

Activity: Computer Surveillance Program Prerequisites

1.0 Purpose: This guideline describes general prerequisites which should be satisfied in order to enhance the effectiveness of other computer surveillance guidelines.

2.0 Scope: This guideline provides specific recommendations for developing a basic foundation on which the computer quality surveillance program will be built. Specifically, the areas addressed by this guideline are as follows:

- E Computer Systems Identification
- E Quality Surveillance Objectives
- E Quality Surveillance Personnel Qualifications

3.0 References:

- 3.1 Mair, William C.; Wood, Donald R.; Davis, Keagle W. Computer Control and Audit. Altamonte Springs, FL: Institute of Internal Auditors, Inc., 1976 by Touche, Ross and Company.
- 3.2 Perry, William. A Standard for Auditing Computer Applications. Boston, MA: Auerbach Publishers Inc., 1987.
- 3.3 Perry, William. A Standard for Auditing Computer Applications: Selected Audit Areas. Pennsauken, NJ: Auerbach Publishers Inc., 1986.
- 3.4 INPO Good Practice 86-024, "Software Controls for Plant Computers"

4.0 Guidelines:

4.1 In preparation for and during the conduct of this surveillance:

- E Obtain and review implementing procedures, instructions and drawings governing this activity.
- E Prepare a guide or checklist using the selected items from this guideline.
- E Review past surveys, audits, surveillances and other evaluations/ assessments.
- E Ensure that checklists include, where applicable, actual observations of performance; general plant conditions, radiological work practices, housekeeping, work document controls and use, and safety practices.

NOTE: Refer to Guideline A.1, "General Quality Surveillance Guidance," for specific details on the attributes listed above.

4.2 Computer Systems Identification

- A. The Quality Assurance organization should establish a set of criteria which defines those types of computer system functions which may be subject to quality surveillance. For example, such computer systems may include those used to:
 - 1) design or modify plant safety systems or other critical systems
 - 2) perform safety-related calculations
 - 3) monitor plant security access
 - 4) monitor real-time plant processes
 - 5) track safety-related nonconformances

- B. Each criterion should identify the types of hardware systems to which it applies (e.g., mainframe, minicomputer, microcomputer, hand-held programmable calculators, etc.).
- C. The Quality Assurance organization should then develop and maintain an internal catalogue file or listing of all current computer systems satisfying the established criteria. This catalogue will serve as a reference source for preparation of surveillance.

NOTE: The surveillance format itself serves as a natural mechanism for building the catalogue.

- D. The Quality Assurance organization determines the type and format of the information to be placed into the catalogue. In general, the catalogue would usually contain the following types of information for each system:

- 1) system title
- 2) brief description of system purpose and functions
- 3) overall system flowchart or flow processing diagram
- 4) brief description of hardware
- 5) results of previous inspections, audits, and quality surveillances

NOTE: Care should be taken to ensure that safeguards materials are filed in accordance with proper regulations and procedures.

- E. Information obtained from subsequent audits and quality surveillances should be

used to update the catalogue, for future reference.

- F. Catalogue information should be readily available to quality surveillance, audit and inspection personnel.

4.3 Quality Surveillance Objectives

- A. Specific objectives should be established for each quality surveillance prior to the selection or preparation of a quality surveillance checklist.

NOTE: It is recommended that a quality surveillance have no more than one to two specific objectives.

- B. Quality surveillance objectives should clearly state the following information:

- 1) specific procedural control, function, or process to be observed
- 2) hardware and software systems to be checked
- 3) checking method (e.g., visual examination, test data run, etc.)
- 4) success criteria (i.e., the criteria which must be satisfied in order to provide reasonable assurance that the control, function, or process is providing adequate protection from exposure risks)

- C. The quality surveillance performance should complement the specific objectives at a sufficient level of detail to demonstrate whether the success criteria are being satisfied.

NOTE: If quality surveillance checklists are used, then it is instructive to note that detailed standard computer application checklists have been developed for business internal auditing functions. Most of the checklist items are readily applicable to industrial

and engineering computer applications (see references 3.2 and 3.3).

4.4 Quality Surveillance Personnel Qualifications

- A. A person performing a quality surveillance of computer controls should have sufficient training and qualifications to be able to do the following for the specific quality surveillance objective:
- 1) identify potential system exposures and their likelihood of occurrence
 - 2) define valid success criteria
 - 3) evaluate actual performance with respect to the success criteria
- B. The Quality Assurance organization is responsible for defining the method used to ensure that quality surveillance personnel are adequately qualified.

5.0 Other Guidelines for Consideration:

5.1 A.1, "General Quality Surveillance Guidance"