

## Internal Audit of Infrastructure Project



The booming Indian economy and thrust of previous central regimes have led to a spurt in enormous infrastructure development of national and state highways, power projects, airports, bridges, flyovers, etc. Infrastructure projects generally have a completion period spanning over several financial years. The principles and procedures governing the function of internal audit of an infrastructure project are the same as that of any other internal audit. The audit programme must be so designed so as to include all those aspects, which are peculiar to an infrastructure project taking special care of the risks inherent in such projects, which are usually not very well defined and keep on changing as the execution progresses. The activities and the expenses incurred in an infrastructure project could be classified into those that are directly executed for the project and activities that are incidental or ancillary to the former, which are generally of a supportive nature. This classification is essential while performing the internal audit, since it is necessary to devote more resources towards the main activities keeping the consideration of materiality into focus. Read on to know more...

The booming Indian economy and thrust of previous central regimes have led to a spurt in enormous infrastructure development of national and state highways, power projects, airports, bridges, flyovers, etc. We don't have anymore of those bumpy car rides or long flight delays. The government's policy initiative in this sector was witnessed around 1999 and since then there has been no looking back. It also resulted in a turnaround for some ailing industries. Such massive technologically advanced construction activity involving enormous financial resources was made possible only through *Public Private Partnership (PPP)*. Initially, the funds were managed by the Central Government from World Bank, Asian Development Bank (ADB), other specialised foreign funding agencies and some foreign governments as well, in the form of soft loans, which had low

interest rates and long payback periods. The early stages of the infrastructure boom also witnessed the entry of foreign construction giants. The selection, progress and monitoring of the projects was managed and controlled by regulatory authorities like NHAI through independent consultants, which were mainly foreign firms having Indian partners.

However, after the initial success and as the allocation of funds by the government in this sector was getting squeezed and could not keep pace with the escalations in cost, a new concept of *BOT, i.e., Build Operate and Transfer* gathered momentum, where the infrastructure companies were required to harness their own financial resources, complete the projects, operate and maintain it for a specified period of time and finally hand it over to the government. Such arrangements are also referred to as 'Annuity



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Projects'. Various permutations and combinations of financial models are used as financing arrangements like fixed periodic annuity over a defined period of time, revenue sharing of toll collections, etc. The country's financial institutions have also chipped in with their share of contributions in the form of term loans resulting from greater confidence in the viability of infrastructure projects. Apart from this, there are funds available in the form of government grants, mobilisation and plant advance, equipment lease financing, initial assistance from banks, bond issues, etc. BOT projects have given evolution to the *Service Concession Arrangements*, which involve constructing or upgrading the infrastructure, operating and maintaining it for a specified period of time in return for an agreed consideration for the services rendered. The operator is also referred to as the *Concessionaire*, which are more often than not *Special Purpose Vehicle* or *Entities (SPVs)*, specially created for a particular project either individually or as a jointly controlled venture through a combination of two or more existing organisations. It would not be out of place to mention here that some domestic companies have displayed such a high standard of financial acumen that a BOT project in a joint venture started giving positive returns even before the start of operations.

Infrastructure projects generally have a completion period spanning over several financial years. The construction activity has a very typical and peculiar characteristic in that it has a defined time period with a start date and an end date, although delays are normal. The actual profitability or otherwise of the project can be known only after it is completed, but the accrual basis of accounting mandates that revenues and expenses should be

accounted for as and when they are earned and incurred on some defined basis like the proportionate or percentage of completion method. The recognition of revenues and estimation of costs is a challenge.

*Cost Plus Contracts* are allotted in very special cases and are rare. More common are the *Fixed Price Contracts* with cost escalation clauses and the service concession arrangements. Generally, these contracts are executed through sub-letting major portions of work to subcontractors and piece rate workers. Fixed Price Contracts could be further sub-divided into Fixed Rate Contracts and Item Rate Contracts. The former is characterised by a fixed rate for the entire work contract without sub-division or segregation into different identifiable components, whereas in the case of Item Rate Contracts, the entire project is further sub-divided and broken down into each identifiable, separate and independent activities, which are grouped under well-

