

**Procurement**  
**ARCHITECT-ENGINEER CONTRACTING GUIDE**  
**HAZARDOUS, TOXIC, RADIOACTIVE WASTE (HTRW) CONTRACTING**

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## CHAPTER 1

### INTRODUCTION

**1-1. Purpose.** This pamphlet is to serve as a training guide for USACE personnel to evaluate the most appropriate contract type for architectural and engineering services, consistent with governing laws and regulations. Selection of the final contract type will lie with the contracting officer. This guide is intended to assist noncontracting personnel who must decide which contracting tool to use in order to accomplish the USACE HTRW mission. This is not a policy regulation or directive.

**1-2. Applicability.** This pamphlet applies to HQUSACE/OCE elements, major subordinate commands, districts, laboratories, and field operating activities (FOA).

#### **1-3. References**

- a.* Public Law (PL) 96-83
- b.* PL 92-582
- c.* 10 U.S.C. 2306(a)
- d.* 10 U.S.C. 2306(c)
- e.* 10 U.S.C. 2306(d)
- f.* 10 U.S.C. 2310(b)
- g.* 10 U.S.C. 2311
- h.* 10 U.S.C. 254(b)
- i.* 10 U.S.C. 4540
- i* 10 U.S.C. 7212
- k.* 10 U.S.C. 9540
- l.* 40 U.S.C. 541 et seq

*m.* 41 U.S.C. 254(b)

*n.* 41 U.S.C. 501 et seq.

*o.* 5 U.S.C. 3109

*p.* *Armed Services Procurement Manual*

*q.* *Army Federal Acquisition Regulation Supplement (AFARS)*

*r.* *Engineer Federal Acquisition Regulation Supplement (EFARS)*

*s.* *Federal Acquisition Regulation (FAR) [Note: FAR-related references are grouped under “Solicitation Provisions” and “Contract Clauses” and listed in Appendix A]*

The above citations are included in this guide for information only. Their inclusion in no way supplements HQUSACE procurement policy. Please refer to the current appropriate and applicable statute or regulation in use at the time of your query.

**1-4. Suggested Improvements.** Users are invited to send comments and suggested improvements on ENG Form 3078.

**1-5. Perceptions and Attitudes.** As facility design and construction requirements grow in complexity, contracting philosophy and procedures should be reevaluated to assure that they continue to serve the best interests of the Government and still remain attractive to the design and construction industry. Firm fixed-price contracting has served for many years. The “mind set” that this is the only way to go must give way to a more objective approach to contract type selection. Effective pricing and sound business procurement practices require discrimination and judgement in selecting the right contract type. Cost type contracting lends itself to fast-tracking or phased construction, thus greatly reducing the project duration. The fixed-price contract requires that work be specified and the final price and schedule agreed to before work is started.

For environmental (HTRW) cleanup work that is part of a continuing program, preplacing indefinite delivery cost-reimbursement contracts should be considered so this type can be used when appropriate. See Appendix D.

## 1-6. Background

*a.* The U.S. Army Corps of Engineers (USACE) accomplishes much of its engineering and design work through professional A-E firms in the private sector. Further, USACE policy prescribes that management of services obtained from private A-E firms be accomplished by Corps personnel who are on a professional level comparable with that of the technical counterparts in the A-E firm.

*b.* USACE personnel must therefore be proficient not only in the skills of their profession but also in business matters relating to A-E firms, i.e., from negotiating the contract terms to monitoring performance under the contract to ensuring that all contractual requirements are complete. The participation of acquisition team members in this process is obvious.

*c.* For over 50 years, USACE's predominant approach to acquiring A-E services has been by using firm-fixed-price (FFP) contracts (and additionally FFP delivery orders under indefinite delivery contracts). While FFP contracting has served USACE well for many years for our traditional engineering and design work, more objective approaches to contract type selection are needed for USACE environmental work.

*d.* The Federal Acquisition Regulation (FAR) states that FFP contracting is preferable if the circumstances are appropriate, because under it the contractor assumes most of the risk and has the greatest motivation to control costs. However, FFP contracting is not always the correct contract type. The *Armed Services Procurement Manual* for contract pricing says the following:

Sound procurement requires use of the right contract type. The best, most realistic and reasonable price in the world (for the particular requirement at hand) may turn sour if the contract type is wrong.

*e.* USACE personnel need to be knowledgeable of all viable options available to them prior to discussing selection of contract types for particular projects particularly in the hazardous, toxic, and radioactive waste (HTRW) arena. This engineer pamphlet will help them make that decision.

## 1-7. Architect-Engineer Contracts

*a.* The Federal Government has not always employed A-E firms. Before World War II, the in-house capabilities of Government agencies generally satisfied their needs for A-E services. In 1939, however, with the fear of war becoming stronger, Congress

enacted legislation launching a vigorous military construction (MILCON) program to improve existing facilities and construct new ones on military bases. That legislation, known as the Public Works Act of 1939, is codified in Title 10, United States Code, sections 7212, 4540, and 9540 (10 U.S.C. §§ 7212, 4540, and 9540).

*b.* That legislation authorized the Secretaries of the War and Navy Departments to contract with practicing A-Es to produce and deliver “designs, plans, drawings, and specifications” for public works and utilities projects, overriding statutes that required advertising and competitive bidding. As a safeguard, the legislation limited fees for such A-E services to 6 percent of the facility’s estimated construction cost.

*c.* The current procurement procedures for selecting A-E firms are governed by Public Law (PL) 92-582, known as the Brooks Act (40 U.S. C. § 541 et seq.), which became law in 1972. The Brooks Act applies to all A-E services: research, planning, development, design, construction, alteration, and repair of real property. Professional services covered under the Brooks Act include services of an architectural or engineering nature or incidental services that members of the architectural and engineering professions may logically or justifiably perform (see Table 1-1).

Table 1-1

Relationship of professional services to the Brooks Act

Services:covered under the Brooks Act	Services not covered under the Brooks Act
<p>Conceptual designs</p> <p>preparation of construction plans and specifications</p> <p>Preparation of plans and specifications for facility support contracts</p> <p>Engineering cost estimates</p> <p>Value engineering analyses</p> <p>Post design services</p> <p>Preparation of record drawings ("as-built" drawings)</p> <p>Comprehensive master plans</p> <p>Environmental engineering and environmental impact assessments (when they include technical engineering considerations)</p> <p>Land surveying and mapping</p> <p>Professional engineering inspection services</p> <p>Technical engineering studies</p> <p>Technical engineering consultations</p> <p>Engineering field investigations</p> <p>Material sample analysis and recommendations</p> <p>System safety or other safety analyses</p> <p>Life-cycle cost studies</p> <p>Soils engineering</p> <p>Preparation of construction guide specifications</p> <p>Preparation of technical engineering manuals</p> <p>Expert architectural or engineering witness service</p>	<p>Studies having minimal need for engineering interpretation and primarily requiring counting, tabulating, inventorying, cataloging, organizing, indexing, and collating</p> <p>Environmental impact assessments and studies that are largely free of technical engineering considerations</p> <p>Studies regarding business or financial considerations</p> <p>Studies involving purely social, economic, or psychological phenomena</p> <p>Personnel analyses</p> <p>Management consulting services</p> <p>Auditing or accounting analyses/ investigations</p> <p>Training instruction and training material preparation not involving subject matter of a technical engineering nature</p> <p>Routine laboratory material testing services</p>

*d.* The Brooks Act requires–

- (1) Public announcement of all requirements for A-E services.
- (2) That A-E contracts be negotiated on the basis of demonstrated competence and qualification for the type of professional services required.
- (3) Discussions with no fewer than three firms regarding anticipated concepts.
- (4) Ranking of the three best qualified firms in order of preference.
- (5) Negotiations with the best qualified firms in order of preference until a fair and reasonable price agreement is reached.

