-Procurement system, failed to ensure this in 90 cases (vendor-id) where two vendor-ids were generated against the same PAN. Thus, PAN was not created as unique field against the architectural design of the system.

Against the bid capacity of only ₹ 4.38 crore, a contractor was awarded 11 tenders valued at ₹ 23.77 crore by tender committee members of PWD by suppressing his bid capacity. Likewise, another contractor was awarded a tender worth ₹ 7.73 crore although he had not met the pre-bid requirements.

PUBLIC WORKS DEPARTMENT

3.2 Follow-up audit of the Performance Audit on development of roads under Central Road Fund and Minimum Needs Programme

3.2.1 Introduction

Despite serious concerns highlighted in performance audit (PA) report for the year ended 31 March 2013 on development of roads under Central Road Fund (CRF) and Minimum Needs Programme (MNP), no significant improvements were noticed in the implementation and execution of road works under CRF/MNP. Deficiencies pointed out in the previous PA report such as execution of work without detailed survey, execution of work without adhering to specifications, execution of additional work without inviting tender etc., continued unabated. As a result, two out of the four previous recommendations were not implemented while two recommendations were partially implemented.

The PA on development of roads under CRF and MNP covering the period 2008-13 was included in the Audit Report on General, Social and Economic (Non-PSUs) Sectors for the year ended 31 March 2013 of Government of Chhattisgarh (Government). The Report was laid in the State Legislative Assembly in July 2014. The Audit recommendations were accepted (July 2017) by the Department for implementation.

Follow-up audit was conducted between April and July 2017 covering the period 2013-17 to assess the extent of implementation of recommendations made in the report and steps taken by the Public Works Department (PWD) to mitigate the deficiencies. For this, records in the offices of Engineer-in-Chief, PWD and 10 out of 15 PWD divisions[25] test checked during the PA were scrutinsed in follow-up audit.

An entry conference was held (May 2017) with the Secretary, PWD, Government of Chhattisgarh to discuss the objectives, scope and methodology of the follow-up audit. An exit conference was also held (December 2017) with the Secretary, PWD to discuss the audit findings. The replies furnished by the Department have been suitably incorporated in the report.

Audit Findings

3.2.2 Overlapping of sanctions

Audit observed (2013) that due to inadequate planning and non-prioritisation of road, there was overlapping of sanctions in three road works under CRF and MNP.

Based on the audit findings, Audit had recommended that the PWD should properly plan and finalise a list of priority roads required to be developed under different schemes to avoid overlapping of sanctions under different schemes.

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[25] Ambikapur, Balodabazar, Champa, Durg, Gariyabandh, Korba, Pendra Road, Raipur No. 1, Rajnandgaon and Surajpur

In the follow-up audit, no new cases of overlapping of sanction in MNP and CRF works were noticed. However, list of priority roads was not prepared by the Department. Thus, the recommendation was partially implemented.

3.2.3 Works taken up without detailed survey, forest clearance and land acquisition

Audit observed (2013) that the PWD failed to make detailed survey and investigation before execution of road works which led to significant variations in quantities and delay in completion of the road works. Execution of road works without availability of required land and forest clearance delayed the works and increased cost.

Based on the audit findings, Audit had recommended that the works should be taken up after detailed survey and investigation and after finalising the availability of land free from all encumbrances to avoid delay in completion.

In line with the recommendation, Government decided (October 2014), not to invite tender until 90 *per cent* of land required for construction had been acquired.

Follow-up audit revealed that works were still taken up without detailed survey as discussed under:

3.2.3.1 Works taken up without detailed survey

In three out of 10 sampled PWD divisions, five works were taken up without detailed survey which led to extra cost of ₹ 5.42 crore as detailed in **Table 3.2.1**:

Table 3.2.1: Changes in scope of work after award of work

Sl. No.	Division	Name of Work	Audit Findings
1	Surajpur	Construction of Ghat cutting and cement concrete road work on Bedmi-Tamki-Masanki road	After award (October 2014) of work by the EE, PWD Surajpur, length of the road was increased (February 2016) on both sides to connect the approach road to main road by 2.86 KM. As a result, the scope of work increased by ₹ 3.11 crore.
2	Surajpur	Construction of Pawanpur-Bithiapara-Parmeshwarpur road of Premnagar	Traffic intensity of the road was calculated (December 2015) after award of work by the EE PWD Surajpur. Consequently, crust design of the road was changed to 50 mm bituminous macadam (BM) and 25 mm semi dense bituminous concrete (SDBC) in replacement of premix carpet and seal coat. This resulted in increase in cost of the work by ₹ 75.08 lakh.
3	Surajpur	Ghat cutting and strengthening of Pratappur-Chandora to Ghat Pendari-Banaras road	After award of work by the EE, PWD Surajpur, changes such as widening of road and construction of retaining wall with back filling etc., valued at ₹ 61.95 lakh were made in the scope of work.
4	Durg	Construction of Cement Concrete road in four-way direction of Durg city	Changes such as laying of paver block on shoulder, change in design of side drain, construction of culvert etc., valued at ₹ 52.34 lakh were made in the scope of work awarded to the contractor by the EE PWD Durg.
5	Baloda-bazar	Construction of Dhabadih-Boirdih-Sonadih road	After award (October 2015) of work by the EE, PWD Baloda-bazar crust design was changed which increased cost of the work by ₹ 42.08 lakh.
Total extra cost was ₹ 5.42 crore after award of work			

In the exit conference (December 2017), Secretary, PWD stated that work orders were issued as per the sanctioned estimates. However, changes were necessitated as per site conditions, demand of public and public representatives, time gap between sanction of estimates and commencement of work, increase in traffic intensity etc.

The reply is not acceptable as the reasons for post award changes as detailed in the above table were necessitated by failure to conduct site surveys before preparing the estimates of the works. Further, the reasons cited by the Department were generic in nature and not specific to these works and should have been in factored in before commencing the works to avoid post award variations in scope of works. Thus, the recommendation was partially implemented as post tender changes due to failure to conduct proper survey still persists.