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defined major categories, with specific rates for each activity. The Item Rate Contracts have gained more prominence than the Fixed Rate Contracts. The agreement or contract executed between the client and the contractor is generally divided into separate chapters dealing with specific topics. The more important, amongst others, covers the scope of work and the value of the contract. The former deals with the details of each independent and identifiable activity comprised in the project appropriately classified along with the total quantities to be executed for each activity, serially numbered as line items and represented in applicable units of measurement, more often than not, presented in a tabular form. The total value of the contract is the aggregated sum of values of all the individual activities, which is the product of total quantity multiplied by the unit rate of that activity. This tabular representation is referred to as the Bill of Quantities (BOQ). The same table is used by the contractor in the preparation of the progressive work bills, without altering the serial and sequence of the activities. The system of billing is also quiet unique in the sense that each bill is related to all the previous bills and is a running account or progressive bill referred to by different names, viz. – RA Bill, IPA, IPC, EPC Bill, etc. with sub divisions into all contractually agreed activities displaying quantities of activities with contractually agreed rates executed till the last bill, executed during the period of the current bill, which is generally a month and finally the cumulative quantities executed and value thereof, minus the payments received till the previous bill and other deductions in the form of instalments of plant and mobilisation advance, retention deposit, performance security, income tax, WCT and various

other levies. An illustrative Running Account Bill along with Bill of Quantities for a highway project is depicted in Tables – 1A, 1B & 1C.

The preparation of the progressive work bills is an extremely important and critical exercise in a project, which is generally entrusted to a separate *Billing Department* or in its absence to the *Quantity Survey Section (QSS)* managed by qualified civil engineers and technical experts. The bills are prepared on the basis of measurements recorded in the *Daily Progress Reports (DPR)* or *Measurement Books (MB)* obtained from the various sites where work is in progress. The bill is finalised in consultation with the *Project Head* who certifies it for onward verification and counter certification by the *Independent Consultant* for final presentation before the client. The personnel entrusted with the task of preparation of bills need to possess commercial wisdom also, particularly relating to different kinds of applicable taxes, duty drawback being one of them, which could be quite significant in terms of value.

The activities and the expenses incurred in an infrastructure project could be classified into those that are directly executed for the project and activities that are incidental or ancillary to the former, which are generally of a supportive nature. The direct activities could be further classified into revenue earning and non-revenue earning, or billable and non-billable or BOQ and non-BOQ. Similarly, the direct expenses could also be further sub-divided into those incurred for BOQ work and non-BOQ work. This classification is essential while performing the internal audit, since it is necessary to devote more resources towards the main activities keeping the consideration of materiality into focus.

Projects under BOT, in particular, highways, bridges, flyovers, etc.,

**T**he principles and procedures governing the function of internal audit of an infrastructure project are the same as that of any other internal audit. One must follow the Standards on Internal Audit issued by the Institute of Chartered Accountants of India and other official pronouncements of the Institute that have a bearing on the work of internal audit. However, organisations devise their own scope of internal audit suited to their projects, which lays down the minimum set of tasks an internal auditor must perform according to the Letter of Engagement.

have a fairly long duration, which could extend to, say, even 20 or more years. Such contracts comprise of construction phase, operation or maintenance phase and finally the transfer of the asset to the client. The duration of the construction phase is quite less in comparison to the operation stage, the latter being the principal revenue-generating phase of the project, generally in the form of toll collections from vehicles, which could be on a percentage-sharing basis between the client and the contractor. The cost of the project, the maintenance of the asset and even the profitability are all managed out of these revenue collections. Toll revenues have immense significance and assume great importance as such. Collections of toll are generally outsourced to external agencies and the rates are fixed on the basis of per axle per kilometre, where one axle is considered equivalent to one passenger car. Calculations for other vehicles are based on multiples of axles. In view of this and to plug loopholes in toll collections and minimise the risk of intended

manipulations and unintentional errors, the internal audit of revenues through toll collections becomes a necessity.

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Before commencing the work, the internal auditor must communicate with the project head well in advance informing about the programme of the audit team for ensuring necessary arrangements, since most of the infrastructure projects are located in inhospitable terrain and far-flung remote areas and also to make sure that the auditee is ready and prepared with all the records and information that would be required during audit.

To facilitate preparedness of the client, the internal auditor should forward a checklist based on the scope of work. Upon arrival of the audit team, a kick-off meeting with the senior project management team including the project incharge and various section heads must be conducted for a formal introduction and briefing to ensure smooth conduct of the audit.

