

DOE 1360.8A
5-18-92

THIS PAGE MUST BE KEPT WITH DOE 1360.8A. ANALYSES OF BENEFITS
AND COSTS FOR INFORMATION TECHNOLOGY RESOURCES INITIATIVES.

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TECHNOLOGY RESOURCES INITIATIVES. HAS REVISED DOE 1360.8 TO
REFLECT ORGANIZATIONAL TITLE AND ROUTING SYMBOL EDITORIAL
REVISIONS REWIRED BY SEN-6. NO SUBSTANTIVE CHANGES HAVE
BEEN MADE. DUE TO THE NUMBER OF PAGES AFFECTED BY THE
REVISIONS. THE ORDER HAS BEEN ISSUED AS A REVISION.

U.S. Department of Energy
Washington, D.C.

ORDER

DOE 1360.8A
5-18-92

SUBJECT: ANALYSES OF BENEFITS AND COSTS FOR INFORMATION
TECHNOLOGY RESOURCES INITIATIVES

1. PURPOSE. To establish policies, responsibilities and procedures regarding the:
 - a. Use of analyses of benefits and costs (ABC) as a tool to assist in the decision-making process for evaluating alternatives for the acquisition or development of information technology resources initiatives; and
 - b. Selection of the most cost-effective alternative which meets the goals, missions, and/or objectives of the Department.
2. CANCELLATION. DOE 1360.8, ANALYSES OF BENEFITS AND COSTS FOR INFORMATION TECHNOLOGY RESOURCES INITIATIVES, of 1-12-90.
3. SCOPE. The provisions Of this Order apply to all Departmental Elements, Heads of Field Elements (the senior ranking DOE official at a DOE office location), and management and operating contractors as provided by law and/or contract as implemented through the appropriate contracting officer.
4. EXCLUSIONS. At the discretion of each site manager, certain information technology resources initiatives may be exempt from the site's ABC Program. The rationale for such exemptions will be included in the policies and procedures that describe each site's ABC program. Examples of information technology resources initiatives exempted from coverage are:
 - a. Information technology resources initiatives that are integrally embedded within the instrumentation associated with an experiment or other application. An example of this is information technology resources initiatives embedded within a weapons system.
 - b. Information technology resources initiatives that are not integrally embedded but are acquired as part of a larger noninformation technology resources initiative turnkey system provided under one contract and in which the selection or supplier chosen is not at the discretion of the Department or its management and operating contractors. Examples of this are information technology resources initiatives acquired as part of a fire alarm system, other physical security systems, or environmental monitoring systems.

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All Departmental Elements

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Office of Information
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- c. Information technology resources initiatives which are acquired and used as an integral part of the power transmission systems of the power marketing administrations, including the power system control computers and operational telecommunications systems.
- d. Automated energy information systems under the auspices of the Energy Information Administration.

5. REFERENCES.

- a. Office of Management and Budget (OMB) Circular No. A-n, 'Preparation and Submission of Budget Estimates,' as amended annually by a transmittal memorandum, which provides instructions and guidance to federal agencies on the preparation and submission of annual budgets and associated material. The last several versions of this Circular have contained guidance on the submission of ABC's in support of major information technology initiatives contained in agency budget requests.
- b. OMB Circular No. A-94, "Discount Rates to be Used in Evaluating Time-Distributed Costs and Benefits," which prescribes a standard discount rate to be used in evaluating the measurable costs and/or benefits of programs or projects when they are distributed over time.
- c. National Institute of Standards and Technology (formerly National Bureau of Standards) Federal Information Processing Standards Publication No. 64, "Guidelines for Documentation of Computer Programs and Automated Data Systems for the Initiation Phase," Section 4.3, which provides examples of the formats for presenting ABC results.
- d. Department of Energy ABC Guidelines: "A Manager's Guide to Analysis of Benefits and Costs," of 6-88, and "An Analyst's Handbook for Analysis of Benefits and Costs," of 6-88. The former describes the usefulness of the ABC's in the information technology resources management decision-making process, and the latter provides information on how to conduct such analyses and display the results for management decision-making.
- e. DOE 1330.1C, COMPUTER SOFTWARE MANAGEMENT, of 1-12-90, which establishes policy and responsibilities for computer software management.
- f. DOE 1360.1A, ACQUISITION AND MANAGEMENT OF COMPUTING RESOURCES, of 5-30-86, which establishes Departmental policies and procedures for the acquisition and management of computing resources.
- g. DOE 1360.2A, UNCLASSIFIED COMPUTER SECURITY PROGRAM, of 5-20-88, which establishes requirements, policies, responsibilities, and procedures for developing, implementing, and sustaining a DOE unclassified computer security program.