3.2.4 Fund Management

Audit observed (2013) that funds made available under CRF and MNP were not utilised in time bound manner. Further, EEs of three PWD divisions utilised ₹ 11.42 crore from MNP funds for non-MNP works such as for payment of suppliers' bills, non-plan maintenance works, development of roads under MNP etc.

Based on the audit findings, Audit had recommended that funds should be utilised in a time bound manner for the earmarked projects.

During follow-up audit, it was noticed that the concerned EEs had yet failed to adjust ₹ 10.02 crore against ₹ 11.42 crore mentioned above, till date (December 2017).

Further, PWD could not utilise the funds allotted under MNP and CRF during 2013-17 and persistent savings continued as mentioned in **Table 3.2.2** below:

Table 3.2.2: Allotment, expenditure and savings during 2013-17

(₹ in crore)

Year	MNP			CRF		
	Allotment	Expenditure	Saving (-)/ Excess (+) (*per cent*)	Allotment	Expenditure	Saving (-)/ Excess (+) (*per cent*)
2013-14	101.00	46.10	(-)54.90 (54.36)	60.00	57.66	(-) 2.34 (3.9)
2014-15	124.00	73.40	(-)50.60 (40.81)	32.00	29.22	(-) 2.78 (8.69)
2015-16	190.58	89.50	(-) 101.08 (53.04)	239.00	35.63	(-) 203.37 (85.09)
2016-17	280.00	114.70	(-) 165.30 (59.04)	210.11	111.89	(-) 98.22 (46.75)
Total	**690.58**	**323.70**		**541.11**	**234.40**	

(Source: Information/data provided by the Department and compiled by audit)

In the exit conference (December 2017), Secretary, PWD admitted that savings were due to delay in approval of estimates, administrative approvals, tendering processes etc. However, no accountability was fixed for the delays.

Further, Audit also noticed deviation from the main purpose of MNP as under:

3.2.4.1 Irregular implementation of MNP on non-rural roads

In eight out of the 10 sampled PWD divisions[26], 17 works valued at ₹ 92.24 crore sanctioned under MNP during 2013-17 were for construction of roads other than rural roads such as internal city roads in urban area, major

26 Champa, Durg, Gariyabandh, Korba, Pendra road, Raipur division no 1, Rajnandgaon and Surajpur

district roads, interstate main roads, important bypass road etc. These works were beyond the scope of MNP work. Of these, the EEs of the concerned divisions incurred total expenditure of ₹ 46.36 crore as of August 2018 as detailed in ***Appendix 3.2.1***.

In exit conference (December 2017), Secretary, PWD accepted the Audit observation. However, he stated that inclusion of these works under MNP was a policy matter of the State Government with the concurrence of the Finance Department. The Secretary also stated that in future, appropriate head/ nomenclature for the works would be discussed with the Finance Department.

The fact remains that the administrative approvals of these works were issued after the concurrence of the Finance Department and this cannot be construed as a policy matter of the State Government to include non- rural roads under the scope of MNP. Further, the Department did not produce any copy of the policy matter, if any, to Audit. Thus, sanction of the non-rural roads under MNP defeated the scheme objective and hence, the recommendation was not implemented.

3.2.5 Contract management and execution of work

Audit observed (2013) failure of the PWD to adhere to the Government's instructions and contractual conditions leading to non-remittance of royalty into government account, non-recovery of penalty despite delay in execution of works, inadmissible payment of price escalations, non-termination of contracts despite inordinate delays, non-recovery of difference of cost of bulk and packed bitumen, excess payments due to wrong application of rate, execution of work without adhering to specifications, irregular execution of works etc.

Based on the audit findings, Audit had recommended that specifications and provisions of the manual[27] should be strictly adhered to for completion of the woks in an economic, efficient and effective manner.

The Department had accepted the above observations and had taken action in some cases pointed out by Audit as detailed in **Table 3.2.3** below:

Table 3.2.3: Action taken by the Department

Sl. No.	Observation mentioned in Audit Report (2013)	Action taken by the Department till exit conference (December 2017)
1	**2**	**3**
1	Non-remittance of royalty of ₹ 1.31 crore into Government account.	Royalty of ₹ 1.06 crore was remitted into Government account.
2	Non-recovery of penalty of ₹ 98.28 lakh despite delay in execution of works.	Penalty worth ₹ 60.11 lakh was recovered.
3	Inadmissible payment of price escalation-₹ 49.02 lakh.	Government agreed to recover ₹ 15.84 lakh but recovery was awaited.
4	Non-termination of contract despite inordinate delay.	Contract was terminated and recovery of total dues of ₹ 14.36 lakh was made.
5	Non-recovery towards difference of cost of bulk and packed bitumen-₹ 10.66 lakh.	Recovery of ₹ 7.75 lakh was made.
6	Excess payment due to wrong application of rate-₹ 24.41 lakh.	Department stated that action for the recovery was under process.

27 Works Department manual, MORT&H specifications, Rural Road Manual etc., used in the construction work

1	2	3
7	Execution of work without adhering to specifications.	An amount of ₹ 34.16 lakh (out of recoverable amount of ₹ 39.42 lakh) was recovered from the contractor on account of repair of road in disregard to the approved specifications.
8	Irregular execution of works	Approval of supplementary schedule after permission of the State Government for execution of additional works without sanction of the competent authority was required in two works. It was approved in one case[28] for ₹ 64.89 lakh and is awaited in another case[29] for ₹ 96.82 lakh.

