Section 3. Common Requirements

8-300. Introduction. This section describes the protection requirements that are common to all IS.

8-301. Clearing and Sanitization. Instructions on clearing, sanitization and release of IS media shall be issued by the accrediting CSA.

a. **Clearing.** Clearing is the process of eradicating the data on media before reusing the media in an environment that provides an acceptable level of protection for the data that was on the media before clearing. All internal memory, buffer, or other reusable memory shall be cleared to effectively deny access to previously stored information.

b. **Sanitization.** Sanitization is the process of removing the data from media before reusing the media in an environment that does not provide an acceptable level of protection for the data that was in the media before sanitizing. IS resources shall be sanitized before they are released from classified information controls or released for use at a lower classification level.

8-302. Examination of Hardware and Software. IS hardware and software shall be examined when received from the vendor and before being placed into use.

a. **IS Software.** Commercially procured software shall be tested to ensure that the software contains no obvious features that might be detrimental to the security of the IS. Security-related software shall be tested to verify that the security features function as specified.

b. **IS Hardware.** Hardware shall be examined to determine that it appears to be in good working order and has no elements that might be detrimental to the secure operation of the IS when placed under facility control and cognizance. Subsequent changes and developments that affect security may require additional examination.

8-303. Identification and Authentication Management. As the complexity of a specific IS and the associated residual risk for this system increase, the need for identification and authentication of users and process becomes more significant. Identification and authentication controls are required to ensure that users have the appropriate clearances and need-to-know for the information on a particular system and shall be managed in accordance with procedures identified in the SSP.

a. **Unique Identification.** Each user shall be uniquely identified and that identity shall be associated with all auditable actions taken by that individual.

b. **Authentication at Logon.** Users shall be required to authenticate their identities at "logon" time by supplying their authenticator, such as a password, smart card, or biometrics, in conjunction with their user identification (ID) prior to the execution of any application or utility on the system.

c. **Applicability of Logon Authentication.** In some cases, it may not be necessary to use IS security controls as logon authenticators. In the case of stand alone workstations, or small local area networks, physical security controls and personnel security controls may suffice. For example, if the following conditions are met, it may not be necessary for the IS to have a logon and password:

(1) The workstation does not have a permanent (internal) hard drive, and the removable hard drive and other associated storage media are stored in an approved security container when not in use.

(2) All of the users with access to the workstation and the security container/ removable media have the required clearance level and need-to-know for all of the data processed on the workstation.

(3) The workstation is located within an approved security area, and all uncleared/lower-cleared personnel are escorted within the area.

d. **Access to Authentication Data.** Access to authentication data shall be restricted to authorized personnel through the use of encryption or file access controls, or both.

e. **User ID Reuse.** Prior to reuse of a user ID, all previous access authorizations (including file accesses for that user ID) shall be removed from the system.

f. **User ID Removal.** When an employee terminates, loses access to the system for cause, or no longer has a reason to access the IS, that individual's user ID and its authentication shall be disabled or removed from the system.

g. **User ID Revalidation.** Active user IDs are revalidated at least annually.

h. **Protection of Individual Authenticator.** An authenticator that is in the form of knowledge (password) or possession (smart card, keys) shall not be shared with anyone.

i. **Protection of Individual Passwords.** When passwords are used as authenticators, the following shall apply:

(1) Passwords shall be protected at a level commensurate with the sensitivity level or classification level and classification category of the information to which they allow access.

(2) Passwords shall contain a minimum of eight non-blank characters, shall be valid for no longer than 12 months and changed when compromised.

(3) Passwords shall be generated by a method approved by the CSA. Password acceptability shall be based on the method of generation, the length of the password, password structure, and the size of the password space. The password generation method, the length of the password, and the size of the password space shall be described in an attachment to the SSP.

(4) When an IS cannot prevent a password from being echoed (e.g., in a half-duplex connection), an overprint mask shall be printed before the password is entered to conceal the typed password.

(5) User software, including operating system and other security-relevant software, comes with a few standard authenticators (e.g., SYSTEM, TEST, and MASTER) and passwords already enrolled in the system. The ISSO shall ensure that the passwords for all standard authenticators are changed before allowing the general user population access to the IS. The ISSO shall also ensure that these passwords are changed after a new system version is installed or after other action is taken that might result in the restoration of these standard passwords.

