

Capital Construction Projects Accountability, Independent Technical Evaluation Complements Independent Financial Audit

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ABSTRACT

The Owner invests significant amount of money on various capital projects. The public funds expenditure requires a high level of scrutiny, audit and accountability. The Agency/Authority sets up rules and regulations for the project accountability. There are thresholds and authority levels for various management staff, set up in compliance with Federal Transit Administration (FTA) guidelines. Improper use of funds results in the cancellation of funds and penalties.

Auditors independently review project budgets and change orders against pre-established thresholds and check the accounting methods against the Generally Accepted Accounting Principles (GAAP), as established by Department of Cost Defense Contract Audit Agency (DCAA). Auditors make recommendations for proper entitlement on the financial side, based on their verification and findings of the payroll, invoices, material shipment tickets and other accounting records. Most Auditors (financial) are not qualified to interpret the technical side of the contract. They assume prior technical validity of the change. They do not normally review against the contract documents in detail, for a change in scope of work. During the Audit findings, if the fraud potential is suspected then further investigation is performed. The selection of these audits could be directed by the project manager due to Board requirements or annual work plan or random selection of projects or public complains. To account for proper use of public funds, full and complete audit is important.

In this paper, the author will address a need for an independent “Technical Evaluation”, to compliment the “Financial Audit”. By reviewing and interpreting the intent of the contract documents for its General Conditions, Technical Requirements, schedules requirements and change in the scope of work, by a qualified technical staff, financial audit performance can be enhanced. A good number of cases, where entitlements is recommended by the Financial Auditors, are rejected or significantly reduced by the independent Technical Evaluator, as being part of original (base) contract scope. This is due to their strong knowledge and technical expertise in reviewing of the contact documents.

The author has found that the technical evaluator performs the merit review (entitlement evaluation) of the scope change to avoid paying twice for a portion of the work already in the contract. The project quality can be improved, lessons learned can be incorporated and value engineering ideas can be implemented. The staff becomes conscious to maintain good documentation, thus creating significant indirect savings, without delaying the project. It also brings consciousness in the contractors industry that they are being watched by the qualified staff of the Owner. The author will address the following:

1. Current Audit Process. (Financial audit without Independent Technical Evaluation).
2. Role of an Auditor.
3. Role of an independent Technical Evaluator.

4. Need for Independent Technical Evaluator to compliment the financial audit.
5. Benefit to the project.
6. Analysis of few randomly selected projects with and without technical evaluation.

GENERAL:

All capital projects require proper planning and accountability of expenditure. Certain monitoring procedures are established to monitor the progress of the project and account for all the expenditures. There are varying monetary authority limits to approve the expenditure for management staff, based on their positions. The regular reporting system determines the work progress. This is done based on the original project scope of work, so called base contract and the deliverables. For the lump sum contract, the base scope is monitored by the delivered product. The contractor uses its own means and methods to perform the work. The verification of the work delivery is done through the inspection and quality control procedures by the construction management staff.

Note: Audit implies formal financial auditing and Technical Evaluator implies technical contract scope change evaluation.

CURRENT AUDIT PROCESS:

All changes to the base scope of work (addition or deletion) are handled through the change orders. These change orders are essentially a sole source addition/deletion of work to the base contract scope. There is no competitive bid process required and the contractor puts together a proposal with few line items for the construction manager to review and approve. It is negotiated and a change order is issued by the construction manager. In most cases, the Contractor in his/her own evaluation finds ambiguity and grey area and includes certain costs associated with them as a change to the contract. It is hard to clearly state and cross reference every single item in the contract. Several items are referenced in different parts of the contract and often missed by the contractor and others. However, they are still a part of the contract. The contractor includes those grey

areas items of the project in the change orders, knowingly or unknowingly, with the hope of getting paid. The cost of those items could be significant.