(Source: Information provided by the Department)

Follow-up audit also revealed that despite accepting the recommendation made by Audit and action taken by the Department as mentioned in **Table 3.2.3**, repetition of similar observations were again noticed as discussed under:

3.2.5.1 Execution of work without adhering to specifications

Audit observed execution of works without adhering to Ministry of Road Transport and Highways (MORT&H) specifications in four cases as detailed in **Table 3.2.4**:

Table 3.2.4: Execution of works without adhering to the specifications

Sl. No.	Name of division	Name of work	Audit findings
1	2	3	4
1	Raipur 1	Cement concrete work of *Gondwara* canal to *Shitala Mata Mandir* Road	TS for the work was granted by Chief Engineer, PWD Zone Raipur without preparing the crust design in violation of the MORT&H guidelines. The road was constructed at a cost of ₹ 1.18 crore (October 2017). Hence, the specifications required to execute the work and actually executed could not be compared. In the exit conference (December 2017), Secretary, PWD stated that the road has very low traffic and hence, minimum crust design was adopted. However, the Secretary did not mention the reasons for granting TS without preparing the crust design of the road.
2	Gariabandh	Cement concrete work of *Girsul to Ghoghar*	In violation of clause 401.2.1 of MORTH specification, single layer of Granular Sub Base (GSB) Grade V was made instead of two separate layers of GSB. Further, provision of 50 mm Dense Bituminous Macadam (DBM) and 30 mm Semi Dense Bituminous Concrete (SDBC) was made against the specification of 55 mm and 25 mm respectively. Non-adherence to the MORT&H specifications while granting the TS by the Chief Engineer, PWD Zone Raipur led to avoidable extra cost of ₹ 10.05 lakh. In the exit conference (December 2017), Secretary, PWD stated that road was executed as per TS and design approved by the competent authority. The reply is not acceptable as the TS itself was granted in violation of the MORT&H specifications, which resulted in the avoidable extra cost.

[28] Askala-Ahirpar road
[29] Darima-Nawanagar Karra road

1	2	3	4
3	Pendra Road	Construction of Ratanpur-Manjhwani-Kenda-Kenvchi road	Work was awarded by the EE, PWD Division Pendra Road in April 2010 and clearance for execution in the forest land was given by the Forest Department in August 2014. Execution of SDBC over DBM was to be done immediately but it was done after three years in 11.42 km out of 42 km of the approved road length due to objections raised by the Forest Department on execution without forest clearance. This resulted in violation of MORT&H timelines for execution of the work and also led to substandard execution of works worth ₹ 3.92 crore. In the exit conference (December 2017), Secretary, PWD stated that additional layer of tack coat was executed over the DBM work before execution of SDBC. The reply is incorrect as execution of additional layer of tack coat was not recorded in the measurement book and hence, its execution was not substantiated. This needed investigation by some independent agency.
4	Korba	Construction of Pali-Tanakhar-Jalke-Pipariya road	The road crust was designed for 550 mm with 50 mm Bituminous Macadam (BM) and Mix Seal Surface (MSS) against specification of 580 mm thickness with 55 mm DBM and 25 mm of SDBC by the Chief Engineer, PWD Zone Bilaspur for reasons not in the TS files examined by Audit. This resulted in violation of the MORT&H specifications. In the exit conference (December 2017), Secretary, PWD stated that the road was a rural road, hence, BM and MSS works were executed instead of DBM and SDBC which resulted in saving of ₹ 24.99 lakh to the Government. The reply is not acceptable as at the time of granting the TS, which was in violation of MORT&H specification, no such reasons were put on record for deviations.

3.2.5.2 Irregular execution of works

i) Execution of additional work without inviting tender

As per para 2.075 of Works Department manual, tender must be invited for all works proposed to be given on contract, costing more than ₹ 50,000 and above**.**

Administrative approval for two works of black top (BT) renewal on Shyam Baba Mandir to PRA Nursery road and Ketka road Shabbir Aata Chakki to Shiv Mandir road was sanctioned (February 2017) by the Government for ₹ 55.41 lakh and ₹ 79.37 lakh respectively.

In violation of the manual, EE, PWD (B&R) Division Surajpur without inviting tenders for the works, awarded (June 2015) both these works to a contractor who was engaged in construction of Bhagvanpur-Anandpur road of Premnagar under another agreement. The contractor was paid ₹ 63.15 lakh for these works. However, the works were not completed till date (December 2017) against the schedule completion date of February 2016.

In the exit conference (December 2017), Secretary, PWD agreed that the works were executed without obtaining necessary sanction of the competent authority and stated that clarification has been sought in this regard and other action against the concerned officials was being taken at Department level. Further action was awaited (June 2018).

ii) Excess execution of works without approval

As per clause 13 of agreement read with clause 2.6 (a) of appendix 2.10 of the agreement executed between the contractor and the Department, prior written approval of the next higher authority competent to sanction the tender or the Government as the case may be, shall be required for approving any variation beyond 25 *per cent* of individual item of the work.

Follow-up audit revealed that excess quantities of work of PCC/ RCC[30] in super structure Grade M-20 beyond 25 *per cent* of estimated quantity valued at ₹ 44.07 lakh was approved in the construction of Bilaspur-Ambikapur Road to Vitaranga via Sayer-Kedma under PWD (B&R) Division Ambikapur without obtaining sanction from competent authority.

The Secretary, PWD accepted the audit observation and stated (December 2017) that clarification has been sought and other action against the concerned officials was being taken at Department level. Further action was awaited (August 2018).

3.2.5.3 Recovery made at the instance of Audit

As per clause 51.1 of the agreement, mobilisation advance would be deemed as interest bearing advance at an interest rate of 10 *per cent* to be compounded quarterly.

Audit observed that the contractor engaged for construction of Champa-Seoni (via Seoni-Upreli-Jervay) road under EE, PWD (B&R), division, Champa under CRF was provided mobilisation advance of ₹ 1.99 crore (February and March 2012). The division recovered the advance, and recovered interest amounting to ₹ 37.51 lakh from the contractor at the instance of Audit (December 2017).

Thus, the specifications of works and provisions of the PWD manual were not found adhered to and the recommendation was not followed.

3.2.6 Conclusion

Two out of four recommendations made by Audit in the Audit Report 2012-13 and accepted by the Department for (i) utilisation of fund in time bound manner on earmarked projects and (ii) adherence to specifications and provisions of manual had not been implemented.

Repetitions of the violations against these recommendations included execution of works of ₹ 5.20 crore beyond specification and irregular execution of non-rural works of ₹ 46.36 crore from MNP fund.

The recommendation on overlapping of sanctions was partially implemented as preparation of list of priority roads for different schemes was still not prepared and the recommendation on taking up work only upon detailed survey, investigation and finalisation of land was also not fully implemented as works worth ₹ 5.42 crore were executed without detailed survey.

The Secretary, PWD again assured Audit that the recommendations would be implemented by the Department.