The audit programme must be so designed so as to include all those aspects, which are peculiar to an infrastructure project taking special care of the risks inherent in such projects, which are usually not very well defined and keep on changing as the execution progresses. A sample audit

programme should cover the following areas-

#### A. Work Performance, Client Billing And Collection:

1. Actual work done compared with the budget/project estimate during the audit period, separately for pure work and escalation.
2. Similar comparison should also be made for the entire period since inception of the project.
3. Reconciliation between total work done, work certified and uncertified, work billed and unbilled, payments received from the client, recoveries including taxes, retention deposit, performance security, mobilisation and plant advance, interest, etc., in terms of the contract.
4. Analysis of work-in-progress in the context of work done and ageing of total outstanding. WIP to be further scrutinised with the following break-up – work done but not certified, work done certified but not billed and work done certified and billed but not paid.
5. Analysis of variation orders executed, which is work done not expressly provided in the contract with respect to the quantities executed, certified and billed, status of rates billed, certified and approved and pending for approval.
6. Scrutinise present status of work that is still to be executed with respect to the contract for any changes in BOQ having material impact on the project with acceptance from the client.
7. Checking calculation of escalation bills based on monthly indices released by RBI.
8. Collections from the client with respect to the contractual collection period. Scrutiny of receipts in bank, otherwise than

from cheques received from clients.

#### B. Procurement of Materials, Recording of Receipts and Issues Including Client Materials:

1. Ensure classification of all materials into major materials like building materials, including cement, structural and reinforcement steel, RMC, chemicals and explosives, etc., semi-finished materials including boulders, aggregates, sand, stone chips, stone dust, RBM, GSB, etc., oil, fuel and lubricants including HSD, petrol and other petroleum products, etc. and other materials like equipment and machinery spares, general stores and consumables, safety items, construction aids, miscellaneous service items, etc.
2. Verification of purchase procedure on the basis of indents, purchase orders, quotations, price comparative statements, authorised distributor list, etc.
3. Checking of material receipts on the basis of purchase orders, delivery challans/invoices, weigh slips with the goods receipt notes.
4. Compliance to quality control procedures.
5. Checking issue of materials on the basis of issue slips, authorised signatory list, etc.
6. Proper allocation of material issues to respective work orders of subcontractors/piece rate workers in case of subcontracting, cost centres in case of internal consumption.
7. In case materials are issued to subcontractors on recoverable basis, check correctness of recording the issues, promptness of making recoveries and rates at which recoveries are made generally confirming to cost plus handling charges.



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must invariably be discussed with the concerned section heads. A draft report must be prepared and comments obtained from the project in-charge, which need to be incorporated in the final report. A draft final report should be compiled and discussed with the senior management at the final exit meeting between the auditor and the client. ”

8. In case of material transfer between projects, check the indents, gate passes, delivery challans, confirmation from receiving sites and rates of recording transfers.
9. To check the correct recording of material receipts at the year-end cut-off dates.
10. Monthly quantitative reconciliation of major materials like cement, steel, aggregates, sand, etc. for computing the theoretical consumption based on work done and comparing the theoretical balance with actual physical balance and actual wastage with the standard norms.
11. Analysis of slow moving inventory.
12. Checking records of reusable items like shuttering materials, safety equipments, etc.
13. Checking records of scrap with physical stock, billing of scrap sold, VAT and TCS, as applicable.
14. Inventory valuation including transportation and other acquisition costs and proper allocation of other overheads based on FIFO or weighted average method.
15. Valuation of own production of materials like aggregates, stone

- dust, concrete, etc.
16. Physical verification of major items, particularly cement, steel, HSD, explosives, chemicals, expensive spares and consumables store items.
  17. Proper segregation between own materials and client materials.

#### C. Plant and Equipment:

1. Physical verification of equipments owned by the entity.
2. Checking logbooks to ensure proper record keeping.
3. Analysis of fuel consumption and utilisation of major plants through scrutiny of monthly MIS reports.
4. Comparison of fuel consumption of similar equipments and actual with standard norms.
5. Analysing utilisation of own equipments *vis-à-vis* hired

- equipments with respect to the volume of work done.
6. Checking validity of rates of hired equipments compared to the market rates.
  7. Cross verification of data of equipment-wise diesel consumption reported by plant section with diesel issues shown by the stores section.
  8. Verification of system of capturing data and reporting of plants fabricated at site.

#### D. Subcontracting:

1. Scrutinising monthly running account (RA) bills of the sub-contractors with respect to the work orders relating to the quantity of work, rates, plant and mobilisation advance, interest (if any), retention deposit, WCT, TDS, material recoveries, deductions for services availed, liquidated damages, etc.

2. Ascertaining back-to-back recoveries from sub-contractors bills of deductions on account of work made by the client.
3. Ensuring all work outsourced to third parties is supported by proper work orders/agreements.
4. Proper upkeep and maintenance of measurement books (MB) of all outsourced work.

#### E. Profit and Loss Analysis:

1. Comparing the actual expenses incurred with the budget estimates and analysing the variances. Obtaining comments from the management.