*e.* Brooks Act selection criteria are implemented in FAR 36.602-1, which requires that A-E firms be selected on the basis of the following considerations:

- (1) Professional qualifications necessary for satisfactory performance of required services.
- (2) Specialized experience and technical competence in the type of work required.
- (3) Capacity to accomplish the work in the required time.
- (4) Past performance on contracts with Government agencies and private industry in terms of cost control, quality of work, and compliance with performance schedules.
- (5) Location in the general geographical area of the project and knowledge of the locality of the project – provided that application of this criterion produces at least three qualified firms, given the nature and size of the project.
- (6) Acceptability under other appropriate evaluation criteria.

*f.* The primary factor in A-E selection is the determination of the most highly qualified firm. Secondly, factors such as geographic proximity and equitable distribution of work must also be considered. However, those other factors should not take on greater significance than qualifications and past performance. To that end, if several firms are otherwise equally qualified, the equitable distribution factor can become a significant element in the selection. When a firm has a past record of exceptional

performance or has received a Department of Defense (DoD) or Service design award, that fact must be fully recognized in judging that firm against other qualified firms. The following A-E selection guidance is consistent with public law and existing DoD/FAR policies and is intended to provide clarification and greater consistency in the process without restricting the final selection.

(1) For purposes of considering the volume of DoD work previously awarded an A-E firm, the A-E Contract Administration Support System (ACASS) will be the source for data indicating A-E contract award volume during the previous 12 months. The ACASS data base is kept current by monthly updates from Defense Contract Action Data System (DCADS).

(2) Awards to overseas offices of A-E firms for projects outside the United States and its territories and possessions will not be considered when computing volume of DoD contract awards for purposes of equitable distribution.

(3) Awards to A-E subsidiaries not normally subject to management decisions, bookkeeping, and policies of a holding company are to be treated as awards to individual firms when considering equitable distribution, pursuant to Defense FAR Supplement (DFARS) 236.602-1. Incorporated subsidiaries operating under a name different from that of the parent company are in this category. Following this procedure allows greater competition and avoids removing capable local subsidiaries from consideration because of awards made to the holding company or to its other subordinate entities in different locations.

(4) Past performance evaluations of recently completed DoD contracts should be given appropriate consideration.

*g.* Price is not a factor in selecting A-E firms. Subsequent fee negotiations, however, must result in fair and reasonable prices. Otherwise, the Government is required to terminate negotiations with the most highly qualified firm and begin negotiations with the second most highly qualified firm.

## **1-7. Contract Basics**

*a.* A contract is a mutually binding legal relationship obligating the seller (contractor) to furnish supplies or services (including design) and the buyer to pay for them. It includes all types of written commitments that obligate the Government to an

expenditure of appropriated funds (and occasionally non-appropriated funds as well). In addition to bilateral instruments, contracts include (but are not limited to)–

- (1) Awards and notices of award.
- (2) Job orders or task letters issued under basic ordering agreements.
- (3) Letter contracts.
- (4) Orders, such as purchase orders, which under the contract becomes effective by written acceptance or performance.
- (5) Bilateral contract modifications.

b. Contracts do not include grants and cooperative agreements covered by 41 U.S.C. § 501 et seq.

**1-8. Contractor Motivations.** Not every Government contract is sought by contractors because it holds the promise of immediate profit. While profit is an undeniably strong and enduring motivation of business enterprise, it is not the only one. Aside from an expressed type of contract that provides dollars for work, the following factors may influence a contractor's judgment and willingness to accept a Government contract:

- a.* Company growth and development.
- b.* Expansion through sales growth.
- c.* Opportunities for follow-on business.
- d.* Development of existing capabilities and technology.
- e.* Opportunities for spinoffs.
- f.* Advancement in levels of technical knowledge.
- g.* Coverage of fixed costs (e.g., overhead and general and administrative).
- h.* Enhancement of image in private and public sectors.
- i.* Survival until better economic times.

### **1-9. Basic Contract Forms**

*a. Completion form.* The contract form usually used by USACE is the completion form. Completion-form contracts, either cost-reimbursement or fixed-price, require the contractor to furnish a specified end product. The end product could be a set

of construction drawings and specifications, a complete and functional facility, equipment, a specified service, a study, or a report. Upon delivery and formal acceptance by the Government of the specified end product, the contract is considered “complete” and the contractor receives the final payment.

*b. Term form.* This contract form is used most often for early research and development efforts where it is difficult to predict the technical outcome and there is *no* certainty of success. The contractor is contractually obligated to apply an agreed-upon level of effort over a stated period of the time. When that time expires, the contractor is paid its costs and fee and the contract illegally “complete.” In this contract, there is no *required end product*. (However, to comply with the statutory prohibition against personal services, some physical end product must be identified and submitted for the level of effort expended.)

**1-10. Prohibited Type of Government Contract.** Cost-plus-a-percentage-of-cost contracts are prohibited by 10 U.S. C. § 2306(a) and 41 U.S.C. § 254(b). Aside from being prohibited, this type of contract is among the most reckless and improvident of contracting methods; it encourages contractors to expend funds and incur costs without discipline. Under it, the more the contractor spends, the greater the profit it receives. The incentive is to spend dollars, not manage costs, since profit is tied to increased expenditures and not to their control or reduction.

### **1-11. Personal Services Contracts**

*a.* A personal services contract is characterized by the employer-employee relationship it creates between the Government and the contractor’s personnel. The Government is normally required to obtain its employees by direct hire under competitive appointment or other procedures mandated by the civil service laws. Obtaining personal services by contract, rather than by direct hire, circumvents those laws unless Congress has specifically authorized acquisition of the services by contract.

*b.* USACE contracting officers shall not award personal services contracts unless specifically authorized by statute (e.g., 5 U.S.C. § 3109) to do so.

*c.* To determine whether or not a contract is personal in nature, the contract arrangement must be judged in the light of its own facts and circumstances, the key question being *Will the Government exercise relatively continuous supervision and control over the contractor personnel performing the contract?* Occasional supervision

of a few contractor personnel does not necessarily create a personal services situation, but a pattern of issuance of instructions directly to a relatively large number of contractor personnel very well might.

*d.* If the following criteria are met, consideration should be given to determining that a proposed contract is personal in nature.

(1) Performance on site.

(2) Principal tools and equipment are furnished by the Government.

(3) Services are applied directly to the integral effort of the agency or an organizational subpart in furtherance of assigned function or mission.

(4) Comparable services, meeting comparable needs, are performed in the same or similar agencies using civil service personnel.

(5) The need for the type of service provided can reasonably be expected to last beyond 1 year.

(6) The inherent nature of the service, or the manner in which it is provided, reasonably requires, directly or indirectly, Government direction or supervision of contractor employees.

*e.* Personal services contracts for the services of individual experts or consultants are limited by the Classification Act. In addition, the Office of Personnel Management has established requirements that apply in acquiring the personal services of experts or consultants in this manner (e.g., benefits, taxes, conflicts of interest). Therefore, the contracting officer shall effect necessary coordination with the cognizant civilian personnel office.

**1-12. Statutes and Regulations.** Government acquisition of supplies and services is controlled by many rules contained in statutes and regulations. The regulations governing USACE acquisition of A-E services are discussed below in descending order of importance. Much but not all of the material in these regulations is derived from statute.

*a. Federal Acquisition Regulation (FAR).* The FAR is a single Government-wide procurement regulation mandated by the Office of Federal Procurement Policy Act of 1974, as amended by PL 96-83. Ten years later and after more than 5 years of effort to

consolidate the Defense and Federal acquisition regulations, the FAR went into effect on 1 April 1984. Although a great improvement on the procurement regulations that preceded it, the FAR is not an easy guide to A-E contracting, per se. The FAR part (Part 36) dealing with construction and A-E contracts is relatively brief and does not cover everything about them, only those matters peculiar to construction and A-E contracting. Also, because A-E services are a comparatively small part of Federal contracting, the FAR lends itself more to contracting for equipment, supplies, and other services than it does to contracting for A-E services.