[30] Plain Cement Concrete (PCC)/Reinforced Cement Concrete (RCC)

3.3 Audit Paragraphs

Audit observed significant deficiencies in critical areas, which impact the effectiveness of the State Government. Some important findings arising out of Compliance Audit (seven paragraphs) are featured in the Report. The major observations relate to fraudulent payment, absence of compliance with rules and regulations, cases of expenditure without adequate justification and failure of oversight/administrative control. These are mentioned below:

Tribal and Schedule Caste Welfare Department

3.3.1 Fraud and misappropriation with possible collusion

Fraudulent payment of ₹ 1.40 crore to 21 non-functional private schools with possible collusion at various levels under the Assistant Commissioner Tribal Development and the District Education Officer Janjgir-Champa

Assistant Commissioner, Tribal Development (ACTD) Janjgir-Champa released pre-matric scholarships of ₹ 1.40 crore to 21 private schools under Block Education Officer (BEO), Baloda for 12,071 students during the period 2011-15 based on sanction orders by six nodal officers[31]. The amounts were withdrawn by the principals of the private schools from the bank accounts of the schools, but were not paid to the students, and were misappropriated.

Audit examination revealed the following:

- ✓ As per U-DISE[32] data-base, these 21 schools were recorded as non-functional during 2011-15. Joint physical verification (November 2017) of these 21 schools by Audit with the concerned BEO and nodal officers revealed that 10 private schools had never functioned, while 11 schools, though operational earlier, were closed during 2011-15. The manner in which the District Education Officer (DEO), Janjgir-Champa gave recognition to these 21 non-functional schools without verifying their existence merits investigation from a vigilance angle.
- ✓ The State Scholarship Rule, 1972 stipulates that proposals for scholarship[33] shall be submitted by the principals of private schools to the nodal officer only after verification by the BEO. In the case of the above instances relating to the disbursement of ₹ 1.40 crore, however, the nodal officers approved the proposals and the ACTD released the funds without ensuring verification by the BEO.
- ✓ The Rules stipulate that the nodal officer shall examine the proposals and if possible, physically verify the students before sanctioning the scholarships. An identification register should be maintained and attested by the nodal officer and a copy should also be kept by the concerned school. Further, bank scroll for payment of scholarship in five copies shall also be submitted to the nodal officer by the head of private school. The nodal officer

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31 Under the scheme, the principal of a Government School is appointed as nodal officer.

32 Unified District Information System for Education is a Central Government database of information about schools in India.

33 Of girl students (SC and ST) for class three to five and all students (SC, ST and OBC) of class six to eight.

shall verify the bank scrolls with the attendance register and a verified copy shall be maintained. Though Audit requisitioned relevant records including admission and attendance registers, vouchers, scholarship disbursement registers etc., ACTD, the concerned nodal officers and BEO, failed to produce any record. Non-production of records is a red flag to presumptive fraud, misappropriation and collusion. The matter therefore, merits immediate investigation from a vigilance angle.

The Special Secretary, Tribal Department, accepted (September 2017) the facts. The ACTD, Janjgir-Champa intimated (February 2018) Audit that the District Collector, Janjgir-Champa had directed the filing of FIR which was lodged (August 2018) against 13 Principals/ Directors of private schools, six nodal officers and the then ACTD, Janjgir-Champa.

Public Works Department

3.3.2 Fraudulent payments

Executive Engineer, PWD Ramanujganj irregularly awarded supply orders valued at ₹ 39.16 lakh to a firm and fraudulently made inflated payment of ₹ 17.24 lakh to the firm

In terms of the Works Department (WD) Manual read with the Store Purchase Rules, purchases above ₹ 50,000 should be through open tender, and only from firms registered with the Commercial Tax Department (CTD).

Superintending Engineer (SE), PWD, Ambikapur Circle approved (January 2016) a proposal from Executive Engineer (EE), PWD (Building and Roads), Division Ramanujganj to purchase solar street lights. At the time of according approval, the SE enclosed a copy of a similar approval accorded to EE, Korea[34] for purchase of solar street lights Part-1[35] (for ₹ 49,990 per unit) and ₹ 4,790 per unit for solar street lights Part-2[36] (for ₹ 4,790 per unit).

In the meantime (November 2015), the CTD cancelled the registration of the firm which quoted the above rates. The EE, Ramanujganj, however, without verifying this fact, and without inviting tenders, placed (February 2016) supply orders for 80 units[37] of solar street lights valued at ₹ 39.16 lakh to the same firm. Audit found that against the price of ₹ 4,790 per Part 2 solar light quoted to EE Korea, the firm was fraudulently paid ₹ 47,900 per unit, resulted in overpayment of ₹ 17.24 lakh[38]. This is a red flag and needs investigation.

The Secretary, PWD accepted (December 2017) the audit findings and stated that proposal for disciplinary action against the then EE, Ramanujganj had been forwarded (December 2017) to the Government. Further action is awaited (August 2018).

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34 For reasons not on record, EE Korea did not finally issue any purchase orders for the solar lights.

35 Includes battery stand solar panel 3x11-75 V capacity, battery box size 15 x 12 x 12-75 V and LED light 20 V auto shut down system

36 Includes pole pipe size (100 mm bottom, top 65 mm), panel frame (fitted on pipe), cable wire adjustable, clime solar pipe fitting, pole foundation agreement, complete solar poles and solar fitted bend pipe.

37 40 Part 1 solar lights and 40 Part 2 solar lights.