The change orders over a pre-established threshold, of the Agency/ Authority, come to the Auditors (financial) for audit. Sometimes it comes before the performance of the work and sometimes after the finalization of the change order and performance of the work, depending on the urgency in the field. The incurred cost audit is very common and is performed after the work completion. The Auditor reviews and verifies the items such as prevailing wages, staff used and their time sheet, material delivery receipts, quantity, location, permits fees, process adoption, companies accounting system and control, room for potential fraud etc. and documents findings. Most often, the Auditor assumes that the change order, submitted by the construction manager, is a valid change in the scope of work. The auditor follows Generally Accepted Accounting Principles (GAAP) and performs the review of the project in the financial area. Quite often, the Auditor is not qualified to perform the technical evaluation of the scope change.

ROLE OF AN AUDITOR:

In the change order, the financial Auditor performs the following functions, based on GAAP:

1. Assumes the change order is a valid change in the scope of work.
2. Reviews and verifies time sheets hours against the billed hours.
3. Reviews and verifies the prevailing wage rates charged against government allowed rates.
4. Reviews and verifies material received quantity against the delivery tickets.
5. Reviews and verifies the construction equipment used against daily work/inspection reports.
6. Checks if the contractor accounting methods and controls against potential amendment potential.
7. Checks the frequency and quantity of past audits and potential areas of concerns in the audit findings.
8. Checks fraud potential.

9. Checks organization set up, management turnover, professionalism and billing methods.
10. Checks field office verses home office costs.
11. Checks the contract (purchase order documentation).
12. Checks insurance and bond costs and updates.
13. Checks sub contractor formal agreement documents.
14. Checks the business approach, fairness and reasonableness.
15. No technical evaluation is performed.

- authorization, Construction Directive to proceed with the change etc.
14. Reviews Time Impact Analysis for any schedule delay items.
15. Provides technical expertise to the Auditor.
16. Checks unusual situation requiring overtime work.
17. Reviews differing site conditions.
18. Reviews inspection and acceptance reports.
19. Reviews the schedule of values.
20. Compliments the work being performed by the Auditor.

ROLE OF AN INDEPENDENT TECHNICAL EVALUATOR:

In the change order, the technical Evaluator performs the following functions:

1. Reviews the entire contract agreement thoroughly - Drawings, Specifications, General Conditions, Special Provisions, Correspondence etc, as signed by the Contractor and the Owner:
2. Reviews the change orders for the change (addition or deletion) from the base contract.
3. Establishes merit of scope change.
4. Establishes the merit of the change order and quantifies the scope change – full, partial or no merit.
5. Reviews the Contractor proposed scope change against the base contract scope.
6. Reviews the line items in the contractor’s estimate against the scope change.
7. Reviews potential overlap and/or duplication of items in the scope change.
8. Reviews the cause of scope change and establishes the responsible party.
9. Reviews the recommendations made by the construction manager and the justification.
10. Reviews estimate of the scope change for its reasonableness.
11. Reviews the correspondence.
12. Visit the site to verify the actual work performed.
13. Reviews the change order details such as “Request for Information, pre-

NEED FOR INDEPENDENT TECHNICAL EVALUATION TO COMPLIMENT AUDIT:

An independent technical evaluation/ by a qualified technical person is required to establish merit of the change and to quantify the scope change. Often the contractor submits request for change without full understanding of the change. Few grey areas and scope change are duplicated or overlapped which were parts of original scope. Technical evaluator also helps quantify the scope change.

In this paper, the author strongly recommends including an independent technical evaluation of change orders over the pre-established threshold to compliment the Auditor’s work. The technical evaluation helps in the detailed and complete analysis of the change orders on the project and creates a win-win situation. The performance of the project is judged based on its documented thorough and complete analysis (business decision set aside).

BENEITS TO THE PROJECT:

Having an independent technical evaluator staff on the project team compliments the work of the Auditor, provides financial savings with proper scope change evaluation, provides detailed and complete analysis of the project audit and provides creditability and accountability of the pubic funds.