***b. Defense FAR Supplement (DFARS).*** The DFARS is issued by the Assistant Secretary of Defense (Production and Logistics) by direction of the Secretary of Defense and in coordination with the Secretaries of the Army, Navy, and Air Force and the Director of the Defense Logistics Agency. The DFARS establishes uniform policies and procedures for DoD that implement and supplement the FAR. It is codified in the Code of Federal Regulations as Chapter 2 of Title 48. Its Subpart 236.6 expands on the FAR A-E coverage.

***c. Army Federal Acquisition Regulation Supplement (AFARS).*** The AFARS is issued by the Assistant Secretary of the Army (Research, Development and Acquisition) pursuant to Subpart 1.3 of the FAR. The AFARS implements and supplements the FAR and DFARS and establishes Department of the Army uniform policies and procedures for acquiring supplies and services. The AFARS is applicable to military and civil works design and construction.

***d. Engineer Federal Acquisition Regulation Supplement (EFARS).*** The EFARS is a regulation published by USACE; the Principal Assistant Responsible for Contracting (PARC) is its proponent. The EFARS implements and supplements the FAR, DFARS, and AFARS and establishes uniform policies and procedures for the Corps of Engineers relative to the administration and legal aspects of its contracts.

## CHAPTER 2

### CONTRACT TYPES

#### 2-1. General Overview

*a.* A wide selection of contract types is available to provide needed flexibility in acquiring the large variety and volume of supplies and services required by the Government. Contract types vary according to—

(1) The degree and timing of the risk assumed by the contractor for the costs of performance.

(2) The amount and nature of the profit incentive offered to the contractor for achieving or exceeding specified standards or goals.

(3) The definability of the end product.

*b.* The contract types are grouped into two broad categories: fixed-price contracts and cost-reimbursement contracts. The specific contract types range from firm-fixed-price (FFP), in which the contractor assumes full risk for the performance costs and resulting profit (or loss), to cost-plus-fixed-fee (CPFF), in which the contractor assumes minimal risk for the performance costs and the negotiated fee (profit) is fixed. In between are the various incentive contracts, in which the contractor's risk for the performance costs and the profit or fee incentives are tailored to the uncertainties involved in contract performance.

*c.* Despite the ease with which contract types can be divided into major categories, the categories often coalesce. Cost-reimbursement contracts may contain fixed-price types of arrangements [e.g., caps (or not-to-exceed dollar levels) may be negotiated on cost elements such as overhead, general and administrative expense, or travel]. Or a contract for the design, construction, and operation and maintenance of a facility may contain firm-fixed-price provisions for the facility's design and construction and cost-plus-award-fee provisions for its operation and maintenance.

*d.* While this pamphlet presents all contract types currently available, some of the contract types set forth here may not be appropriate for A-E services except in rare

instances. However, the uncertainty of scope associated with HTRW work makes cost reimbursement contracts an increasingly important contract type to consider for such work.

## **2-2. Fixed-Price Contracts**

### *a. Firm-fixed-price contracts.*

(1) A firm-fixed-price (FFP) contract provides for a price that is not subject to any adjustment on the basis of the contractor's cost experience in performing the contract. This contract type places maximum risk and full responsibility for all costs and resulting profit (or loss) upon the contractor. It provides maximum incentive for the contractor to control costs and perform effectively and imposes a minimum administrative burden upon the contracting parties.

(2) Under an FFP contract, the contractor is obligated to complete the contract at a firm price. [Other types of "fixed-price" contracts, despite their names, may provide for an adjustable price. Such contracts may include a ceiling price, a target price (including target costs), or both, within which portions of the price may be subject to adjustment under economic price adjustment, redetermination, or incentive provisions.]

(3) An FFP contract is suitable for acquiring commercial products or for acquiring other supplies or services on the basis of reasonably detailed specifications when the Government can establish fair and reasonable prices at the outset, such as when —

(a) There is adequate price competition.

(b) There are reasonable price comparisons with prior purchases of the same or similar supplies or services made on a competitive basis or supported by valid cost or pricing data.

(c) Available cost or pricing information permits reasonable estimates of the probable costs of performance.

(d) Performance uncertainties can be identified and reasonable estimates of their impact can be made, and the contractor is willing to accept a firm fixed price representing assumption of the risks involved.

***b. Fixed-price contracts with economic price adjustment.***

(1) A fixed-price contract with economic price adjustment provides for upward and downward revision of the stated contract price upon the occurrence of specified contingencies. Economic price adjustments are of three general types, as follows:

*(a) Adjustments based on established prices.* These price adjustments are based on increases or decreases from an agreed-upon level in published or otherwise established prices of specific items or the contract end items.

*(b) Adjustments based on actual costs of labor or material.* These price adjustments are based on increases or decreases in specified costs of labor or material that the contractor actually experiences during contract performance.

*(c) Adjustments based on cost indexes of labor or material.* These price adjustments are based on increases or decreases in labor or material cost standards or indexes that are specifically identified in the contract.

(2) A fixed-price contract with economic price adjustment maybe used when—

*(a)* There is serious doubt concerning the stability of market or labor conditions that will exist during an extended period of contract performance.

*(b)* Contingencies that would otherwise be included in the contract price can be identified and covered separately in the contract.

(3) A contract providing for adjustment based on cost indexes of labor or material may be appropriate when—

*(a)* The contract involves unextended period of performance, with significant costs to be incurred beyond 1 year after performance begins.

*(b)* The contract amount subject to adjustment is substantial.

*(c)* The economic variables for labor and materials are too unstable to permit a reasonable division of risk between the Government and contractor without such an arrangement.

(4) Price adjustments based on unestablished prices should normally be restricted to industry-wide contingencies. Price adjustments based on labor and material costs should be limited to contingencies beyond the contractor's control.

(5) A fixed-price contract with economic price adjustment shall not be used unless the Government determines that it is necessary either to protect the contractor and the Government against significant fluctuations in labor or material costs or to provide for contract price adjustment in the event of changes in the contractor's established prices. For example, a contract for highway or bridge construction may contain economic price adjustment provisions during a period of war when oil availability is unstable and market conditions are doubtful.

(6) When a fixed-price contract with economic price adjustment is used, in addition to the other standard clauses listed in Appendix A, either the clause *Economic Price Adjustment – Labor and Material*, or an approved USACE clause providing for adjustment based on cost indexes of labor or material must be inserted in the contract.

*c. Fixed-price incentive contracts.* A fixed-price incentive (FPI) contract is a fixed-price contract that provides for adjusting profit and establishing the final contract price by application of a formula based on the relationship of total final negotiated cost to total target cost. Fixed-price incentive contracts are covered in more detail under the incentive contracts section.

*d. Fixed-price contracts with prospective price redetermination.*

(1) A fixed-price contract with prospective price redetermination provides for a firm fixed price for an initial period of contract performance and prospective redetermination, at a stated time or times during performance, of the price for subsequent periods of performance.

(2) A fixed-price contract with prospective price redetermination may be used when it is possible to negotiate a fair and reasonable firm fixed price for an initial period, but not for subsequent periods of contract performance.

(3) The contract may provide for a ceiling price based on evaluation of the uncertainties involved in performance and their possible cost impact. This ceiling price should provide for assumption of a reasonable proportion of the risk by the contractor

and, once established, may be adjusted only by execution of contract clauses providing for equitable adjustment (e.g., by means of change orders).

(4) This contract type shall not be used unless—

(a) The Government has established that the conditions for use of a firm-fixed-price contract are not present and a fixed-price incentive contract would not be more appropriate.

(b) The contractor's accounting system is adequate for price redetermination.

(c) The prospective pricing periods can be made to conform with operation of the contractor's accounting system.

(d) There is reasonable assurance that price redetermination actions will take place promptly at the specified times.

For example, a long-term contract (e.g., 10 years) for the design of similar process plants in phases at multiple locations may contain provisions for prospective price redetermination.

(5) When a fixed-price contract with prospective price redetermination is used, the cause *Price Redetermination—Prospective*, must be inserted in the contract.

***e. Fixed-ceiling-price contracts with retroactive price redetermination.***

(1) A fixed-ceiling-price contract with retroactive price redetermination provides for a fixed ceiling price and retroactive price redetermination within the ceiling after completion of the contract.