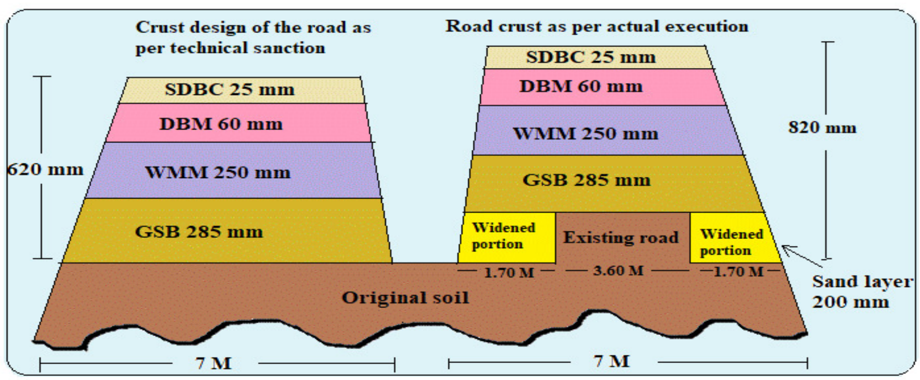
38 ₹ 47,900 - ₹ 4,790 = ₹ 43,110 x 40 = ₹ 17,24,400

3.3.3 Avoidable extra cost

Execution of layer of inverted choke in the construction of a road in contravention of MORT&H specifications and IRC pavement design led to avoidable extra cost of ₹ 4.75 crore

Indian Road Congress (IRC) stipulates[39] that if water bound macadam is to be laid directly over the sub-grade, without any other intervening pavement course, a 25 mm course of screenings or coarse sand shall be spread on the prepared sub-grade before executing other layers. In case of a fine sand or silty or clayey sub-grade, it is advisable to lay 100 mm insulating layer (inverted choke) of screening or coarse sand on top of fine grained soil.

Executive Engineer (EE), Public Works Division, Pathalgaon executed (August 2012) an agreement for ₹ 46.86 crore with a contractor for widening and strengthening of Lailunga- Kotba- Lawakera road (44 km) for completion of the work by August 2014. The work included execution of 85,197.94 cum of 200 mm inverted choke in the widened portion of the road which was executed by the contractor at a cost of ₹ 4.75 crore[40] and was paid for between November 2012 and March 2017 as shown in figure below:



Audit observed the following:

✓ As the approved road crust included provision for an intervening layer of 285 mm granular sub-base (GSB) between the sub-grade and water mix macadam (WMM), the layer of inverted choke was not required in the light of IRC provision (section 404.3.2 of MORT&H specifications).

✓ Although as per the technical sanction[41] (TS), the pavement was designed[42] for a crust thickness of 620 mm[43] in the entire width of seven metres, inclusion[44] of additional layer of 200 mm thick inverted choke (sand layer) only in the widened portion[45] (3.40 metres) of the road resulted in

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39 As per section 404.3.2 (Inverted Choke/Sub-surface drainage layer) of specifications for road and bridge works

40 85,197.938 cum x ₹ 531 per cum = ₹ 4,52,40,105 + 4.89 *per cent* above= ₹ 4,74,52,346

41 Granted (November 2011) by CE, PWD zone Ambikapur for ₹ 44.67 crore

42 Adopting IRC 37:2001

43 Granular sub-base- 285 mm, wet mix macadam- 250 mm, dense graded bituminous macadam- 60 mm and semi dense bituminous concrete- 25 mm

44 By mentioning in the technical report of the TS

45 As per the technically sanctioned estimate, carriage width of the road was to be increased from the existing width of 3.60 metres to seven metres

unequal crust thickness of the road, i.e., 820 mm for widened portion and 620 mm for the existing portion (3.60 metres). Thus, inclusion of inverted choke was not supported by the approved pavement design, which was not revised.

Hence, MORT&H specification and pavement design of the road was defied to execute the unwarranted layer of inverted choke, resulting in avoidable extra cost of ₹ 4.75 crore on the work.

The Engineer-in-Chief, PWD stated (August 2017) that most reaches of the road passes through paddy fields which were water logged area and hence provision for 200 mm thick inverted choke was provided in the estimate to not only to serve as insulating layers but also to serve the requirement of sand blankets in accordance with section 8.1 of IRC 34-1970.

The reply is not acceptable as (i) though inverted choke was not part of crust design of the road, it was not revised by revised TS; (ii) section 8.1 of IRC 34-1970 provides for application of sand blanket over the full width of embankment but it was provided only in the widened portion of the road; (iii) IRC 34-1970 recommends sand blanket only in the case of construction of road in waterlogged areas infested with detrimental salts such as sulphates and carbonates in the sub-grade soil. In this case, however, the pavement was designed in accordance with the specifications of IRC 37:2001 and nothing was mentioned about application of specifications of IRC 34-1970 or presence of any detrimental salt or waterlogged area either in the technical report or while granting TS to the work. Thus, laying of inverted choke was not aimed to prevent damage caused by salts and water logging, if any, on the road and was unwarranted.

The matter was reported to Government in July 2017 followed by reminders between September 2017 and March 2018. No reply had been received (August 2018).

3.3.4 Wasteful and Unfruitful expenditure

Sanction of a six lane road including service road in violation of MORT&H and IRC provisions besides execution of another road in Railway land in violation of works Department manual led to unfruitful expenditure of ₹ 61.29 lakh on incomplete service road and wasteful expenditure of ₹ 33.81 lakh on road works on Railway land

Six lane highways[46] are high speed corridors to carry high density traffic which involves upgradation of existing and recently constructed four lane highways. Further, Indian Road Congress (IRC) 86-1983[47], stipulates that the design of main traffic routes in built-up areas should be based on peak hour demands and not on the average daily traffic as in rural areas. The IRC also stipulates a recommended carriage width of 21.0 metres for a six lane road.

Widening of Vidhan Sabha Chowk-Dhaneli bypass road (length-9.50 kms) into a six lane road[48] in Raipur city was administratively approved (June 2013)

