

AACE
INTERNATIONAL
RECOMMENDED
PRACTICE

31R-03

**REVIEWING, VALIDATING, AND
DOCUMENTING THE ESTIMATE**

SAMPLE

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AAACE® International Recommended Practice No. 31R-03

REVIEWING, VALIDATING, AND DOCUMENTING THE ESTIMATE

TCM Framework: 7.3 – Cost Estimating and Budgeting

Rev. May 12, 2009

Note: As AAACE International Recommended Practices evolve over time, please refer to www.aacei.org for the latest revisions.

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Disclaimer: The opinions expressed by the authors and contributors to this recommended practice are their own and do not necessarily reflect those of their employers, unless otherwise stated.

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May 12, 2009

INTRODUCTION

Scope

This Recommended Practice (RP) of AACE International defines the basic elements of and provides broad guidelines for the cost estimate review, validation and documentation process. Estimate review and documentation is a step in the cost estimating and budgeting process of the *Total Cost Management (TCM) Framework*^[1]. This RP is applicable to all estimate types for any industry and is intended for those responsible for and/or participating in an estimate review. Expert knowledge is not required to understand or use this RP.

Purpose

This RP is intended to provide guidelines (i.e., not a standard) for reviewing, validating and documenting estimates. Most practitioners would consider these guidelines as good and reliable practices. It is recommended to consider using these guidelines where applicable.

Background

Cost estimates typically represent a complex compilation and analysis of input from many project stakeholders. To ensure the quality of an estimate, budget or bid, a review process is required to ensure that the estimate meets project and organization requirements. The project typically requires that the cost estimate:

- Reflect the project strategy, objectives, scope and risks
- Be suitable for a given purpose (e.g., cost analysis, decision making, control, bidding, etc.)
- Address the stakeholders' financial and performance requirements
- Ensure that all parties agree on and understand the estimate's basis, content and outcome, including the estimate's probabilistic characteristics (e.g., range, cost distribution, etc.).

RECOMMENDED PRACTICE

General Process

A structured, if not formal, review process is a best practice. The level of detail and diligence used during the estimate review cycle will vary with the strategic importance, total value, and purpose of the particular estimate. The review steps can be easily adapted for any company needs and standards, for any specific project. Figure 1 illustrates the basic estimate review process which has three main steps: review; validate; and document.

May 12, 2009

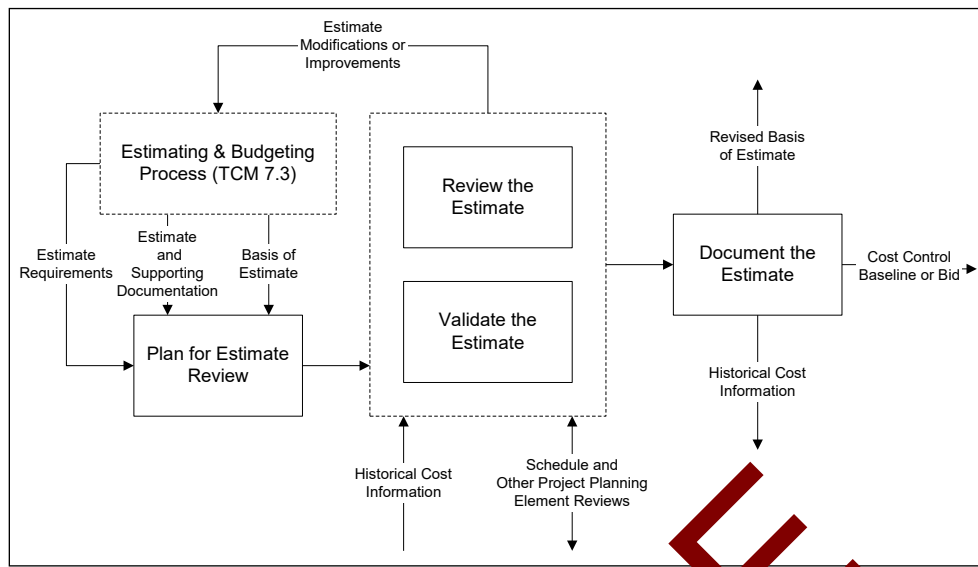


Figure 1 — Estimate Review, Validation and Documentation Process

The estimate “review” is typically qualitative in nature and focused on ensuring that the estimate technically meets requirements (i.e., it serves a quality assurance and control function). This quality review determines if the estimate was:

