

Occupational Safety Competency 4.4

Competency 4.4 Occupational safety personnel shall demonstrate a familiarity level knowledge of Department of Energy (DOE) contract management and administration sufficient to appraise, assist, or direct contractor organizations in the area of occupational safety.

1. Supporting Knowledge and Skills

- a. Discuss the key elements of the contractual relationship between the Department and the contractor and the process for preparing cost estimates and budgets.
- b. Describe the role of the Department's occupational safety professional with respect to the evaluation of contractor occupational safety programs for the cost-plus award fee process.
- c. Describe the responsibilities of a Department occupational safety professional associated with contractor compliance with the Price Anderson Amendments Act.
- d. Using actual or hypothetical data for an occupational safety program, discuss the program's budget, schedule, appropriateness and impact on occupational health protection.
- e. Identify appropriate contract mechanisms and channels that must be employed or considered when communicating with, or directing Department contractors (e.g., describe appropriate procedures and considerations for issuing a stop work order to a Department contractor.)

2. Self-Study Activities (Corresponding to the Intent of the Above Competency)

Below are two web sites containing many of the references you may need.

Web Sites		
Organization	Site Location	Notes
Department of Energy	http://wastenot.inel.gov/cted/stdguido.html	DOE Standards, Guides, and Orders
OSHA	http://www.osha-slc.gov/	OSHA documents and search engine
U.S. House of Representatives	http://law.house.gov/cfr.htm	Searchable Code of Federal Regulations

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Review DOE 5700.2D, *Cost Estimating, Analysis, and Standardization*.

Review DOE N 4700.5, *Project Control System Guidelines*.

Review DOE O 130.2, *Budget Formulation*.

Review Sections 901.603-71 of the Department of Energy Acquisition Regulation (DEAR), Code of Federal Regulations (CFR), Title 48, Chapter 9.

EXERCISE 4.4-A Discuss the key elements of the contractual relationship between the Department and the contractor.

EXERCISE 4.4-B DOE Order 5700.2D, *Cost Estimating, Analysis, and Standardization*, provides several different methods for preparing cost estimates. Referring to the Order, describe them.

Read Sections 901.603-71 of DEAR, 48 CFR, Chapter 9.

EXERCISE 4.4-C Explain what occupational safety personnel (other than Contracting Officer's representatives) are supposed to do regarding the evaluation of contractor occupational safety programs for the cost-plus-award fee process.

Read the information about the Price-Anderson Act presented in the Summary section of this study guide. This information was extracted from the *Federal Register* and Public Law 100-408, Price-Anderson Amendments Act.

Scan 10 CFR 830, *Nuclear Safety Management*.

EXERCISE 4.4-D Very broadly, what is the purpose of the Price-Anderson (Amendments) Act?

EXERCISE 4.4-E What are the implications of the Price-Anderson Act for 1) the DOE professional and 2) the contractor?

EXERCISE 4.4-F What is the impact of the Act upon the award-fee process?

Review DOE Order 4700.1, *Project Management System*. This Order will be phased out upon the incorporation of its contents into contracts or other agreements. It is presented here because its general content remains applicable.

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Scan DOE O 430.1, *Life-Cycle Asset Management*, Section 6, Requirements.

- EXERCISE 4.4-G Prepare a plan, budget, and schedule encompassing all the DOE standard activities for the following hypothetical project.
- In so doing, complete the second column of the attached checklist with your supervisor to determine what tasks you will need to describe and document
 - As you complete the tasks, fill out the column, “Complete (Y/N) & Comments”
 - Present your entire project package to your supervisor or site subject matter expert for evaluation

Project: As the assigned project manager for a subactivity of the following strategic system (i.e., **Build or Convert Facilities and Equipment to Reprocess Specific High-Level Radioactive Waste for Bio-Medical Application**); design, procure, install, check out, operate, and maintain an uninterruptible power supply (UPS).

UPS PROJECT - COMPLETION CHECKLIST (Example)			
DOE Standard Project Activities	UPS Project Tasks	Complete (Y/N) & Comments	Supervisor OK
Plan			
System design			
Work scope			
WBS			
Resources			
Budget			
Schedule			
Acquisition-Procurement			
Approval			
Bid spec.			
Bid			
Review bids			

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UPS PROJECT - COMPLETION CHECKLIST (Example)			
DOE Standard Project Activities	UPS Project Tasks	Complete (Y/N) & Comments	Supervisor OK
Accept			
Purchase			
Receipt			
Installation, checkout, & acceptance testing			
Preparation-revision of ops. and maint. procedures, and drawings			
Preparation of trng. materials			
Staff training			
Execution			
Operation, maintenance, & surveillance			
Update of design docs.			
Control			
Configuration management			
QA			
Project mgt.			
Reporting			

Read DOE N 4700.5, *Project Control System Guidelines*, Attachment 2, Project Control System Guidelines.