(2) A fixed-ceiling-price contract with retroactive price redetermination is appropriate for research and development contracts estimated at \$100,000 or less when it is established that a fair and reasonable firm fixed price cannot be negotiated.

(3) A ceiling price shall be negotiated for the contract at a level that reflects a reasonable sharing of risk by the contractor. The established ceiling price may be adjusted only by execution of contract clauses providing for equitable adjustment (e.g., by means of change orders). The contract should be awarded only after negotiation of a billing price that is as fair and reasonable as the circumstances permit.

(4) Since this contract type provides the contractor no cost control incentive except the ceiling price, the Government should make clear to the contractor during negotiations before award that the contractor's management effectiveness and ingenuity will be considered in retroactively redetermining the price.

(5) This contract type shall not be used unless—

(a) The contract is for research and development and the estimated cost is \$100,000 or less.

(b) The contractor's accounting system is adequate for price redetermination.

(c) There is reasonable assurance that the price redetermination will take place promptly at the specified time.

(d) The PARC approves its use in writing.

(6) This type of contract may be appropriate for use by USACE laboratories. The inability to place an incentive to control cost is the primary reason why it is used infrequently in today's market. It is still used for some research and development work, but only to a limited degree and only under strict regulatory guidance.

(7) When a fixed-ceiling-price contract with retroactive price redetermination is used, in addition to the standard clauses listed in Appendix A, the clause *Price Redetermination—Retroactive*, is inserted in the contract.

***f. Firm-fixed-price, level-of-effort term contracts.***

(1) A firm-fixed-price, level-of-effort term contract requires the contractor to provide, for a fixed dollar amount, a specified level of effort, over a stated period of time, on work that can be stated only in general terms.

(2) A firm-fixed-price, level-of-effort term contract is suitable for investigation or study in a specific research and development area. The product of the contract is usually a report showing the results achieved through application of the required level of effort. However, payment is based on the effort expended rather than on the results achieved.

(3) This contract type may be used only when—

(a) The work required cannot otherwise be clearly defined.

(b) The required level of effort is identified and agreed upon in advance.

(c) There is reasonable insurance that the intended result cannot be achieved by expending less than the stipulated effort.

(d) The contract price is \$100,000 or less, unless approved by the PARC.

## **2-3 Cost-Reimbursement Contracts**

### ***a. General.***

(1) Cost-reimbursement contracts provide for payment of allowable incurred costs, to the extent prescribed in the contract. These contracts establish an estimate of total cost for the purpose of obligating funds and establishing a ceiling that the contractor may not exceed (except at its own risk) without Government approval.

(2) These types of contracts are suitable for use when the uncertainties involved in contract performance do not permit costs to be estimated with sufficient accuracy to use any fixed-price type of contract. Admixtures of varying services over extended performance time frames, during which outcomes may range from educated guesses to unexpected results, are candidates for the application of cost-reimbursement contracts.

(3) A cost-reimbursement contract may be used only when—

(a) The contractor's accounting system is adequate for determining costs applicable to the contract.

(b) *Appropriate* Government surveillance during performance will provide reasonable assurance that efficient methods and effective cost controls are used.

(c) A determination and findings has been executed, in accordance with USACE procedures, showing that this type of contract is likely to be less costly than any other type or that it is impractical to obtain A-E services of the kind or quality required without using this contract type (see 10 U.S.C. §§ 2306(c), 2310(b), and 2311).

***b. Government risk under cost-reimbursement contracts.***

(1) The risks associated with acquiring A-E services under cost-reimbursement contracts are assumed by the Government, because there is no guarantee that the product or service will be delivered for the amount estimated. Also, there is no requirement that the contractor deliver the product/service if its cost exceeds the estimate. The Government accepts the element of uncertainty and promises to reimburse those contractor-incurred costs that are determined, under audit, to be allowable (e.g., reasonable and allocable).

(2) Cost-reimbursement contracts may not be preferred over fixed price contracts for several reasons. They may not provide contractors strong incentives to operate efficiently and effectively to control costs, since the contractor is reimbursed for its costs and the profit (fee) may not be adequately affected by any increase or decrease in costs. (The term “profit” applies to fixed-price contracts; “fee” is the appropriate term for cost-reimbursement contracts.) This type of contract may be more time consuming and costly to award and administer. Further, contract administration and oversight activities are greater than for fixed-price contracts, in order to ensure that the contractor’s operations are conducted in an efficient and effective manner and that costs are controlled. This contract type is often appropriate for HTRW work and should be used where personnel have been adequately trained to administer such contracts.

***c. Profit (fee) under cost-reimbursement contracts.***

(1) There are statutory limitations on profit (fee) that can be agreed to as a function of initially estimated costs under cost-reimbursement contracts. For experimental, developmental, or research work performed under a cost-plus-fixed-fee contract, the fee cannot exceed 15 percent of the contract’s estimated cost, excluding fee. For other cost-plus-fixed-fee contracts, the fee cannot exceed 10 percent of the contract’s estimated cost, excluding fee. [See 10 U.S.C. § 2306(d) and 41 U.S.C. § 254(b).]

(2) Virtually all A-E cost-reimbursement contracts other than Research and Development contracts fall within the 10 percent fee limitation. This fee limitation is not to be confused with the statutory 6 percent limitation on total A-E contract price as a percent of estimated construction cost. The 6 percent A-E contract price limitation relates to the production and delivery of designs, plans, drawings, and specifications,

whereas the 10 percent fee limitation under cost-reimbursement contracts applies only to the A-E firm's profit.

*d. Mutually agreed-upon estimate of cost.*

(1) Since negotiations for cost-reimbursement contracts do not result in a price, but in an overall estimate of total cost, identifiable cost factors must be examined and assessed carefully. An overall estimate that reflects excessive caution can result in the rapid expenditure of money over a short period of time, leaving work to be done that will require the obligation of additional dollars and the modification of a contract to permit their use. On the other hand, an overall estimate that reflects undisciplined enthusiasm can result in excessive fees and motivate a contractor to spend its way toward realizing the ceiling of such an estimate.

(2) The key to effective cost estimating for these types of contracts is to isolate, as best as one can, the major elements of the job to be done and to associate with each of those elements costs that, when examined and assessed in light of the job to be done, are determined to be realistic (or as realistic as possible).

*e. Audit of contractor costs.*

(1) Under a cost-reimbursement contract, the contractor shall maintain—and the Government shall have the right to examine and audit—books, records, documents, and other evidence and accounting procedures and practices, sufficient to reflect properly all costs to have been incurred or anticipated to be incurred in performing contract work. Additionally, the Government's right to audit extends to auditing a contractor's submitted cost or pricing data in connection with the pricing of a contract or pricing associated with its modification.

(2) The Government's right to audit under cost-reimbursement contracts is not only comprehensive but specific, including requirements that auditable records be retained for specific periods under the FAR. The Defense Contract Audit Agency is the cognizant contract audit activity for contracts awarded under the military program, and USACE is the cognizant contract audit activity for contracts awarded under the civil works program. Other cognizant contract audit agencies associated with environmental work include the Environmental Protection Agency (EPA) and the Department of Energy (DoE).

***f. Cost Accounting Standards.***

(1) Under cost-reimbursement contracts, the function of cost allowability is a critical element in contract administration. For instance, the total cost of any cost-reimbursement contract is the sum of allowable direct and indirect costs allocable to the contract incurred or to be incurred. In ascertaining what constitutes a cost, any generally accepted method of determining or estimating costs that is equitable and is consistently applied [unless a required accounting standard is invoked under Cost Accounting Standards (CAS)] may be used.

(2) The factors considered by the Government in determining whether a cost is *allowable* under a contract include—

(a) The terms of the contract.

(b) Any prescriptive limits set forth in FAR Part 31, *Contract Cost Principles and Procedures*.

(c) Standards promulgated by the CAS Board, if applicable; otherwise, generally accepted accounting principals and practices appropriate to the particular circumstances.

(d) Its reasonableness and allocability.

