

CHAPTER 1

INTRODUCTION

1. PURPOSE

This Guide serves as a companion to the Department of Energy (DOE) Order 5700.2, COST ESTIMATING, ANALYSIS, AND STANDARDIZATION. The objective of this Guide is to improve the quality of cost estimates and further strengthen the DOE program/project management system. This Guide strives to achieve this goal by providing uniform cost estimating methods as well as consistent estimate terminology. DOE federal and contractor personnel can use the information contained in this Guide as a check to ensure that estimate items that are required by DOE are included in their project estimates. This Guide also serves as a resource tool for DOE cost estimators who may be asked to develop a project estimate that is unusual or unfamiliar to them. In this case, the Guide serves as a Guide for gathering preliminary information on how to prepare such an estimate. This Guide, however, is not meant to be an inclusive, detailed Guide. It is intended that information specific to activities at particular sites be developed by the cognizant DOE Field Offices.

This volume is divided into two parts. Part I discusses the different types of DOE cost estimates, the elements of a cost estimate, and the preparation of the estimate. Part I also covers the increased role of environmental restoration and hazardous waste management projects in DOE activities and the impact of stringent environmental regulations on DOE programs/projects.

Part II of this Guide contains additional information on cost estimating techniques and their uses. Part II includes topics such as cost estimating relationships, the effect of the learning curve, cost and schedule integration, operating costs, and how cost estimates support baseline management of the projects. There is also a chapter on specialty costs for estimators who may be asked to prepare estimates for innovative or advanced technology projects.

2. BACKGROUND

Originally this volume was prepared as a textbook for DOE personnel involved in estimating construction project costs. Out of necessity, this volume has been expanded to address environmental project costs and other important elements of cost estimating, such as specialty costs, learning curves, and operating costs. Since the original edition, new sections have been added, and many sections have been rewritten based on user comments and the need for additional cost estimating tools in support of DOE's changing mission objectives. Any

comments or suggestions for further improving this volume should be directed to the Director, Office of Infrastructure Acquisition (FM-50).

3. COST ESTIMATING AND THE PROGRAM/PROJECT MANAGEMENT SYSTEM

There are several different types of cost estimates, each prepared for different reasons and at different times during the life of a program/project. However, there is one thing that all DOE cost estimates have in common. Each is prepared as a tool that supports the overall management of the program or project. For this reason, a basic understanding of how cost estimates support the DOE Program/Project Management System is imperative for those involved in the cost estimating process.

For many years the Department managed its program/projects with a very “hands-off” approach due to a predominantly contractor, production-oriented focus on nuclear weapons and the highly secretive evolution of the advanced scientific technology associated with this effort. Historically, DOE program/project managers used cost and schedule as the major indicators in program/project accomplishment. In an attempt to improve the overall program/project management system, the Department has shifted emphasis to concentrate on the accomplishment of the project’s technical and schedule baseline objectives and closely control changes to the original baselines throughout the life of the program/project. With this method, costs naturally follow the accomplishment of the objectives of the program/project.

As illustrated in Figure 1-1, cost estimates are tools that support the entire DOE major system acquisition process. Current cost estimates are critical to supporting baselines and providing information for the Key Decision (KD) making process throughout the life of the project. At KD-0, the Acquisition Executive gives approval to begin the conceptual design review process. The conceptual design report (CDR) will produce technical, schedule, and cost baselines that will be approved at KD-1 and updated by the change control process through to the start of operations. An independent cost estimate (ICE) will be conducted prior to KD-1 and updated prior to KD-2 and KD-3.

Accurate and timely cost estimates are integral to the effective and efficient management of DOE projects and programs. However, good cost estimates alone will not guarantee a fully successful project/program management process. Early management involvement in the decision making process at KD-0 and continued management attention to the important issues of technical and schedule baselining, change control, ICE updates, etc., will further strengthen the process. The increased management attention will help to ensure prudent use of scarce fiscal resources and improve DOE’s credibility with oversight groups.

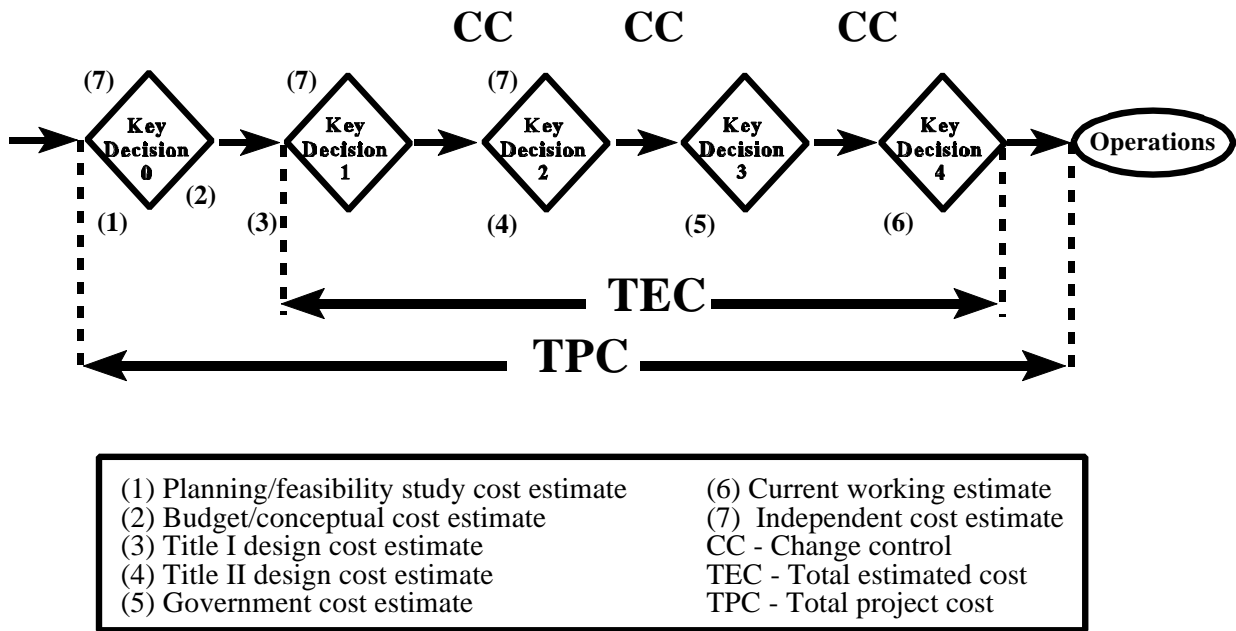


Figure 1-1. Major System Acquisition Process --When Costs Occur.