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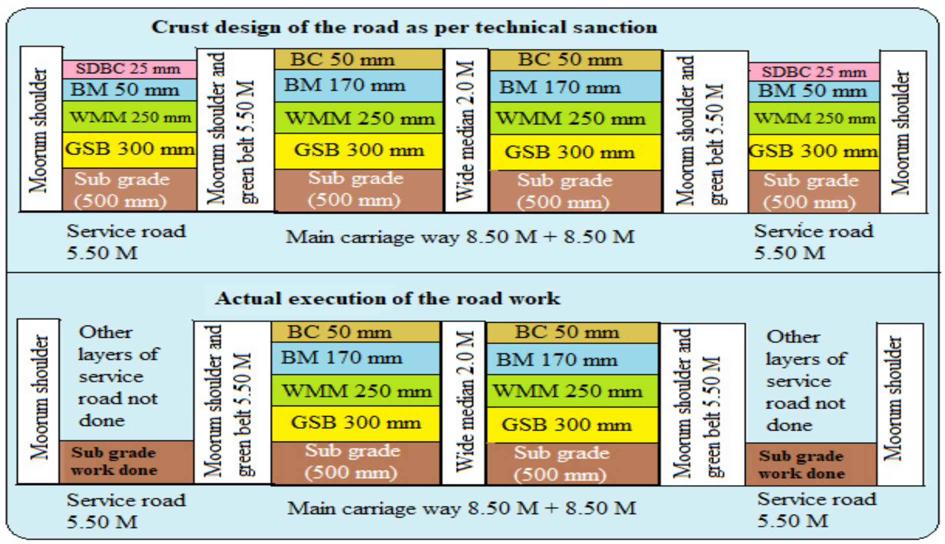
[46] According to manual of specifications and standards issued (2008) by Ministry of Road Transport and Highways (MORT&H)

[47] Geometric design standards for urban roads in plains published by the Indian Road Congress (IRC)

[48] Two lane carriage way of 8.5 metres on both sides and 5.50 metres service road on both sides of carriage way (total 28 metres)

for ₹ 68.60 crore and technically sanctioned (June 2013) for ₹ 65.87 crore by Public Works Department (PWD). The work was awarded (October 2013) to a contractor for ₹ 65.05 crore for completion of the work by October 2015.

Audit observed from records of the Executive Engineer (EE), PWD, Vidhan Sabha division, Raipur that the work was sanctioned in disregard to the MORT&H specification and IRC provisions on the ground that (i) the design of the road was made on average daily vehicular traffic instead of peak hour demands in violation of clause 6.2.3 of IRC 86 for design of six lane roads; (ii) the EE reported absence of high density traffic on the road, a precondition for constructing six lane road; (iii) the road was neither a National Highway (NH)/State Highway (SH) nor Major District Road (MDR) which are to be upgraded to six lane road; and (iv) the road was proposed to be widened to 28 metres including a service road of 5.50 metres on both sides of the main carriage way in violation of clause 6.2.4 of IRC which stipulates 21 metres as recommended carriage width for six lane road as shown below:



The EE directed (July 2014) the contractor not to construct the service road in the absence of its present utility and lack of habitation on the road. By then, the contractor had already executed embankment and culvert works of the service road valued at ₹ 61.29 lakh. Thereafter, the contractor completed construction of the main carriage way at a cost of ₹ 33.23 crore and left the service road incomplete. The EE declared (November 2015) the work complete with four lanes. This resulted in unfruitful expenditure of ₹ 61.29 lakh on the incomplete service road which was avoidable had survey and traffic census data been properly analysed in the light of specifications of MORT&H and IRC before according approval to the six lane road.

The Secretary, PWD stated (September 2017) that survey and traffic census was done for design of the road which would be useful when service road would be constructed in future.

The reply is not acceptable as the six lane road was designed on a bypass road in violation of the MORT&H and IRC provisions without factoring in the peak hour load and traffic density which resulted in midway stoppage of the service road.

(b) Widening and improvement of Saddu-Urkura road (length- 5.95 kms) was awarded (September 2013) by EE, PWD Vidhan Sabha, Division Raipur to a contractor for ₹ 12.24 crore for completion of the work by September 2014. It was noticed that 2.35 kms of the road stretch was in Railway land. However, the EE without taking prior permission for construction of the road from Railways in violation of clause 2.110 (a) of works Department manual[49] issued (September 2013) work order for commencement of the work. The contractor completed the works in 3.60 kms at a cost of ₹ 7.08 crore up to October 2014. However, in the rest 2.35 kms, the contractor could execute only excavation, embankment and granular sub base works worth ₹ 33.81 lakh as Railways stopped (October 2014) further construction work in this stretch. The work was declared completed (October 2014) by the EE without execution of water bound macadam and bituminous works in this portion of the road and final payment of ₹ 7.42 crore (February 2015) was made to the contractor.

Further, Railways intimated (October 2017) Audit that it had proposed to hand over the land to the Railway Land Development Authority, New Delhi to construct rail track for high speed train and to install solar power plants.

Thus, commencement of road work without securing right of way for construction from the Railways led to wasteful expenditure of ₹ 33.81 lakh on Railway land.

Secretary, PWD stated (September 2017) that the road was already constructed under PMGSY and at that time no objection was raised by the Railways. Therefore, the work was executed on the same alignment and during execution Railways raised their objection, after which, the work was stopped.

The reply is not acceptable as (i) the work involved widening of the existing road in Railway land for which no permission was sought from Railways; (ii) PWD had no authority to commence fresh work on Railway land without their prior permission, just because the Railways had not objected when the road was constructed under PMGSY.

Hence, commencement of work without adhering to the norms of MORT&H, IRC and works Department manual by PWD led to unfruitful expenditure of ₹ 61.29 lakh on incomplete service road besides wasteful expenditure of ₹ 33.81 lakh on road works in Railway land.

Panchayat and Rural Development Department

3.3.5 Extra cost and excess payment

Execution of unwarranted sand layer despite upgrading the existing sub-grade by bringing soil from borrow pits led to avoidable extra cost of ₹ 78.64 lakh including excess payment of ₹ 49.01 lakh by inflating the rate of execution of sand layer work

Indian Road Congress (IRC):SP:72-2007[50] stipulates that for construction of road, a minimum of 100 mm capping layer of California Bearing Ratio (CBR)

[49] When land belonging to Indian Railways is required, State Government requests the Railways to relinquish the land and if they agree to do so, Government allots it to the Department concerned.