(3) A cost is *reasonable* if, in its nature and amount, it does not exceed that which would be incurred by a prudent person in the conduct of competitive business. A cost is *allocable* if it is assignable or chargeable to one or more cost objectives on the basis of relative benefits received or other equitable relationship. Subject to this, a cost is allocable to a contract if it—

(a) Is incurred specifically for the contract.

(b) Benefits both the contract and other work and can be distributed to them in reasonable proportion to the benefits received.

(c) Is necessary to the overall operation of the business, although a direct relationship to any particular cost objective cannot be shown.

***g. Payments under cost-reimbursement contracts.*** Under cost-reimbursement contracts, the Government commits itself to making payments for *costs incurred* as work

progresses. Unlike payments under fixed-price contracts, such payments are not based on progress. These payments are not made more often than once every 2 weeks (except for small businesses) in amounts determined to be allowable. To receive payment, the contractor submits, in such form and detail as is required by the contract, an invoice or voucher supported by a statement that all claimed costs are allowable costs of performance. To receive final payment, the contractor submits a completion invoice or voucher promptly upon completion of work, but not later than 1 year from the completion date (unless the Government approves a longer period in writing).

*h. Cost contracts.* A cost contract is a cost-reimbursement contract under which the contractor receives no fee. Because of the no-fee feature, cost contracts have only limited appeal. A cost contract may be appropriate for research and development work, particularly with nonprofit educational institutions or other nonprofit organizations, and for facilities contracts.

*i. Cost-sharing contracts.* A cost-sharing contract is a cost-reimbursement contract under which the contractor receives no fee and is reimbursed only for an agreed-upon portion of its allowable costs (i.e., an agreed-upon percentage or amount of each allowable dollar). The contractor agrees to absorb its respective percentage or amount of each allowable dollar in the expectation of substantial compensating benefits. Such benefits might include an enhancement of the contractor's capability or expertise, or perhaps improvement of its competitive position in the commercial marketplace.

*j. Cost-plus-incentive-fee contracts.* A cost-plus-incentive-fee (CPIF) contract is a cost-reimbursement contract that provides for an initially negotiated fee to be adjusted later by formula based on the relationship of total allowable costs to total target costs. CPIF contracts are covered in more detail under the incentive contracts section.

*k. Cost-plus-award-fee contracts.* A cost-plus-award-fee (CPAF) contract is a cost-reimbursement contract that provides for a fee consisting of a base amount (which may be zero) fixed at inception of the contract and an award amount, based upon a judgmental evaluation by the Government, sufficient to provide motivation for excellence in contract performance. CPAF contracts are covered in more detail under the incentive contracts section.

*1. Cost-plus-fixed-fee contract.*

(1) A cost-plus-fixed-fee (CPFF) contract is a cost-reimbursement contract that provides for payment to the contractor of a negotiated fee fixed at contract award. The fixed fee does not vary with actual cost but may readjusted as a result of changes in the work to be performed under the contract. This contract type permits contracting for efforts that might otherwise present too great a risk to contractors, but it provides the contractor only a minimum incentive to control costs.

(2) CPFF contracts are designed primarily for use when the level of contract effort cannot be defined accurately. Generally, the dollars involved are significant, work specifications cannot be defined precisely, and the uncertainty of performance is so great that a firm price or an incentive arrangement cannot be anticipated at any time during the life of the contract. The Government agrees to pay the performing contractor a fixed number of dollars above the estimated cost as a fee for doing the work. The fee dollars, established as an absolute dollar amount at the outset, usually change only when the scope of the work changes.

(3) Under a CPFF contract, there is no potential to increase profits (and there is a corresponding disincentive to exert cost controls), because the fee is fixed at the outset as a function of an agreed-upon estimated cost. Underrunning the contract will improve the percentage of return in that the fee will be higher (as a percentage) than was negotiated at the outset. The fact is, however, that the amount of fee dollars, having been fixed as an absolute amount, remains the same. Similarly, while an overrun will lessen the percentage of return in that the fee will be lower (as a percentage) than was negotiated at the outset, the difference is meaningless because the dollars remain unchanged.

(4) USACE use of CPFF contracts in recent years has generally been limited to facilities criteria development and design of high-tech, first-of-a-kind facilities projects. CPFF contracts have also been used for unique construction projects of long duration.

(5) When a CPFF contract is used, the clauses Allowable Cost and Payment, must be inserted in the contract.

## **2-4. Incentive Contracts**

### ***a. General.***

(1) Incentive contracts are appropriate when a firm-fixed-price contract is unsuitable and the required A-E services can be acquired at lower cost (and, in certain instances, with improved delivery or technical performance) by relating the amount of profit or fee payable under the contract to the contractor's performance. Incentive contracts are designed to obtain specific acquisition objectives by—

(a) Establishing reasonable and attainable targets that are clearly communicated to the contractor.

(b) Including appropriate incentive arrangements designed to motivate contractor efforts that might not otherwise be emphasized and to discourage contractor inefficiency and waste.

(2) When predetermined, formula-type incentives related to technical performance or delivery are included, increases in profit are provided only for achievement that surpasses the targets, and decreases are provided to the extent that the targets are not met. The incentive increases or decreases are applied to performance targets rather than to minimum performance requirements. Cost incentives, technical performance incentives, and delivery incentives are discussed in detail in FAR 16.402, *Application of predetermined, formula-type incentives*.

(3) The two basic categories of incentive contracts are fixed-price incentive contracts and cost-reimbursement incentive contracts. Since it is usually to the Government's advantage for the contractor to assume substantial risk, fixed-price incentive contracts are preferred when contract costs and performance requirements are reasonably certain.

### ***b. Fixed-price incentive contracts.***

#### ***(1) General.***

(a) A fixed-price incentive contract is a fixed-price contract that provides for adjusting profit and establishing the final contract price by application of a formula based on the relationship of total final negotiated cost to total target cost. The final price is subject to a price ceiling, negotiated at the outset. The two forms of fixed-price

incentive contracts, firm target and successive targets, are described later in this pamphlet.

(b) A fixed-price incentive contract is appropriate when-

- A firm-fixed-price contract is not suitable.
- The nature of the services being acquired and other circumstances of the acquisition are such that the contractor's assumption of risk will provide a positive profit incentive for effective cost control and performance.
- (If the contract includes incentives relating to technical performance and/or delivery) the performance requirements provide a reasonable opportunity for the incentives to have a meaningful impact on the contractor's management of the work.

(c) A fixed-price incentive contract may be used only when a determination and findings has been executed showing that this contract type is likely to be less costly than any other type or that it is impractical to obtain A-E services of the kind or quality required without the use of this contract type (see 10 U.S.C. §§ 2306(c), 2310(b), and 2311).

(d) In fixed-price incentive contracts, billing prices are established as an interim basis for payment. These billing prices may be adjusted, within the ceiling limits, upon request of either party to the contract, when it becomes apparent that final negotiated cost will be substantially different from the target cost.

(2) ***Fixed-price incentive (firm target) contracts.***

(a) A fixed-price incentive (firm target) contract specifies the following elements, all of which are negotiated at the outset:

- A target cost.
- A target profit.
- A price ceiling (but not a profit ceiling or floor).
- A profit adjustment formula.

(b) The price ceiling is the maximum that maybe paid to the contractor, except for any adjustment under various contract clauses. When the contractor completes performance, the parties negotiate the final cost, and the final price is established by applying the formula. When the final cost is less than the target cost, application of the formula results in a final profit greater than the target profit; conversely, when final cost is more than target cost, application of the formula results in a final profit less than the target profit, or even a net loss. Because the profit varies inversely with the cost, this contract type provides a positive, calculable profit incentive for the contractor to control costs.

(c) A fixed-price incentive (firm target) contract is appropriate when the parties can negotiate at the outset a firm target cost, target profit, and profit adjustment formula that will provide a fair and reasonable incentive and a ceiling that provides for the contractor to assume an appropriate share of the risk. When the contractor assumes a considerable or major share of the risk, the target profit should reflect this responsibility.