Scan DEAR, Part 970, *DOE Management and Operating Contracts*.

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Read DEAR, Subparts 970.49, *Termination of Contracts*, and 970.5204-2, *Safety and Health*.

EXERCISE 4.4-H Referring to DEAR, Subpart 970.5204-2, *Safety and Health*, what are the justifiable reasons for DOE to terminate a contract?

Review DOE Order 5480.19, *Conduct of Operations Requirements for DOE Facilities*, paying particular attention to the Purpose, Scope, Policy, and Requirements sections of the Order.

EXERCISE 4.4-I Referring to DOE Order 5480.19, *Conduct of Operations Requirements for DOE Facilities*, describe how and why you (as a Contracting Officer's technical representative or as project manager) would issue a stop work order to the contractor.

3. Summary

DOE Order 5700.2D, *Cost Estimating, Analysis, and Standardization*, defines cost estimate as:

“. . . a statement of costs estimated to be incurred in the conduct of an activity such as a program, or the acquisition of a project or system.”

DOE personnel may be asked to participate in the contractor evaluation assessments or reviews or to supply input to those actually performing the review. The items that need to be reviewed from the line management perspective need to be for competitive sources are/were solicited, evaluated, and selected; standards are prescribed and met; performance or delivery is timely; estimated costs and fees are reasonable; and files are documented to substantiate the judgments, decisions, and actions taken.

Passage of the Price-Anderson Act in 1957, which amended the Atomic Energy Act of 1954, was intended primarily to assist the fledgling commercial nuclear industry, which was otherwise unable to insure itself due to its hazardous nature. Congress included government contractors under the legislation's coverage to provide the public with full protection for nuclear incidents, whether they occurred at government-owned facilities or at commercial nuclear power plants. Although Congress made indemnification of M&O contractors optional in the original Price-Anderson Act, the Atomic Energy Commission (AEC) routinely protected its contractors against all liability resulting from nuclear incidents. Additionally, by extending the role of government insurer into the nonnuclear area, the AEC provided contractual protection for all other activities at government-owned facilities.

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The Price-Anderson Amendments Act of 1988 added Section 234A to the Atomic Energy Act to provide DOE with authority to assess civil penalties for violations of rules, regulations, or orders relating to nuclear safety by contractors and subcontractors who are indemnified by the Department, pursuant to Section 170 of the Atomic Energy Act. Any risks that are indemnified by the Government will not be considered as risk to the contractor. The net result of this Act is to provide for greater accountability of contractors, subcontractors, and suppliers in the performance of their duties under contract with DOE for the indemnified nuclear activities. The availability and careful exercise of this authority by DOE management and facility representatives can reduce the likelihood of serious nuclear incidents. For the contractor, there are opportunities as well to identify improvements to existing operations, facilities, and modifications in practices that can improve the health and safety of staff, the public, and the environment. To this end, the DOE professional:

- a. Oversees and provides direction to the contractor for the preparation of implementation plans in response to the new rules
- b. Monitors the contractor's adherence to the rules
- c. Brings potential non-compliances to supervisor or PAAA Coordinator
- d. Assists DOE HQ in determining contractor's liability and penalty (civil and/or criminal) for a violation

The contractor:

- a. Is required to prepare implementation plans for the new rules
- b. Is civilly and criminally liable for failing to adhere to the rules
- c. Is directly affected by its performance

Project management is a management approach in which authority and responsibility for execution are vested in a single individual. This approach provides focus on the planning, organization, direction, and control of all activities within the project. The project management plan is the document that sets forth the plans, organization, and systems that those responsible for managing the project shall utilize.

The general areas of project performance monitored by the contractor and DOE are:

- Funds management
- Accounting
- Work authorization
- Performance analysis
- Reporting

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The types of reporting mechanisms to be used by the contractor in reporting project performance to its own management and to DOE include the following:

1. Narrative status reports
2. Schedule status reports
3. Cost status reports
4. Labor status reports
5. Problem reports
6. Baseline change status reports
7. Development of predetermined thresholds that will trigger problem reports
8. Identification and reporting of “at risk” areas
9. Trend charts

The major responsibilities of the project manager are to:

1. Identify the applicability of the specific control guidelines for the compliance reviews and participate in the review process.
2. Prepare a project management plan.
Specify the frequency of reporting and establish variance analysis thresholds.
4. Develop project-specific procedures for use of contingency.
5. Provide written comments or findings to the contractor for clearly established management action and resolution.