#### F. HR and Personnel:

1. Checking of wages and salaries of different categories of employees including officers, contract staff, monthly and

daily rated workers on the basis of their respective terms and conditions of employment.

2. Checking overtime paid to different categories of workers.
3. Test check a few individual files of personnel employed directly by site.
4. Comparison of actual manpower deployment with the monthly budgets.
5. Analysis of actual monthly overtime payment with the budgetary allocation and justification in terms of monthly work progress.
6. Ensure compliance of PF and ESIC laws in case of piece-rated workers employed by the project through sub-contractors.
7. Surprise attendance verification of manpower deployment by pieceworkers, if terms of payment are dependant on actual attendance, particularly in case of security guards and helpers.

#### G. Statutory Registrations, Deductions and Payments:

1. Check registrations/renewals with different statutory authorities like labour department, PF, ESIC, VAT, Service Tax, Professional Tax, mining department, explosives licence, pollution control, petroleum products, electricity and water supply authorities, etc.
2. Ensure correct deductions and recoveries of taxes and statutory levies like TDS, TCS, WCT, VAT, Service Tax, PF, ESIC, P Tax, etc.
3. Ensure timely payment and deposit of taxes and other statutory levies.
4. Adherence to time limits in filing prescribed returns.
5. Verify system of availing input tax credit on purchases and service tax against liability of VAT/WCT and Service Tax through a proper procedure of set-off.
6. Reconciliation of royalty

payments on purchase/mining of boulders/aggregates and deductions made by the client with actual liability on the basis of work done and ascertainment of year-end liability.

7. Status of assessments before various tax authorities.
8. Details of statutory disputes and cases pending before various authorities with financial implications for being treated as contingent liabilities.

#### H. Assets and Liabilities:

1. Ageing of advances and scrutinising debit balances, including advances to staff, workers, suppliers, sub-contractors, pieceworkers and other parties. Classification into recoverable and non-recoverable advances. Assessing the ad-equacy of provision of doubtful advances. Matching advances against corresponding liabilities.
2. Assessing the proper estimation and adequacy of provisions made at the year-end and outstanding liabilities. Scrutinise all credit balances.
3. Identifying pre-paid expenses.

#### I. Insurance Policies:

1. Coverage of the entire project under a comprehensive contractors all risk insurance policy (CAR) for the full duration of the project with additional claim period. Ensure all premium instalments are paid on time.
2. Insurance coverage of all the plants and equipments installed at the project.
3. Personal Accident and Workmens Compensation Policy for all the staff including contract labour engaged at the site.
4. Cash insurance cover for cash-in-transit between the bank and the project site and cash held in safe at the office.

5. Ensuring that all accident and injury claims of project staff or of third parties against the project are claimed from the insurer.

Once the records have been checked, all the observations and findings must invariably be discussed with the concerned section heads. A draft report must be prepared and comments obtained from the project in-charge, which need to be incorporated in the final report. A draft final report should be compiled and discussed with the senior management at the final exit meeting between the auditor and the client.

The main report should also be accompanied with an executive summary of highlights and significant observations and a separate annexure of suggestions and recommendations for further strengthening the internal controls, systems, methods, processes and procedures for improvement in the overall internal control environment and efficiency in operations. The Final Report is to be circulated as per the distribution list. Needless to say, but during this entire process, the internal auditor must ensure that work is carried out efficiently and effectively to produce high quality reports and completion of the assignment within the stipulated schedule.



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**TABLE – 1A**  
**INTERIM PAYMENT CERTIFICATE / ADVICE**

Name of the Work:

Month:

Contract Package:

Bill No. :

Name of Contractor:

Name of Client:

SN.	DESCRIPTION	AMOUNT (INR)
1	Work executed upto current month	
2	Work executed upto previous month	
3	Work executed during current month [(1)-(2)]	
4	Variation Orders	
5	Escalations	
6	Total work executed [(3) + (4) + (5)]	
	Less : Recoveries :	
7	Retention Money	
8	Performance Security Deposit	
9	Repayment of Advance	
10	Net amount payable [(6)-(7)-(8)-(9)]	
	Less : Statutory Deductions :	
11	Income Tax (TDS)	
12	Sales Tax / VAT / WCT	
13	Other Taxes / Duties / Cess, etc.	
	Amount payable in this bill [(10)-(11)-(12)-(13)]	

**TABLE – 1B**  
**PROGRESSIVE MONTHLY BILL**

Name of the Work:

Month:

Contract Package:

Bill No. :

Name of Contractor:

Name of Client:

SN.	DESCRIPTION	BOQ AMOUNT	VALUE OF WORK DONE		
			Cumulative Upto Current Month	Cumulative Upto Previous Month	Current Month
1	Site Clearance & Dismantling				
2	Earth Work				
3	Granular Sub-Base & Base Course				
4	Bituminous Courses & Cement Concrete Pavement				
5	Culverts				
6	Bridges/Flyovers/Underpass/ROB				
7	Drainage & Protective Works				
8	Junctions, Footpaths & Kerbs				
9	Toll Plaza				
10	Traffic Signs, Markings & Road Appurtenances				
11	Miscellaneous Works				
	Sub-Total				
12	Variation Items				
13	Escalations				
	Total				

**TABLE – 1C  
BILL OF QUANTITIES**

Name of the Work:

Month:

Contract Package:

Bill No. :

Name of Contractor:

Name of Client:

BOQ No.	Description of Activity	Unit	Qty	BOQ Rate	BOQ Amt	Cumulative upto current month		Cumulative upto previous month		During the current month	
						Qty	Amt	Qty	Amt	Qty	Amt
1	SITE CLEARANCE AND DISMANTLING										
1.01	Cleaning and grubbing road land										
1.02	Cutting / felling of marked trees										
1.03	Removal of stumps and roots left over after cutting										
1.04	Dismantling in foundation and above ground level										
1	Sub-Total										
2	EARTHWORK										
2.01	Earthwork in excavation										
2.02	Construction of embankment										
2.03	Construction of sub-grade and earthen shoulders										
2.04	Laying, spreading and compaction of sand										
2	Sub-Total										
3	GRANULAR SUB-BASE AND BASE COURSE										
3.01	Providing, laying and compacting granular sub-base										
3.02	Providing and laying Wet Mix Macadam base										
3	Sub-Total										
4	BITUMINOUS COURSES & CONCRETE PAVEMENT										
4.01	Scarifying existing bituminous road surface										

BOQ No.	Description of Activity	Unit	Qty	BOQ Rate	BOQ Amt	Cumulative upto current month		Cumulative upto previous month		During the current month	
						Qty	Amt	Qty	Amt	Qty	Amt
4.02	Providing and laying prime coat										
4.03	Providing and laying tack coat										
4.04	Providing and laying dense grade bituminous macadam										
4	Sub-Total										
5	<b>CULVERTS</b>										
5.01	Earthwork in excavation of foundation for structures										
5.02	Back filling										
5.03	Providing filter media										
5.04	Cement concrete / reinforced cement concrete										
5.05	Supplying, fitting & placing TMT / HYSD bars										
5.06	Providing and laying stone boulder aprons										
5.07	Brick masonry										
5	Sub-Total										
6	<b>BRIDGES / FLYOVERS / UNDERPASSES / ROB</b>										
6.01	Earthwork in excavation of foundation for structures										
6.02	Back filling										
6.03	Plain cement concrete / reinforced cement concrete										
6.04	Providing bored cast-in-situ RCC vertical piles										
6.05	Supplying, fixing and placing TMT / HYSD bars										
6	Sub-Total										
7	<b>DRAINAGE AND PROTECTIVE WORKS</b>										
7.01	Earthwork in excavation for all types of soil										

BOQ No.	Description of Activity	Unit	Qty	BOQ Rate	BOQ Amt	Cumulative upto current month		Cumulative upto previous month		During the current month	
						Qty	Amt	Qty	Amt	Qty	Amt
7.02	Providing plain concrete / reinforced cement concrete										
7.03	Providing brick masonry										
7.04	Constructing lined median drain										
7	Sub-Total										
8	JUNCTIONS / FOOTPATHS AND KERBS										
8.01	Providing and fixing MS railing										
8.02	Providing foundation for median kerb										
8.03	Providing cement concrete and brick mortar										
8	Sub-Total										
9	TOLL PLAZA										
9.01	Construction of Toll Plaza										
9	Sub-Total										
10	TRAFFIC SIGNS, MARKINGS & ROAD APPURTENANCES										
10.01	Pavement marking with thermoplastic paints										
10.02	Other markings										
10.03	Providing and fixing kilometre stone										
10.04	Construction of barriers										
10	Sub-Total										
11	MISCELLANEOUS WORKS										
11.01	Providing utility services										
11.02	Providing traffic arrangements										
11.03	Relocation of community properties										
11.04	Environmental Impact Mitigation Measures										
11	Sub-Total										
12	VARIATION ITEMS										
13	ESCALATIONS										
	Grand Total										

NOTE: The above table is only for illustrative purposes and does not include every activity.