(d) This contract type maybe used only when—

- The contractor's accounting system is adequate for providing data to support negotiation of final cost and incentive price revision.

- Adequate cost or pricing information for establishing reasonable firm targets is available at the time of initial contract negotiation.

- A determination and findings has been executed pursuant to FAR 16.403(c).

(e) The Government shall specify in the contract Schedule the target cost, target profit, and target price for each item subject to incentive price revision.

**(3) *Fixed-price incentive (accessive targets) contracts.***

(a) A fixed-price incentive (successive targets) contract specifies the following elements, all of which are negotiated at the outset:

- An initial target cost.

- An initial target profit.

- An initial profit adjustment formula to be used for establishing the firm target profit, including a ceiling and floor for the firm target profit. (Note: This

formula normally provides for a lesser degree of contractor risk than would a formula for establishing final profit and price.)

- The point at which the firm target cost and the firm target profit will be negotiated (usually before receipt of the first deliverable).

- A ceiling price that is the maximum that may be paid to the contractor, except for any adjustment under clauses providing for equitable adjustment or other revision of the contract price under stated circumstances.

(b) When the point specified in the contract is reached, the parties negotiate the firm target cost, giving consideration to cost experience under the contract and other pertinent factors. The firm target profit is established by the formula. At this point, the parties have two alternatives, as follows:

- They may negotiate a firm fixed price, using the firm target cost plus firm target profit as a guide.

- If negotiation of a firm fixed price is inappropriate, they may negotiate a formula for establishing the final price using the firm target cost and firm target profit. The final cost is then negotiated at completion, and the final profit is established by formula, as under the fixed-price incentive (firm target) contract.

(c) A fixed-price incentive (successive targets) contract is appropriate when–

- Available cost or pricing information is not sufficient to permit the negotiation of a realistic firm target cost and profit before award.

- Sufficient information is available to permit negotiation of initial targets.

- There is reasonable assurance that additional reliable information will be available at an early point in the contract performance to permit negotiation of either a firm fixed price or firm targets and a formula for establishing final profit and price that will provide a fair and reasonable incentive. (Note: This additional information is not limited to experience under the contract itself but may be drawn from other contracts for the same or similar items.)

(d) This contract type may be used only when–

- The contractor's accounting system is adequate for providing data for negotiating firm targets and a realistic profit adjustment formula, as well as later negotiation of final costs.

- Cost or pricing information adequate for establishing a reasonable firm target cost is reasonably expected to be available at an early point in contract performance.

- A determination and findings has been executed pursuant to FAR 16.403(c).

(e) The Government shall specify in the contract Schedule the initial target cost, initial target profit, and initial target price for each item subject to incentive price revision.

*c. Cost-plus-incentive-fee contracts.*

(1) The cost-plus-incentive-fee (CPIF) contract is a cost-reimbursement contract providing for the initially negotiated fee to be adjusted later by a formula based on the relationship of total allowable costs to total target costs. This contract type specifies a target cost, a target fee, minimum and maximum fees, and a fee adjustment formula. The formula provides, within limits, for increases in fee above target fee when total allowable costs are less than target costs, and decreases in fee below target fee when total allowable costs exceed target costs. This increase or decrease is intended to provide an incentive for the contractor to manage the contract effectively. When total allowable cost is greater than or less than the range of costs within which the fee-adjustment formula operates, the contractor is paid total allowable costs, plus the minimum or maximum fee.

(2) A CPIF contract, having some resemblance to a fixed-price incentive contract, is appropriate for use when it is highly probable that the required development of a large (or major) system is feasible and that its performance objectives have been established and a target cost and a fee adjustment formula can be negotiated that are likely to motivate the contractor to manage effectively. In other words, the requirement is not definitive enough for a fixed-price incentive contract, but it is clearly susceptible to a definition that permits the use of other than a CPFF contract.

(3) The fee adjustment formula should provide an incentive that will be effective over the full range of reasonably foreseeable variations from target cost. If a high maximum fee is negotiated, the contract should also provide for a low minimum fee, which may be a zero fee or—in rare cases—a negative fee. Once costs (in either direction from the target cost) fall outside the range of incentive effectiveness, the CPIF contract in effect becomes a CPFF contract; and regardless of how much is underrun (or overrun), the dollar amount of the maximum (or minimum) fee is all that will be paid.

(4) When a CPIF contract is used, the clauses *Allowable Cost and Payment*, and *Incentive Fee*, must be inserted in the contract.

***d. Cost-plus-award-fee contracts.***

(1) A cost-plus-award-fee (CPAF) contract is a cost-reimbursement contract that provides for a fee consisting of a base amount at inception of the contract and an award amount that the contractor may earn in whole or in part during performance and that is sufficient to provide motivation for excellence in such areas as quality, timeliness, technical ingenuity, and cost-effective management. Base fees generally are negotiated to reflect minimum acceptable performance in order to provide a greater award fee pool, thus providing a maximum incentive to improve performance. The amount of the award fee to be paid is determined by the Government's judgmental evaluation of the contractor's performance in terms of the criteria stated in the contract. This determination is made unilaterally by the Government and is not subject to the *Disputes* clause.

(2) The CPAF contract is designed to encourage effective work, to control cost, and to improve the timeliness and quality of performance. It is a means of applying incentives in contracts that involve varying efforts and activities, not all of which are susceptible of finite measurement. The CPAF contract is suitable for use when—

(a) The work to be performed is such that it is neither feasible nor effective to devise predetermined objective incentive targets applicable to cost, technical performance, or schedule.

(b) The likelihood of meeting acquisition objectives will be enhanced by using a contract that effectively motivates the contractor toward exceptional performance and provides the Government with the flexibility to evaluate both actual performance and the conditions under which it was achieved.

(c) Any additional administrative effort and cost required to monitor and evaluate performance are justified by the expected benefits.

(3) The number of evaluation criteria and the requirements they represent will differ widely among contracts. The criteria and rating plan should motivate the contractor to improve performance in the areas rated, but not at the expense of at least minimum acceptable performance in all other areas.

(4) Under CPAF contracts, the contractor should be evaluated at stated intervals during performance, so that the contractor will be periodically informed of the quality of its performance and the areas in which improvement is expected. Award fees are paid periodically after any award fee earned has been established and determined for each performance evaluation period under the contract's performance plan. The contractor, in virtually all cases, is provided with an opportunity to comment on any periodic evaluation of its performance. Award fees may be paid in whole, in part, or not at all, depending on the assessment of contractor performance.

(5) CPAF contracts have been widely used to procure technical; administrative; Government-owned, Contractor-operated (GOCO); and housekeeping services for major installations. CPAF contracts are also being used for research and development efforts where technical uncertainties or anticipated changes do not permit the structuring of a CPIF contract.

(6) When a CPAF contract is used, in addition to the standard clauses listed in Appendix A, the clause *Allowable Cost and Payment*, must be inserted in the contract.

## **2-5. Indefinite-Delivery Contracts**

### ***a. General.***

(1) There are three types of indefinite-delivery contracts: definite-quantity contracts, requirements contracts, and indefinite-quantity contracts. The appropriate type of indefinite-delivery contract may be used when the exact times and/or quantities of future deliveries or performance are not known at the time of contract award.

(2) The various types of indefinite-delivery contracts offer the following advantages:

(a) Indefinite-quantity contracts and requirements contracts permit flexibility in both quantities and delivery scheduling and ordering of services after requirements materialize.

(b) Indefinite-quantity contracts limit the Government's obligation to the minimum quantity specified in the contract.

(c) Indefinite-delivery contracts permit faster delivery of services because procurement lead time is virtually eliminated.

(3) Indefinite-delivery contracts may provide for firm fixed prices, fixed prices with economic price adjustment, fixed prices with prospective redetermination, cost reimbursement, or prices based on catalog or market prices.

(4) The AFARS limits the use of indefinite-delivery contracts for A-E services as follows:

(a) Indefinite-delivery contracts may be used only where multiple small A-E efforts are anticipated at a particular activity or installation. Normally, these contracts will be awarded for a period of 1 year and a new selection will be made for any requirement beyond that term. However, they may be extended if the contracting officer determines that there is an anticipated need for similar services beyond the first contract period.