4. Exercise Solutions

EXERCISE 4.4-A Discuss the key elements of the contractual relationship between the Department and the contractor

ANSWER 4.4-A DOE personnel who use the contracting process to accomplish their programs must support the contracting officer in ensuring that:

- Competitive sources are solicited, evaluated, and selected
- Quality standards are prescribed and met
- Performance or delivery is timely
- Prices, estimated costs, and fees are reasonable
- Files are documented to substantiate the judgements, decisions, and actions taken

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EXERCISE 4.4-B DOE Order 5700.2D, *Cost Estimating, Analysis, and Standardization*, provides several different methods for preparing cost estimates. Referring to the Order, describe them.

ANSWER 4.4-B

Cost Estimate Technique	Description
Bottoms-Up	“Generally, work statement and set of drawings or specifications are used to ‘takeoff’ material quantities required . . . in accomplishing a given operation or producing an equipment component. From these quantities, direct labor, equipment, and overhead costs are derived and added thereto.” (DOE Order 5700.2D, Attachment 1, 1)
Specific Analogy	These use the known cost of an item used in a prior system to estimate the cost of a similar item in the new system. Adjustments are then made to account for recognized differences in the two systems (i.e., design, complexity of performance, etc.).
Parametric	This requires historical databases on similar systems and uses statistical analysis to find correlations between the cost drivers and other system parameters.
Cost Review and Update	Previous estimates of the same project are examined for internal logic, completeness of scope, etc.
Trend Analysis	Actual costs of work performed are compared to the original projected costs and a contractor efficiency index is derived. The index is then used to predict the cost of work not yet completed.
Expert Opinion	Specialists are consulted reiteratively until a consensus cost estimate is established. This is used in the absence of other data or techniques.

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EXERCISE 4.4-C Explain what occupational safety personnel (other than Contracting Officer's representatives) are supposed to do regarding the evaluation of contractor occupational safety programs for the cost-plus-award fee process.

ANSWER 4.4-C Program personnel who use the contracting process to accomplish their programs must support the contracting officer in ensuring that:

- Competitive sources are solicited, evaluated, and selected
- Quality standards are prescribed and met
- Performance or delivery is timely
- Prices, estimated costs, and fees are reasonable
- Files are documented to substantiate the judgements, decisions, and actions taken

EXERCISE 4.4-D Very broadly, what is the purpose of the Price-Anderson (Amendments) Act?

ANSWER 4.4-D To amend the Price-Anderson provisions of the Atomic Energy Act of 1954 to extend and improve the procedures for liability and indemnification for nuclear incidents, as well as contractor accountability.

EXERCISE 4.4-E What are the implications of the Price-Anderson Act for 1) the DOE professional and 2) the contractor?

ANSWER 4.4-E

1. a. Oversees and provides direction to the contractor for the preparation of implementation plans in response to the new rules
b. Monitors the contractor's adherence to the rules
c. Brings potential non-compliances to supervisor or PAAA Coordinator
d. Assists DOE HQ in determining contractor's liability and penalty (civil and/or criminal) for a violation
2. a. Contractors are required to prepare implementation plans for the new rules.
b. Contractors are civilly and criminally liable for failing to adhere to the rules.

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EXERCISE 4.4-F What is the impact of the Act upon the award-fee process?

ANSWER 4.4-F Noncompliance and violations will likely be factored into the evaluation of contractor performance.

EXERCISE 4.4-G Prepare a plan, budget, and schedule encompassing all the DOE standard activities for the following hypothetical project.

- In so doing, complete the second column of the attached checklist with your supervisor to determine what tasks you will need to describe and document
- As you complete the tasks, fill out the column, “Complete (Y/N) & Comments”
- Present your entire project package to your supervisor or site subject matter expert for evaluation

ANSWER 4.4-G Solutions are dependent upon the initial data used. Review your completed checklist with your supervisor or site subject matter expert.

EXERCISE 4.4-H Referring to FAR, Amendment 21, Subpart 970.5204-2, *Safety and Health*, what are the justifiable reasons for DOE to terminate a contract?

ANSWER 4.4-H With regard to the contractor’s taking all reasonable precautions to protect the safety and health of employees and of members of the public, in the event that the contractor fails to comply with DOE health and safety regulations, the contracting officer may, without prejudice . . . , issue an order stopping all or any part of the work.

Other reasons for termination of a contractor’s contract include:

- Nonperformance
- Conflict of interest
- Failure to abide by the substance abuse policies and regulations
- Fraud or other criminal conduct
- Failure to abide by all other FARs

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EXERCISE 4.4-I Referring to DOE Order 5480.19, *Conduct of Operations Requirements for DOE Facilities*, describe how and why you (as a Contracting Officer's technical representative or as project manager) would issue a stop work order to the contractor.

ANSWER 4.4-I With regard to the contractor's taking all reasonable precautions to protect the safety and health of employees and of members of the public, in the event that the contractor fails to comply with DOE health and safety regulations, the contracting officer may, without prejudice . . . , issue an order stopping all or any part of the work.