- Developed using contractually or procedurally required practices, tools and data
- Whether it covers the entire project scope
- Whether it is free from errors and omissions (at a macro level; the validation step should reveal any errors or omissions from the specific details)
- Whether it is structured and presented in the expected format
- Others as deemed applicable

The estimate “validation” is typically quantitative in nature and focused on ensuring that the estimate meets the project expectations and requirements in regards to its appropriateness, competitiveness (i.e., hopefully more accurate!), and identifying improvement opportunities (some estimates are not only for “design/build” but could be for complete life cycle). The estimate is typically benchmarked against or compared to various cost metrics and/or cost targets, including third party published data from the public domain (desired), similar completed projects from company’s historical data (acceptable), or past detailed estimates (not recommended but acceptable if that is all that is available). Validation should be done even if the review team also prepared the estimate (although preference should be given to an independent third party). Validation examines the estimate from a different perspective using different metrics than are used in estimate preparation.

Review and validation may require that all or part of the estimate be iterated through any of the development steps of the estimating and budgeting process. When developing the estimate execution schedule, all required reviews should be considered. Adequate time should be planned in the overall estimating process to allow for corrective actions to be taken.

The end result of an estimate review should be a set of consistent, clear and reliable documentation (i.e., the estimate and its backup) that has the concurrence and understanding of the project team and management and follows industry standards or best practices (e.g., for authorization, control, bid, etc.). Each project team member must accept and take ownership of those parts of the estimate and budget for which they will be responsible.

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Estimate Review Cycles

Figure 1 shows a single review cycle. However, the review process should be used at every phase of project scope development (for example, review the estimate at Class 5, 4, 3, etc., as it gets more detailed)^[2]. Furthermore, at a given phase, depending on the detail and importance of the estimate, multiple reviews are performed with varying purposes, scope, and participants. For example, the review process may include internal estimating department reviews, engineering reviews, project team reviews, and continuing with reviews by various levels of management, depending on the importance of the project. Similarly, for large estimates, different parts of the estimate (i.e., divided by work breakdown or cost account) may be reviewed separately. Specialized scope in any estimate should be reviewed by the appropriate specialist or subject matter expert.

During development and at completion, the review team generally conducts its quality reviews and validation without the customer or client (e.g., management) being present. Reviews involving these stakeholders are typically done last, after the team ensures that the estimate meets all defined requirements. Internal and external management reviews tend to be the most focused and structured reviews. Upper management reviews often focus on substantiating the over-all adequacy of the estimate in regards to its intended use. In other words, can management be assured that the quality of the estimate, its basis, the methods employed, and the diligence of the estimating and project teams will support their need to make a decision (i.e., does this project still support the business-case?).

Plan for the Estimate Reviews

A person(s) must be made responsible for planning and managing the review process (i.e., the lead). As was mentioned, the review process may include multiple phases and multiple review sessions. After assessing the requirements and plan, the lead estimator typically identifies a review team and defines their roles and responsibilities. In general, anyone that provided significant input to the project estimate and/or that was involved in its preparation, and/or will be responsible for managing some element of the costs should be considered as a review team participant at the appropriate phase and step. Typically, management is generally only involved in final reviews or when intermediate decisions must be made, however, best practices have proven that continual involvement of company management (owner and contractor alike) make the final reviews much more efficient (and less confrontational). Buy-in during estimate development has a significant contribution towards stakeholder ownership during reviews.

In most reviews (other than final management reviews) the review team will include the lead estimator(s); lead scheduler(s) and planner(s) (given the integrated nature of the project plan), and those that provided significant cost input for that part of the estimate being reviewed such as lead engineers, programmers, or other technical people, procurement leads, construction or other project execution representatives, and so on. There is no limit to who may be involved; anyone with input or expertise in the cost should be considered (e.g., safety, legal, operations, quality, environmental, and so on). A scribe should be designated to keep action items recorded throughout the review meeting. This is an excellent opportunity for a junior member of the estimating team to be involved in the review process. Depending on the estimate phase and how the project is being managed, owner, contractor and vendor representatives may all be involved.

An issue to consider in planning for the estimate review and validation is the issue of “*independence*”; i.e., obtaining objective, unbiased input. In some cases, the project or client may require that an independent third party be involved in the review, separately review the estimate, or prepare an independent check estimate for use as a basis of comparison in the validation (particularly if bank financing is involved). In all cases, those preparing the estimate review should be reasonably free from undue influence by the stakeholders; i.e., their pay or career is not primarily determined by the recipient of the estimate.