(b) No individual delivery order may exceed \$150,000, except that this threshold may be waived by the PARC.

(c) The total of all orders under an individual contract may not exceed \$750,000. An additional ordering ceiling, not to exceed \$750,000, may be applied to a second annual period where appropriate and authorized by the approving official. (This threshold may be waived by the PARC.)

(d) The scope of such contracts should be made as specific and non-duplicative as possible to reflect the approved requirements of specified installations or USACE activities rather than a broad category of A-E efforts.

(e) The local contracting office (ordering officer) supporting the installation shall only be authorized under the indefinite-delivery contract to write orders under the scope and terms of the contract and shall not be made responsible for actions required under FAR 36.608 and 36.609, which shall remain the responsibility of the cognizant USACE contracting officer.

(5) When an indefinite-delivery contract is used, in addition to the standard clauses listed in Appendix A, the appropriate clause presented in Table 2-1 shall be inserted in the contract.

***b. Definite-quantity contracts.***

(1) A definite-quantity contract provides for delivery of a definite quantity of specific supplies or services for a fixed period, with deliveries or performance to be scheduled at designated locations upon order.

(2) A definite-quantity contract may be used when it can be determined in advance that a definite quantity of supplies or services will be required during the

**Table 2-1**  
**Contract clauses for indefinite-delivery contracts**

Contract clause	Contract type		
	Definite-quality	Requirements	Indefinite-quality
FAR 52.216-18, <i>Ordering</i>	•	•	•
FAR 52.216-19, <i>Delivery-Order Limitations</i>	•	•	•
FAR 52.216-20, <i>Definite Quantity</i>	•		
FAR 52.216-21, <i>Requirements</i>		•	
FAR 52.216-22, <i>Indefinite-Quality</i>			•

contract period and the supplies or services are regularly available or will be available after a short lead time.

**c. *Requirements contracts.***

(1) A requirements contract provides for filling all actual purchase requirements of designated Government activities for specific supplies or services during a specified contract period, with performance to be scheduled by placing orders with the contractor.

(2) When using a requirements contract, the Government should state a realistic estimated total quantity in the solicitation and resulting contract. This estimate is not a representation that the estimated quantity will be required or ordered, or that conditions affecting requirements will be stable or normal. The Government should base the estimate on the most current information available.

(3) Under a requirements contract, the Government should state, if feasible, the maximum limit of the contractor's obligation to perform and the Government's obligation to order. The contract may also specify maximum or minimum quantities that the Government may order under each individual order and the maximum that it may order during a specified period of time.

(4) A requirements contract may be used when the Government anticipates recurring requirements but cannot predetermine the precise quantities of supplies or

services that designated Government activities will need during a definite period. This type of contract would be appropriate for professional engineering inspection services where the contract would have established unit prices for soil compaction tests, concrete strength tests, etc. Funds are obligated by each delivery order, not by the contract itself.

*d. Indefinite-quantity contracts.*

(1) An indefinite-quantity contract provides for an indefinite quantity, within stated limits, of specific supplies or services to be furnished during a fixed period, with performance to be scheduled by placing orders with the contractor.

(2) The contract shall require the Government to order and the contractor to furnish at least a stated minimum quantity of supplies or services and, if and as ordered, the contractor to furnish any additional quantities, not to exceed a stated maximum. The maximum quantity should be established by the Government from records of previous requirements or by other means; the maximum quantity should be realistic and based on the most current information available.

(3) To ensure that the contract is binding, the minimum quantity must be more than a nominal quantity but should not exceed the amount that the Government is fairly certain to order. The contract may also specify maximum or minimum quantities that the Government may order under each delivery order and the maximum that it may order during a specific period of time.

(4) An indefinite-quantity contract may be used when—

(a) The Government cannot predetermine, above a specified minimum, the precise quantities of supplies or services that will be required during the contract period.

(b) It is advisable for the Government to commit itself for more than a minimum quantity.

(5) An indefinite-quantity contract should only be used when a recurring need is anticipated. Funds for other than the stated minimum quantity are obligated by each delivery order, not by the contract itself.

## **2-6. Time-and-Materials, Labor-Hour, and Letter Contracts**

### ***a. Time-and-materials contracts.***

(1) A time-and-materials contract provides for acquiring services on the basis of direct labor hours at specified fixed hourly rates that include wages; overhead; general and administrative expenses; and profit and materials at cost, including, if appropriate, material handling costs as part of material costs.

(2) A time-and-materials contract may be used only when it is not possible at the time of placing the contract to estimate accurately the extent or duration of the work or to anticipate costs with any reasonable degree of confidence.

(3) A time-and-materials contract may be used only after the contracting officer executes a determination and findings that no other contract type is suitable and only if the contract includes a ceiling price that the contractor exceeds at its own risk. The contracting officer shall document the contract file to justify the reasons for and amount of any subsequent change in the ceiling price.

***b. Labor-hour contracts.*** A labor-hour contract is a variation of the time-and-materials contract, differing only in that materials are not supplied by the contractor.

### ***c. Letter contracts.***

(1) A letter contract is a written preliminary contractual instrument that authorizes the contractor to begin performing services immediately.

(2) A letter contract may be used when the Government's interests demand that the contractor be given a binding commitment so that work can start immediately and negotiating a definitive contract is not possible in sufficient time to meet the requirement. However, a letter contract should be as complete and definite as feasible under the circumstances.

(3) Each letter contract must, as required by the clause at FAR clause, *Contract Definitization*, contain a negotiated definitization schedule including—

(a) Dates for submission of the contractor's price proposal, required cost or pricing data, and, if required, make-or-buy and subcontracting plans.

(b) A date for the start of negotiations.

(c) A target date for definitization, which shall be the earliest practicable date for definitization.

(4) The Schedule will provide for definitization of the contract within 180 days after the date of the letter contract or before completion of 40 percent of the work to be performed, whichever occurs first. However, the contracting officer may, in extreme cases and in accordance with USACE procedures, authorize an additional period. If, after exhausting all reasonable efforts, the contracting officer and the contractor cannot negotiate a definitive contract because of failure to reach agreement as to price or fee, the FAR requires the contractor to proceed with the work and provides that the contracting officer may, with approval of the PARC, determine a reasonable price in accordance with FAR Subpart 15.8 and Part 31, subject to appeal as provided in the *Disputes* clause.

(5) Except in an emergency, a letter contract may be used only after the PARC or a designee executes a determination and findings that no other contract is suitable. Letter contracts shall not—

(a) Commit the Government to a definitive contract in excess of the funds available at the time the letter contract is executed.

(b) Be amended to satisfy a new requirement, unless that requirement is inseparable from the existing letter contract. Any such amendment is subject to the same requirements and limitations as a new letter contract.

(6) The contracting officer must include in each letter contract the FAR clauses required for the type of definitive contract contemplated and any additional clauses known to be appropriate for it. In addition, the following FAR clauses be inserted in letter contracts:

(a) *Execution and Commencement of Work.*

(b) *Limitation of Government Liability.*

(c) *Contract Definitization.*

(7) The contracting officer must also insert the clause *Payments of Allowable Costs Before Definitization*, in letter contracts if a cost-reimbursement definitive contract is contemplated.

(8) Appendix B contains sample formats for letter contracts.

## CHAPTER 3

### SELECTING CONTRACT TYPE

#### 3-1. General

Many factors should be considered when selecting and/or negotiating the A-E contract type. They include the following:

*a . Price analysis.* Price analysis, with or without competition, may provide a basis for selecting the contract type. The degree to which price analysis can provide a realistic pricing standard should be carefully considered, even when there may not be full and open competition.

*b. Cost analysis.* In the absence of effective price competition and if price analysis is not sufficient, the contractor's proposal (cost estimate) and the Government estimate provide the bases for negotiating contract pricing arrangements.

