

MANAGEMENT DIRECTIVE

Commonwealth of Pennsylvania Governor's Office

Subject: Auditing Computer-Based Systems	Number: 325.6 Amended
Date: January 10, 2011	By Direction of:  Mary A. Soderberg, Secretary of the Budget
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This directive establishes policy, responsibilities, and procedures for the performance of audits of computer-based systems. This amendment includes changes to definitions, policy, responsibilities, and procedures as a result of the rescission of *Management Directive 325.4, Agency Annual Audit Plan*. Marginal dots are excluded due to major changes.

- 1. PURPOSE.** To establish policy, responsibilities, and procedures for the performance of audits of computer-based systems.
- 2. SCOPE.**
 - a.** This directive applies to all departments, boards, commissions, and councils (hereinafter referred to as "agencies") under the Governor's jurisdiction. Legislative, judicial, and other agencies not under the Governor's jurisdiction are encouraged to adopt similar policies.
 - b.** Audit organizations within the scope of this directive include; but are not limited to: Agency Audit Organizations, Comptroller Operations Audit Organizations, certified public accountants (CPAs) performing audits for the commonwealth, and public accountants performing audits for the commonwealth.
 - c.** Policies and responsibilities contained herein apply to auditing activities performed under an agency's direction and are not intended to limit audit functions performed by the Department of the Auditor General, State Treasurer, or Legislative Budget and Finance Committee, or computer-related services performed under mandate by the Department of General Services or PA Office of Administration.

3. OBJECTIVES.

- a. To ensure that audits of computer-based systems during system design and development, as well as audits of computer-based systems in operation, are planned, administered, and performed in an efficient, economical, and effective manner by eliminating duplicate audit efforts and gaps in audit coverage.
- b. To ascertain that such audits provide reasonable assurance that the systems and applications carry out the policies management has prescribed for them; provide the controls and audit trails needed for management, auditor, and operational review; include the controls necessary to ensure propriety of the data and to protect against loss, serious error, or disclosure of confidential information; will be efficient, economical, and effective in operation; conform to legal requirements and are documented in a manner that will provide the understanding of the system required for effective development, maintenance, and auditing.

4. DEFINITIONS.

- a. **Agency Audit Organizations.** Agency staff, organized independently of other agency organizations, programs, activities, and functions to be examined, responsible for ensuring audits are conducted objectively.
- b. **Audit of a Computer-Based System.** An independent examination or appraisal of an agency's computerized environment and related systems to provide reasonable assurance that environments, systems, and applications meet the objectives in section 3 of this directive. Audits of computer-based systems include examinations conducted during system design and development, as well as examinations performed of operating computer-based systems.
- c. **Audit Trail.** A documented series of steps or progressions that facilitate the tracing of a transaction from its initiation through all intermediate processing routines to its point of final disposition.
- d. **Comptroller Operations Audit Organizations.** Office of the Budget, Office of Comptroller Operations, Bureau of Audits (BOA) and Bureau of PA Liquor Control Board Services audit staff.
- e. **Computer-Based System.** An organized and interrelated group of Information Technology (IT) components including the processes, people, infrastructure, organization, and architecture, linked together according to a plan to achieve a specific objective.
- f. **Government Auditing Standards (commonly referred to as the "Yellow Book"):** A publication issued by the U.S. Government Accountability Office, Comptroller General of the United States, which contains standards for audits of government organizations, programs, activities, functions, and of government assistance received by contractors, nonprofit organizations, and other nongovernment organizations.

- g. Qualified Auditors.** Comptroller Operations Audit Organizations; Agency Audit Organizations; CPAs or public accountants registered under *Act 140*, titled "*The CPA Law*," as amended December 4, 1996, *P.L. 851, No. 140*; and other professional consulting firms performing audits and evaluations in accordance with applicable auditing standards.

5. POLICY.

- a.** Agencies shall plan for and initiate audits of computer-based systems. Such audits will apply to computer-based systems in operation, as well as computer-based systems during system design and development.
- b.** Audits of computer-based systems within commonwealth organizations, programs, activities, and functions are to be performed by qualified auditors, as defined in section 4.g. of this directive, in accordance with generally accepted government auditing standards promulgated by the U.S. Government Accountability Office (GAO) in its publication [*Government Auditing Standards*](#).
- c.** Agency Audit Organizations conducting audits of computer-based systems shall be organized independently of the programs, activities, and functions being examined, as a means of ensuring the objectivity of all audits conducted.
- d.** When computer-based systems are primarily financial or fiscal in nature, audits of such systems shall be performed by Comptroller Operations Audit Organizations, since these audit organizations possess the required expertise to perform fiscal and accounting evaluations, as well as related system reviews and examinations. Agencies may not conduct or contract for such fiscally oriented audits unless such action has been approved and formally delegated by BOA.
- e.** When computer-based systems are primarily programmatic and not financial or fiscal in nature, audits of such systems may be performed by Agency Audit Organizations or other qualified auditors, as designated by agency heads.
- f.** When computer-based systems involve both fiscal and programmatic aspects, audits of such systems shall be conducted by qualified auditors. In this manner, all aspects of computer-based systems, fiscal and programmatic, will be examined by qualified auditors. Agency heads and Comptroller Operations Audit Organizations shall coordinate the conduct of such joint audits to ensure proper and complete performance. Since fiscal implications and conditions are directly involved in these types of systems, agencies may not unilaterally conduct or contract for related audits of such systems unless such action has been approved by and formally delegated by BOA.
- g.** Actual computer-based systems to be audited shall be determined by a thorough and detailed analysis of agency needs, applying the selection criteria specified in Enclosure 1, Audit Coverage and Selection Criteria.