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- h. DOE 5300.1B, TELECOMMUNICATIONS, of 12-2-88, which establishes policies, responsibilities, and guidance for the planning, acquisition, coordination, management, review, engineering, and use of telecommunications services.

6. DEFINITIONS.

- a. Analysis of Benefits and Costs is a term used to describe an economic analysis technique used to help managers make resource decisions by comparing the relative worth of proposed projects or investments when there is more than one way to satisfy an objective. The ABC process assists in determining the various alternatives for accomplishing an information technology resources initiative and choosing the most cost-effective alternative which meets the organization's missions or goals. ABC's are also commonly referred to as Benefit-Cost, Cost/Benefit, Economic, or Investment Analysis.
- b. Information System is a set of management procedures, operations, computer software and hardware, and functions devoted to the generation, assembly, utilization, storage, retrieval, and dissemination of data and information in order to facilitate the flow of information from its source to its user(s) and to provide information for management decision-making.
- c. Information Technology Resources Initiative is either an information technology resources acquisition (i.e., a computing resource or telecommunications item); or the acquisition, development, or modification of an automated IS. An information technology resources initiative may also be any combination of the above.

7. POLICY.

- a. ABC's shall be used as tools, as appropriate, to aid management and operating contractors or DOE Headquarters and field elements in making decisions regarding the acquisition or development of information technology resources initiatives. Organizations shall consider the reasonable alternatives for the acquisition or development of information technology resources initiatives and select the most cost-effective alternative consistent with the organization's goals or missions and the objectives or requirements of a particular information technology resources initiative.
- b. ABC's shall be applied, as appropriate, in the risk assessment process to determine the most cost-effective application of protection measures in the implementation of the unclassified computer security program.
- c. Each DOE and DOE management and operating contractor site shall establish an effective ABC program consistent with good management practices, integrated into existing information technology resources

initiative decision-making processes, and tailored to their specific site requirements.

- d. ABC's should be conducted at a level of detail commensurate with the size of the project and other considerations, including the cost of the project and the importance of the proposed initiative to the accomplishment of the Departmental missions, objectives, and goals.
- e. Departmental ABC guideline documents (page 2, paragraph 5d) are recommended for use by organizations in establishing an ABC program and/or preparing ABC's. As a minimum, all sites should consider utilizing the standard formats in these guidelines for displaying the results of their analyses.
- f. The ABC programs and implementing directives at each site shall be subject to review during formal periodic evaluations of sites by the cognizant oversight organization.

8. RESPONSIBILITIES AND AUTHORITIES.

- a. Director of Administration and Human Resource Management (AD-1) through the Director of Information Resources Management (AD-20) shall establish policies, procedures, and guidelines to assure that a viable Departmental ABC program is developed and maintained.
- b. Director of Information Resources Management through the:
 - (1) Director of Information Resources Management Policy, Plans and Oversight (AD-24) shall:
 - (a) Conduct management reviews of the effectiveness of the field elements, the Headquarters Energy Information Computer Center, and the Headquarters Administrative Computing Center in implementing the requirements of this Order.
 - (b) Provide managerial and technical advice and assistance for conducting ABC's, as requested.
 - (c) With assistance of the cognizant Program organization(s), determine information technology resources items under the cognizance of AD-24 (i.e., computing resources and/or automated IS) requiring submission of an ABC to OMB.
 - (d) Serve as the overall Departmental focal point on ABC matters for computing resources and automated IS.