*c. Type and complexity of the requirement.* Complex requirements, particularly those unique to the Government, usually result in greater risk assumption by the Government. This is especially true for complex research and development contracts, when performance uncertainties or the likelihood of changes make it difficult to estimate performance costs in advance.

*d. Urgency of the requirement.* If urgency is a primary factor, the Government may choose to assume a greater proportion of the risk or it may offer incentives to ensure timely contract performance. When the customer's or USACE's needs dictate an immediate contractor response to environmental or other problems requiring professional or technical work, contracts must contain advance agreements to meet those needs.

*e. Period of performance.* In times of economic uncertainty, contracts extending over a relatively long period may require economic price adjustment terms.

*f. Adequacy of the contractors accounting system.* Before agreeing on a contract type other than firm fixed price, it should be determined that the contractor's accounting system will permit timely development of all necessary cost data in the form required by the proposed contract type. This factor may be critical when the contract

type requires price revision while performance is in progress, or when a cost-reimbursement contract is being considered and all current or past experience with the contractor has been on a fixed-price basis.

**g. *Concurrent contracts.*** If performance under the proposed contract involves concurrent operations under other contracts, the impact of those contracts, including their pricing arrangements, should be considered.

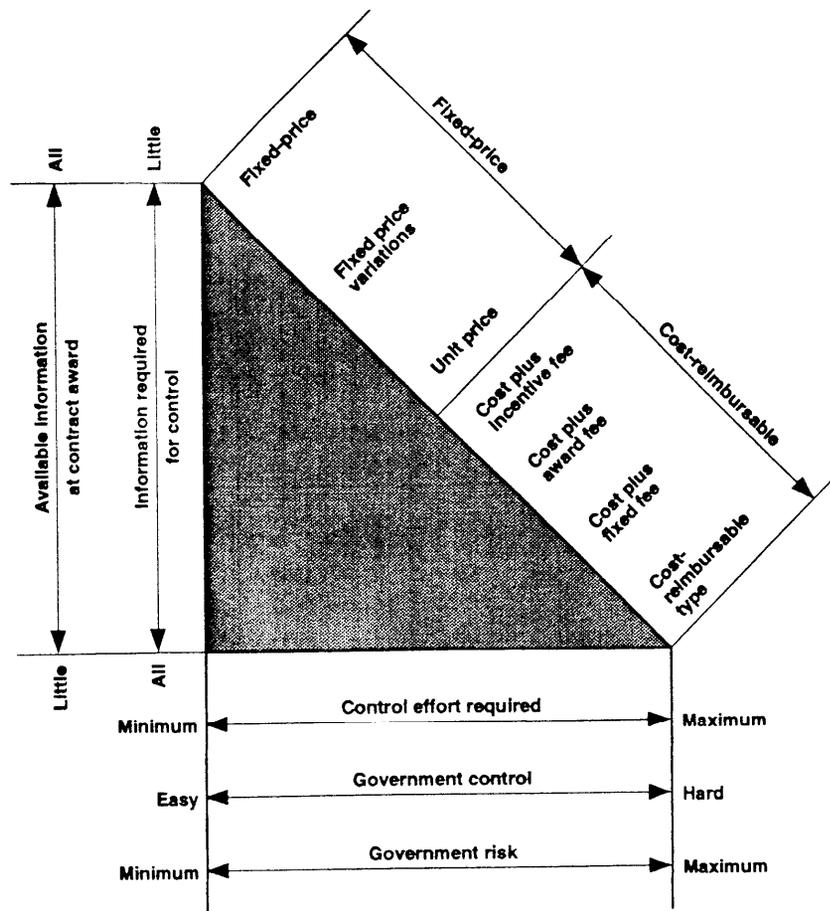
**h. *Extent and nature of proposed subcontracting.*** If the contractor proposes extensive subcontracting, a contract type reflecting the actual risks to the prime contractor should be selected.

### **3-2. Contract Selection Considerations**

**a.** The primary considerations in contract selection is uncertainty, since risk (the other major factor cited above) is itself driven, in large part, by uncertainty. Risk can be associated with many aspects of a project such as time, personnel, cost, and work definition. Figure 3-1 shows the relationship of uncertainty and risk to various contract types. Notice that, as a rule, FFP contracts incur the least financial risk to the Government, while cost-reimbursement contracts incur the most. This is because in a fixed-price contract, financial risks with respect to the cost of the work are precisely defined. In a cost-reimbursement contract, this precise defining of the costs does not occur.

**b.** The selection of a contract type for a particular project is typically the result of an integrated effort involving two groups of people: those having technical expertise regarding the scope of the work and those familiar with the various types of contracts available to do the work. Expertise and knowledge from both those groups is essential in order to successfully address two major drivers of contract selection—uncertainty and risk. Issues pertaining to uncertainty are considered primarily by technical people who have the knowledge required to address specific project questions. Risk issues deal with controlling the costs associated with work to be done and are addressed by contracts people who have expertise in selecting contracts.

**c.** Environmental contracts now involve a third major consideration: the possible need for rapid response. This requirement dictates that advance agreements be in contracts in order to remove the necessity for time-consuming negotiations during critical phases of contract execution.



Source: "Impact on Risk Allocation and Equity in Construction Contracts," CTI Source Document 44, March 1989, The University of Texas at Austin, Austin, Texas, November 1988.

Figure 3-1. Factors Influencing Contract Choice

### 3-3. Risks Associated with Fixed-Price Contracts

With a fixed-price contract, the only risk to the Government is the work definition. The limitation of Government risk in fixed-price contracts is the reason for their being the preferred contract type. Unfortunately, the scope-of-work definition is sometimes poorly developed, resulting in numerous changes, increases in cost (including personnel costs), and delays. This highlights the fact that if the work definition, scope, design, and/or specifications are not sufficiently detailed, or are not presented clearly, a fixed-price contract is not the appropriate type. The work definition is a time-consuming task and requires the ability to define in writing the contract deliverables to be accomplished.

### 3-4. Risks Associated with Cost-Reimbursement Contracts

*a. General.* When considering a cost-reimbursement contract type, there are four major areas of risk to be considered: time, Government personnel, cost, and work

definition. The reasons for taking risks in these areas must be evaluated and prioritized so that the tradeoffs that are necessary can be used in selecting the contract type.

**b. Time.** In evaluating the time risk, the project manager must consider the time required to obtain approval to use a cost-reimbursement contract. Most offices where initial selection of contract type is performed do not have the authority to approve the use of a cost-reimbursement contract. The request to use this type of contract will generally require a written detailed justification and a determination and findings. Depending upon where the authority is maintained, it could take 30 to 90 days to obtain approval. This approval is a critical-path activity. On the other hand, cost-reimbursement contracting lends itself to fast-tracking or phased construction, thus greatly reducing the project duration, once approval has been gained.

**c. Government personnel.** The Government personnel risk factor is difficult to quantify during the contract-type decision process. Administration of a cost-reimbursement contract can have a significant adverse impact on the administering office. Since the Government is assuming the cost risks associated with the contract, it must be prepared to assume an increased burden in administering the contract to minimize those risks. The activity could result in a substantial personnel drain on the administering office, depending upon the size and duration of the contract.

**d. Cost.** The cost risk factor in a cost-reimbursement contract is also difficult to quantify during the contract-type decision process. In actuality, the total cost of a cost-reimbursement contract is not known until the final audit of the contractor's records. The cost of awarding and administering the contract must also be considered, as noted above. The identification of the personnel requirements to administer a cost-reimbursement contract is a major element in determining the Government's cost. Also, there are cost risks related to the work definition. When the work definition is poor, the change orders will be many and large, with a corresponding increase in the cost risk factor.

**e. Work definition.** Work definition is a major factor affecting other risks. With good work definition, the time factor can be estimated, because it will be possible to identify which factors will require strenuous management to stay within the estimated

cost. Poor work definition could result in a contract that will require a full-time project manager or contract administrator. Poor work definition generally leads to contract changes and thus greater cost.

FOR THE COMMANDER:



WILLIAM D. BROWN  
Colonel, Corps of Engineers  
Chief of Staff

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