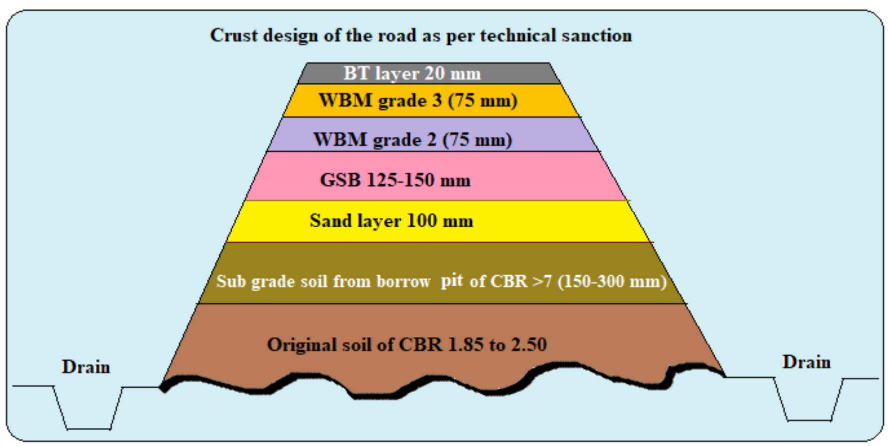
[50] Clause 4.3 and 8

not less than 10 is to be provided in cases where the CBR value of existing soil is between two and four and Equivalent Standard Axle Load (ESAL) between 60,000 and 1,00,000. Further, as per section 405.3.2 of the specifications for rural roads issued by the Ministry of Rural Development (MoRD), Government of India where Water Bound Macadam (WBM) layer is to be laid directly over the sub-grade and the sub-grade is fine-grained, it is advisable to lay 100 mm intervening layer of screening or coarse sand on top of the fine-grained soil.

Audit scrutiny revealed that the Executive Engineer (EE), Rural Development Division, Chhattisgarh Rural Road Development Authority (CGRRDA), Kawardha incurred an extra expenditure of ₹ 78.64 lakh[51] on execution of avoidable drainage layer in the construction of two rural roads. This included excess payment of ₹ 49.01 lakh[52] for execution of drainage layer at inflated rate of ₹ 706 per cum against the admissible rate of ₹ 266 per cum as per PWD Schedule of Rate (April 2010). Audit further observed as under:

✓ In the detailed estimate of construction of four[53] rural roads sanctioned (December 2012) for ₹ 5.66 crore under *Mukhyamantri Gram Sadak Yojna* (MMGSY), a NABARD sponsored scheme, the CBR of the existing[54] soil was increased to more than seven through laying of 150-300 mm sub-grade and earthen shoulder by obtaining earth from borrow pits.

✓ Although the CBR of sub-grade was improved and further intervention was not required, an avoidable 100 mm drainage (sand) layer was also provided and executed in violation of the IRC:SP:72-2007 specifications[55] as shown ahead:



✓ The execution of drainage layer was also not in accordance with the pavement design (Figure 3) which stipulates gravel base for CBR between

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51 Quantity of sand layer x Rate of sand layer = (976.80+3890.89+3355.073+2915.9= 11138.66) cum x ₹ 706 per cum = ₹78,63,908.79

52 As per PWD SOR rates for 100 mm sand layer is ₹ 266 per cum (₹ 531/2) and excess cost = (706-266)*11138.66 cum =₹ 49,01,010.40

53 Package No. 05–Ramhepur to Vicharpur, Babai to Mohgaon, Bargaon to Mohgaon and Package No. 20–Chachedi to Fandatod.

54 CBR of existing soil was between 1.85 and 2.5 *per cent*

55 Figure 3 (Pavement Design Catalogue)

seven and nine and ESAL[56] between 60,000 and 1,00,000. This was already there in the form of 125-150 mm GSB.

✓ Moreover, the sand layer was also not required in the light of section 405.3.2 of the specifications for rural roads issued by MoRD, as the WBM layers were not laid directly over the sub-grade but over a layer of GSB.

✓ In two[57] out of the four roads, technical advisor of NABARD directed (August 2014) to delete the item of drainage layer on the ground that it was for cross drainage work and backfilling of sand behind abutment which was acceded by the EE. On the same grounds besides the points mentioned above, execution of drainage layer of the other two roads was also not required.

The Chief Engineer, MMGSY, Raipur stated (July 2017) that the CBR value of original embankment of roads was very low and hence it was necessary to provide filter media being the vital part of design of road crust there. So, 100 mm thick sand layer was provided in entire length and width as per provision given in various codes.

The reply is not acceptable as the original soil of low CBR was improved by topping it with a layer of 150-300 mm soil of CBR more than seven and so the drainage layer was not required on the road. Moreover, the EE agreed to delete the item upon advised by technical advisor, NABARD.

The matter was reported to the Panchayat and Rural Development Department in July 2017 and reminded between September 2017 and March 2018. No reply has been received (August 2018).

Water Resources Department

3.3.6 Unfruitful expenditure and undue benefit

Commencement of Mohar Project work without preparing land acquisition programme and ensuring its acquisition besides failing to obtain prior environment and forest clearance from Government of India led to unfruitful expenditure of ₹ 9.28 crore on the incomplete works which could not be put to intended use

The Forest (Conservation) Act, 1980 and the Works Department (WD) Manual of the State Government stipulate that diversion of forest land for non-forest purpose (including irrigation work) requires prior approval of the Government of India (GoI). The WD manual also stipulates that notification for acquisition of land required for any particular work must be submitted before the work is taken in hand, and that the concerned EE shall work out the requirement of land for work, quarries and draw up programme for land acquisition/land transfer to ensure transfer of required land before setting up target date for commencement of works.

Water Resources Department (WRD) accorded administrative approval (December 2009) for ₹ 228.23 crore and technical sanction (February 2010) for ₹ 125.04 crore to the construction of Mohar Reservoir project. The work

56 ESAL of the road was 72,046 and 90,275

57 Ramehpur to Vicharpur and Babai to Mohgaon

was awarded (March 2012) to a contractor for ₹ 94.45 crore on lump sum[58] tender for completion by September 2014 extended up to December 2016. The work envisaged construction of an earthen dam and canal systems.

In this connection, Audit observed the following:

✓ At the time of awarding the work in March 2012, the contractor's quoted rate was 21.82 *per cent* below the schedule of rate (SOR) of 2008 (which was already four years old). Hence, workability of the offered rate by the lowest bidder was not ascertained by Chhattisgarh Irrigation Projects Board which approved the rate. Incidentally, another contractor had quoted 44 *per cent* above SOR of 2008 for executing the work.

