Estimating A to Z for the Process Industries

This course is designed to provide comprehensive coverage of the fundamentals of project cost estimating for the process industries, as well as covering many subtle and advanced estimating concepts. The process industries are “equipment-centric”, and this influence is important in the selection of estimating methodologies and techniques used in estimate preparation. This course will cover both conceptual and detailed estimating methodologies. The estimating process will be covered from both the contractor and owner's points of view, noting the similarities and differences in the respective approach of each.

Day 1

Day 1 provides an overview of the estimating function within the AACE International Total Cost Management Framework. The course begins with providing a discussion of estimate accuracy, which is important to understand as we explore many of the other topics. It discusses the various class of estimates that are determined by the maturity of the technical and project deliverables available to support estimate preparation. The available scope and project definition information largely determines the estimating methodologies that can be utilized for a given estimate; and the conceptual estimating methodologies are presented.

- **Introduction to Estimating**
- **Understanding Estimate Accuracy**
- **Capital Project Process and Estimate Classification**
- **Estimate Preparation Workflow**
- **Structuring the Estimate**
- **Overview of Estimating Methodologies**
- **Conceptual Estimating Methodologies**
  - Analogy Estimating
  - Capacity Factored Estimating
  - Equipment Factored Estimating
  - Parametric Estimating
  - Other Conceptual Estimating Methods

Day 2

Day 2 begins with discussing the detailed (or deterministic) estimating process. Estimate and schedule integration is discussed. Coverage of the quality assurance steps to promote effective estimating will be provided. The accuracy of the estimate is determined by understanding the uncertainty associated with the level of information available to support the estimate, as well as the estimating process itself. Estimate risk analysis is a method to assist in determining the effects of uncertainty on our cost estimate, and to determine the risk funds (contingency and/or reserves) to alleviate the influence of uncertainty in the estimating process. Escalation also provides an element of uncertainty that must be understood. Reconciling a current estimate to previous estimates will be discussed; as will preparation of effective estimate documentation required to communicate the estimate to stakeholders. Review and validation of cost estimates is discussed to provide assurance of estimate quality. Lastly, issues on overall organizational competency of the estimating process will be covered.

- **Detailed Estimating**
  - Detailed Estimating Activities
  - Detailed Estimating Scope Quantification
  - Applying Labor to Material Quantities
  - Applying Material Costs to Quantities
  - Adjusting the Estimate for Project Conditions
  - Estimate Allowances
  - Indirect Construction Costs
  - Other Project Costs
- **Biases In Estimating**
- **Estimate-Schedule Integration**
- **Reliability Limitations of Estimates**
- **Estimating Uncertainty**
  - Estimate Risk Analysis
  - Estimate Contingency / Reserves
  - Escalation
- **Estimate Reconciliation**
- **Estimate Documentation**
  - Estimate Summary Reports
  - Estimate Detail Reports
  - Estimate Backup Documentation
  - Basis of Estimate Report
  - Estimate Presentation
  - Forecasting
  - Change Management
- **Estimate Review and Validation**
- **Developing Organizational Estimating Competency**