6. RESPONSIBILITIES.

a. Agency Heads.

- (1) Allocate agency audit responsibility to qualified auditors who will effectively and independently examine computer-based systems in their agencies, in accordance with this directive.
- (2) Implement procedures and controls to ensure that Comptroller Operations Audit Organizations are informed of the development of all new computer-based systems or revisions or enhancements to existing computer-based systems.

b. Agency Heads and Comptroller Operations Audit Organizations. Ensure that all audits of computer-based systems are well-planned and coordinated.

c. Comptroller Operations Audit Organizations.

- (1) Assist agency heads in planning, establishing, and coordinating the performance of computer-based systems audits within commonwealth agencies.
- (2) Perform audit responsibility in accordance with this directive.
- (3) Perform an oversight role to ensure that all audits of computer-based systems are performed in accordance with established policies and responsibilities.

d. Other Qualified Auditors. Perform audit responsibility in accordance with this directive.

7. PROCEDURES.

a. Agency Heads.

- (1) Develop a plan to ensure that all new computer-based systems or revisions to existing systems are audited in accordance with this directive.
- (2) Inform Comptroller Operations Audit Organizations of the development of all new computer-based systems or revisions to existing systems.
- (3) Allocate agency responsibility to qualified auditors.

b. Comptroller Operations Audit Organizations. Assist agency heads in planning, establishing, and coordinating the performance of computer-based systems audits.

c. Comptroller Operations Audit Organizations/Other Qualified Auditors. Perform audit responsibility as assigned and in accordance with this directive for audits of computer-based systems.

- d. **Comptroller Operations Audit Organizations.** Perform oversight role to ensure that audits of all computer-based systems are performed in accordance with established policies and procedures.

Enclosure 1 - Audit Coverage and Selection Criteria

This directive replaces, in its entirety, *Management Directive 325.6*, dated August 17, 2009.

AUDITING COMPUTER-BASED SYSTEMS

AUDIT COVERAGE AND SELECTION CRITERIA

PRIMARY AUDIT SELECTION CRITERIA

Risk/Materiality Analysis. Projects or systems having the greatest risk exposure, taking into consideration the materiality of potential losses or impact on the delivery of services to the citizenry of the commonwealth, must be considered in the audit selection process. This approach to project/system audit selection provides reasonable assurance that internal audit resources are deployed to an optimum degree.

Management Needs. Expressed or implied concern about a project or system by a member of management increases audit interest.

Federal and State Policy and Legal Requirements. Federal and state policy and legal requirements relating to a particular project or system that dictate or mandate the need for audits must be considered (e.g., funding, accountability, and transparency requirements of the *American Recovery and Reinvestment Act of 2009*).

Operating Budgets. The availability of existing resources in relation to overall audit requirements and selectivity must be considered in determining the projects or systems to be audited. Available resources must be managed to ensure maximum audit productivity within the limits of such resources.

SECONDARY AUDIT SELECTION CRITERIA

Other Audits Performed. Audits performed by other audit organizations, such as the Department of the Auditor General, Legislative Budget and Finance Committee, independent CPAs and public accounting firms, outside consultants, program monitors, etc., will impact on the need for an audit organization to perform a specific project/system audit.

Character of Activity. Infrequent or unusual projects or systems are more likely to result in error or inefficiency and are of greater audit interest.

Complexity of Activity. As the operating complexity of an area increases, information and control systems tend to become more complex. This complexity increases both the probability of error and the effort required to monitor or audit such systems.

Historical Experience. Significant adverse findings in a prior audit or known operational weaknesses relative to a project or system increase audit interest.

Internal Control. Areas and systems with weak internal controls must be of greater audit interest to the auditor. The design and past performance of an internal control system is important in judging the probability of errors in a system.

Dollar Volume. Large dollar amounts either flowing through a system or committed to a project or system increases audit interest.

Time Since Last Audit. As the time since the last audit lengthens, the value of a new audit is likely to increase. The beneficial effects of an audit are greatest immediately before and after a project.

Deviations from Budget Plan. Significant unfavorable variances from established plans increase audit interest in a project or system.

Opportunities to Achieve Operational Benefits. When it is determined that audits of particular projects or systems can produce material benefits in increased economy, efficiency, and effectiveness of operations, such audits are of major interest.

Major Program Revisions and Developments. A dynamic environment in terms of revisions to personnel, procedures, programs, operations, organizations, etc., relative to a system increases the probability of errors or inefficiencies and consequently increases audit interest.

Public Disclosure Implications. The prospect of significant adverse notoriety as a consequence of either acts of commission or omission serves to increase audit interest of a project or system.