✓ Since the project traversed both tribal and forest areas, the Tribal and Scheduled Caste Welfare (TSCW) Department whose concurrence was secured (September 2009) stipulated that the work would commence only after obtaining permission from the Ministry of Environment and Forest (MoEF), GoI and also upon payment of compensation to the people whose private land would get affected by the project.

✓ Instead of securing the necessary environment clearances itself as it was required to do, WRD entrusted the task of preparing the environment impact assessment (EIA) report and environment management plan (EMP) to the same contractor who was to execute the work. The contractor was also entrusted with the responsibility of obtaining clearance from MoEF for non-forest use of forest land and environment clearance.

✓ The Department did not draw any programme to acquire the 315.66 hectare (ha) forest land, 310.69 ha revenue land and 653.53 ha private land required for the project. Consequently, though the required revenue land and private land were acquired between June 2013 and June 2017, the EE inordinately delayed the identification of revenue land for afforestation due to non-compliance to revised GoI norms of providing double revenue land for afforestation, absence of joint verification of identified land by Revenue, Forest and Irrigation Departments, non-issue of no objection certificate by concerned Collector for use of revenue land for afforestation. The proposal for afforestation of the revenue land was submitted (April 2017) to the Divisional Forest Officer, Balod for clearance. The land was, however, not cleared by the Forest Department till date (August 2018).

✓ Though none of the above mandatory permissions/ clearances had been received, the contractor commenced (March 2012) the works. However, after executing 55 *per cent* works of feeder canal valued at ₹ 9.28 crore, the contractor stopped the work (March 2015) and expressed (July 2016) his inability to execute further work citing financial loss. The EE terminated (September 2016) the contract under the clause 4.27[59] of the agreement. The contractor did not execute the earthen dam, saddle dams, canal sluice, waste weir, tunnel and irrigation canal. These works were not resumed as of August

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[58] Lump-sum contract is used when the whole of the work as described in the given drawings and specifications are to be entrusted to single contractor for a fixed sum.

[59] If the contractor fails to take corrective action within 14 days after receipt of notice (issued by EE for deficiency in performance by the contractor and demanding corrective action), the EE will terminate the contract and forfeit to Government the amount of security deposit together with the value of work done but not paid for.

2018. Moreover, the contractor also did not prepare the EIA and EMP as stipulated in the conditions of contract while forest and environment clearance have not been obtained as of August 2018.

A joint physical inspection (September 2017) of the work site by Audit and the Departmental officials revealed that the incomplete structures were not put to any use and were subjected to onslaught of weather.

Photographs showing damage to work executed on the project

The Department stated (October 2017) that it decided to commence the work and acquire land simultaneously but due to change (June 2013) in policy by MoEF, required permissions were yet to be granted while the proposal for deforestation of forest land was pending with Forest Department.

The reply is not acceptable as the Department, in violation of WD Manual, Forest Conservation Act, 1980 and concurrence conditions of the Project by TSCW Department commenced the work which got stuck midway in the absence of land and necessary forest and environment clearance from GoI for construction.

3.3.7 Non-recovery of Government revenue

Recovery of water charges at lower rate due to application of wrong tariff from two companies besides failure to recover outstanding water charges from another company led to non-recovery of Government revenue of ₹ 1.31 crore

As per order issued (May 2010) by Water Resources Department (WRD), Government of Chhattisgarh (GoCG), rate of utilisation of water from natural sources was fixed at ₹ two per cubic meter (cum) with increase at the rate of 15 *per cent* every year. The Department replaced (April 2015) the order with rate fixed by Government from time to time and from February 2016, it was fixed at ₹ 3.51 per cum.

Scrutiny of records of Executive Engineer (EE), Water Resources Division Dantewada revealed that National Mineral Development Corporation (NMDC) and Essar Steel Limited (Essar) utilised 213.17[60] lakh cum water for their projects and plants in Dantewada district. The EE charged (May 2014) water tax at the rate[61] of ₹ 3.10 per cum instead of applicable ₹ 3.50 per cum

[60] NMDC (Bacheli + Dantewada) = 44.35 lakh cum + 47.72 lakh cum (total 92.07 lakh cum) and Essar Steel (Kirandul) = 105.47 lakh cum + 15.63 lakh cum (total 121.10 lakh cum) = 213.17 lakh cum

[61] In anticipation of approval of this rate proposed (May 2013) by the Engineer in Chief to the Department

giving undue benefit to the companies. This resulted in underassessment of water charges and loss of revenue worth ₹ 85.27 lakh to Government.

Engineer-in-Chief, WRD accepted the audit findings and stated (September 2017) that revised demand for difference amount had been issued to the companies against which ₹ 20.94 lakh had been recovered and efforts were being made to recover the balance amount.

Similarly, EE, Water Resources Construction Division, Kasdol requested (June 2014) the Collector, Balodabazar to issue Revenue Recovery Certificate (RRC) against a company (M/s South Asian Agro Industries Ltd.) for non-payment of outstanding water charges of ₹ 67.01 lakh between February 2011 and April 2014 against supply of 22,500 cum water per month from Kesala Anicut for use in the Company's power generation plant.

After three years of intimation and upon reminded by Audit (January 2016), the Collector Balodabazar directed (March 2017) the Sub-Divisional Officer (Revenue) Bhatapara to take appropriate action. The SDO sought information from the EE and upon receiving (July 2018) it after one year and four months issued (July 2018) the RRC against the firm. The recovery is yet to be made (August 2018).

Thus, wrong application of water tariffs and delayed issue of RRC by the Collector led to non-recovery of water charges of ₹ 1.31 crore from three companies.

The matter was brought to the notice (August 2017) of the Government followed by reminders between October 2017 and March 2018. However, no reply had been received (August 2018).

Raipur **(BIJAY KUMAR MOHANTY)**
The 26 November 2018 **Pr. Accountant General (Audit), Chhattisgarh**

Countersigned

New Delhi **(RAJIV MEHRISHI)**
The 27 November 2018 **Comptroller and Auditor General of India**