ANALYSIS OF FEW RANDOMLY SELECTED CHANGE ORDERS WITH AND WITHOUT TECHNICAL EVALUATION:

The author randomly picked 25 Auditor approved (without Technical Evaluation) change orders over the threshold of \$200, 000, on various projects and performed analysis. The result of average costs recommendations in four different categories were as follows:

- a. Average cost of change order as submitted by the contractor was \$300,000 each, totaling \$7,500,000 for 25 change orders.
- b. Auditor approved all 25 change orders for an average of \$240,000 each, totaling \$6,000,000. This was done without technical evaluation.
- c. Technical Evaluator (TE) reviewed for the validity of these 25 change orders and rejected 10 of them, for the in the base contract scope work and Contractor’s responsibility. Thus TE Rejected \$3,000,000 cost request of the Contractor or \$2,400,000 cost approval by the Auditor. It was merited for the net cost of \$0.
- d. Technical Evaluator found partial merit on 6 of these 25 change orders (75% of Audit approved cost) and some in scope work in the base contract. TE only approved \$1,080,000 cost against the contractor proposed cost of \$1,800,000 or Auditor approved cost of \$1,440,000.
- e. Technical Evaluator found partial merit on 4 of these 25 change orders (50% of Audit approved cost) and some in scope work in the base contract. TE only approved \$480,000 cost against the contractor proposed cost of \$1,200,000 or Auditor approved cost of \$960,000.
- f. Technical Evaluator found partial merit on 5 of these 25 change orders (25% of Audit approved cost) and some in scope work in the base contract. TE only approved \$300,000 cost against the contractor proposed cost of \$1,500,000 or Auditor approved cost of \$1,200,000.
- g. In all cases Auditor agreed with the Technical Evaluation team recommendations.

- h. Overall with the help of Technical Evaluator the Auditor’s work was complimented and teamwork spirit was encouraged.
- i. Overall, the contractor proposed cost of \$7,500,000 which was audited and approved by the Auditor at \$6,000,000 without technical evaluation, was further reduced to \$1,860,000 with the help of independent Technical Evaluator. Several of these change order were rejected during the merit evaluation by the technical evaluator. They required no Audit work.

Attached Table and bar chart (at the end of the paper) show above information in a tabular and the graphical comparison form.

Most of the technical evaluations performed were to compare the contractor requested change orders against the base scope in the contract documents. The contractor was knowing or unknowingly asking for additional money which was part of his/her own responsibility. The technical evaluations results were documented with the paragraph and section numbers of the specification or the detail on the drawings. (These data are summarized and averaged, clients and contractor names are not presented here due to confidentiality reasons).

As stated earlier, the auditors verified the information submitted to them assuming the pre-determined merit by the construction manager and project team. The construction manager took a path of least resistance and recommended merit as presented by the contractor. Quite often, they did prepare the cost estimates or established the pre-negotiation position. They analyzed contractor’s proposal and negotiated somewhat.

CONCLUSION/ RECOMMENDATION:

By performing the technical evaluation of change orders, duplication of in-scope items and limited merit of the change order are caught at an early stage of the audit and extra audit effort is reduced.

The ultimate responsibility still lies with the construction manager (CM). The auditor (financial and technical) provides the Owner and

Construction Manager another tool and assessment which might have been missed. This added cost of the independent technical evaluator is insignificant and is paid for itself by the savings made by their assessment.