(2) Director of Information Technology Services and Operations

(AD-25) shall:

- (a) Conduct telecommunications appraisals of the effectiveness of the field elements in implementing the requirements of this Order.
- (b) Provide managerial and technical advice and assistance for conducting ABC's for telecommunications initiatives as requested.
- (c) With assistance of the cognizant Program organization(s), determine information technology resources items under the cognizance of AD-25 (i.e., telecommunications items) requiring submission of an ABC to OMB.
- (d) Serve as the overall Departmental focal point on ABC matters for telecommunications initiatives.

c. Heads of Field Elements and the Director of Information Resources Management as appropriate, (the Office of Information Resources Management Policy, Plans and Oversight and/or the Office of Information Technology Services and Operations have the following responsibilities for sites not reporting through a field element to Headquarters) shall:

- (1) Provide guidance and assistance to the sites over which they have cognizance on implementing and maintaining a viable ABC program for information technology resources initiatives.
- (2) Implement and coordinate an appropriate management oversight process which ensures awareness and compliance with this Order at cognizant DOE and DOE management and operating contractor sites.
- (3) Provide managerial and technical advice and assistance, as requested or deemed appropriate.
- (4) Review the summary results of site ABC's for information technology resources initiatives as part of the review process of the site planning, budgeting, acquisition, and/or development activities.
- (5) Review and comment on ABC's from their sites which are requested for OMB review.
- (6) Ensure that, through the contracting officer, the provisions of this Order are appropriately implemented in all management and operating contracts.

9. PROCEDURES.

- a. The ABC program at each site shall include policies, responsibilities, and procedures for:
- (1) Integrating ABC's into existing site management decisionmaking processes for information technology resources initiatives.
 - (2) Determining which information technology resources initiatives are to be covered by the ABC program and the level of detail appropriate for the ABC's. At a minimum, however, ABC's shall be conducted for information technology resources initiatives for which the cost of system development and/or acquisition will exceed either \$25 million over the life cycle or \$10 million in any one fiscal year.
 - (3) Defining the procedures to be followed in conducting ABC's. The use of the DOE ABC Guidelines (page 2, paragraph 5d) or a similar procedure is encouraged.
 - (4) Stating when ABC's should be conducted by the site. The five distinct decision points in the life cycle of an information technology resources initiative where ABC's or a modified version of them may be appropriate are discussed in Section 1.2 of "A Manager's Guide to Analysis of Benefits and Costs" and also discussed in some detail in Section 1.2 of "An Analyst's Handbook for Analysis of Benefits and Costs." These five distinct decision points in the life cycle of an information technology resources initiative, where it may be appropriate to conduct an ABC, are listed below:
 - (a) Project Initiation. Using the ABC process in the initial decision to proceed with an analysis of a project. This is commonly called the go/no-go decision point.
 - (b) Project Development. The selection among alternative methods for meeting a project's requirements. The ABC process should assist in identifying the most cost-effective alternative.
 - (c) Budget Formulation. Using the ABC process to assist in the selection of a financing option for the proposed alternative. This selection is then used to determine the type and amount of funds to request in the budget. As an example, before new budget year information technology resources initiatives are included in Departmental budget requests, they should be supported by an ABC.
 - (d) Project Acquisition. The choice among competing vendor proposals: If it is decided to acquire or contract for an information technology resources capability, a modified ABC

process can help do a cost comparison of the proposals. This type of ABC consists of evaluating the technical aspects of proposals, as well as their life-cycle costs, against predetermined criteria. This analysis assists in selecting the proposal most advantageous to the Department.

- (e) Project Review. Post-implementation monitoring. This ABC process concentrates on the review of information to determine whether or not the project accomplished its intended results. A comparison of actual benefits and costs to those projected in prior ABC's helps managers evaluate to what extent the initiative has met its goals. ABC's used for post-implementation reviews can help identify patterns that may require changes in the assumptions of future-site ABC's. This information, when shared throughout the organization, can improve future ABC's and related decisions.

(5) Stating what organization(s) will be responsible for conducting/preparing ABC's at the site.

(6) Defining the site's internal review and approval process for ABC ' S .

- b. As requested (e.g., the annual Call for Information Technology Resources Long-Range Site Plans, DOE Orders, etc.), sites shall include the results of ABC's for information technology resources initiatives in their justifications relative to planning, budgeting, acquisition, and/or development activities.
- c. As requested, sites shall provide ABC's for information technology resources initiatives, required to be submitted to OMB, to cognizant Headquarters Program Offices and through appropriate channels to the Director of Information Resources Management for review prior to transmittal to OMB. Instructions for the submittal of these ABC's will be included in the appropriate Departmental budget calls issued by the Director of Administration and Human Resources Management.

BY ORDER OF THE SECRETARY OF ENERGY:



DONALD W. PEARMAN, JR.