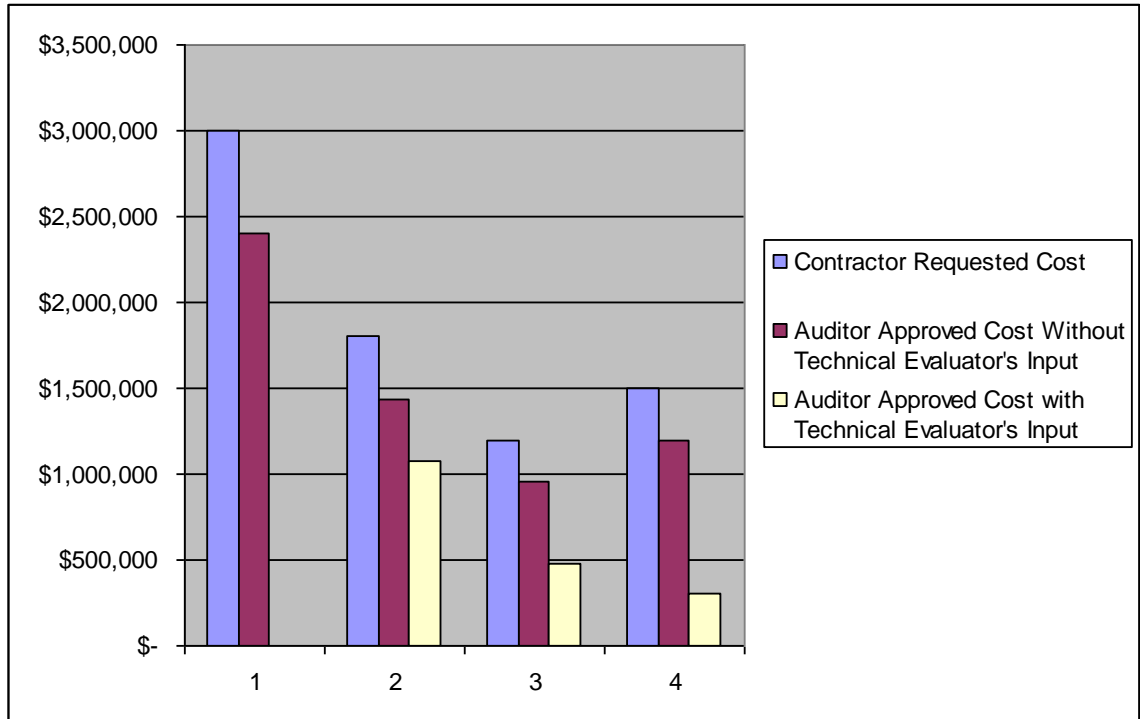
provides accountability of the project, and the change orders. It is imperative to include technical evaluation with the financial audit, as it complements the financial audit.

Independent technical evaluation of project compliments the financial audit. It

Table showing average costs on 25 randomly selected 25 construction projects in 4 categories

No of Project	Contractor Proposed Cost	Auditor Approved Cost without Tech Evaluation	Auditor Approved Cost without Tech Evaluation
10	\$3,000,000 @ Average of \$300,000 per CO	\$2,400,000 @ Average of \$240,000 per CO	\$0 Rejected due to in scope work, 0% of audited cost
6	\$1,800,000 @ Average of \$300,000 per CO	\$1,440,000 @ Average of \$240,000 per CO	\$1,080,000 @ Average of \$180,000 per CO or 75% of audited cost
4	\$1,200,000 @ Average of \$300,000 per CO	\$960,000 @ Average of \$240,000 per CO	\$480,000 @ Average of \$120,000 per CO or 50% of Audited cost
5	\$1,500,000 @ Average of \$300,000 per CO	\$1,200,000 @ Average of \$240,000 per CO	\$300,000 @ Average of \$60,000 per CO or 25% of Audited cost
25 Total	\$7,500,000 @ Average of \$300,000 per CO	\$6,000,000 @ Average of \$240,000 per CO	\$1,860,000 @ Average of \$74,400 per CO

Bar Chart 1 showing cost associated with 25 randomly selected projects in 4 different categories



Category 1: 10 projects out of 25 were originally accepted by the auditor at a slightly lower cost than the contractor. They were rejected with the input from the technical evaluator, due to no merit – part of base contract scope or contractor’s responsibility.

Category 2: 6 projects out of 25 which were originally accepted by the auditor at a slightly lower cost than the contractor. Their cost was further reduced slightly with the input from the technical evaluator.

Category 3: 4 projects out of 25 which were originally accepted by the auditor at a slightly lower cost than the contractor. Their cost was further reduced somewhat with the input from the technical evaluator.

Category 4: 5 projects out of 25 which were originally accepted by the auditor at a slightly lower cost than the contractor. Their cost was significantly reduced with the input from the technical evaluator.