8-304. Maintenance. IS are particularly vulnerable to security threats during maintenance activities. The level of risk is a factor of the nature of the maintenance person's duties, the security awareness of the employees, and the maintenance person's access to classified information and facilities.

a. **Cleared Maintenance Personnel.** Maintenance personnel who are cleared to the highest classification level of information on the system and indoctrinated for all information processed on that system do not require an escort, if need-to-know controls can be implemented. When possible, an appropriately cleared and technically knowledgeable, facility employee shall be present within the area where the maintenance is being performed to ensure that security procedures are being followed.

b. **Uncleared (or Lower-Cleared) Maintenance Personnel**

(1) If appropriately cleared personnel are unavailable to perform maintenance, an uncleared or lower-cleared person may be used, provided an appropriately cleared and technically qualified escort monitors and records the maintenance person's activities in a maintenance log. Uncleared maintenance personnel must be U.S. citizens.

(2) System initiation and termination shall be performed by the escort. In addition, keystroke monitoring shall be performed during access to the system.

(3) Prior to maintenance, the IS shall be completely cleared and all non-volatile data storage media shall be removed or physically disconnected and secured. When a system cannot be cleared procedures, which are identified in the SSP, shall be enforced to deny the maintenance personnel visual and electronic access to any classified data contained on the system.

(4) A separate, unclassified copy of the operating system, including any micro-coded floppy disks, CD-ROM, or cassettes that are integral to the operating system, shall be used for all maintenance operations. The copy shall be labeled "UNCLASSIFIED -- FOR MAINTENANCE ONLY" and protected in accordance with procedures established in the SSP. Maintenance procedures for an IS using a non-removable storage device on which the operating system is resident shall be considered by the ISSM on a case-by-case basis.

8-305. Malicious Code. Policies and procedures to detect and deter incidents caused by malicious code, such as viruses or unauthorized modification to

software, shall be implemented. All files must be checked for viruses before being introduced on an IS and checked for other malicious code as feasible. The use of personal or public domain software is strongly discouraged. Each installation of such software must be approved by the ISSM.

8-306. Marking Hardware, Output, and Media. Markings on hardware, output, and media shall conform to Chapter 4 of this manual. If the required marking is impractical or interferes with the operation of the media, the CSA may approve alternate marking procedures.

a. **Hardware Components.** All components of an IS, including input/output devices that have the potential for retaining information, terminals, stand-alone microprocessors, or word processors used as terminals, shall bear a conspicuous, external label that states the highest classification level and most restrictive classification category of the information accessible to the component in the IS. This labeling may be accomplished using permanent markings on the component, a sign placed on the terminal, or labels generated by the IS and displayed on the screen. If the CSA requires that labels be color coded to indicate classification level they shall be orange for Top Secret, red for Secret, blue for Confidential, and green for unclassified.

b. **Hard Copy Output and Removable Media.** Hard copy output (paper, fiche, film, and other printed media) and removable media shall be marked with visible, human-readable, external markings to the accreditation level of the IS unless an appropriate classification review has been conducted or in the case of media, the information has been generated by a tested program verified to produce consistent results and approved by the CSA. Such programs will be tested on a statistical basis to ensure continuing performance.

c. **Unclassified Media.** In the CSA-approved areas where classified and unclassified information are processed on collocated IS, unclassified media shall be so marked.

8-307. Personnel Security. Personnel with system access play an integral role in protecting information; defining their system security policies; and maintaining and monitoring the confidentiality, integrity, and availability attributes that are inherent within their IS. Duties, responsibilities, privileges, and specific limitations of IS users, both general and privileged, shall be specified in writing. So far as feasible, security duties shall be distributed to preclude any one individual from adversely affecting operations or the integrity of the system. Protection levels for particular IS shall be determined by the clearance level, formal access approvals, and need-to-know held by users of the IS, and the classification level of data processed or stored.

8-308. Physical Security

a. Safeguards shall be established that prevent or detect unauthorized access to the IS and unauthorized modification of the IS hardware and software. Hardware integrity of the IS, including remote equipment, shall be maintained at all times, even when all classified information has been removed from the IS.

b. Classified processing shall take place in a CSA-approved area.

c. Visual Access. Devices that display or output information in human-readable form shall be positioned to prevent unauthorized individuals from reading the information.

d. Unescorted Access. All personnel granted unescorted access to the area containing the IS shall have an appropriate security clearance.

8-309. Protection of Media. Media must be protected to the level of accreditation until an appropriate classification review has been conducted.

8-310. Review of Output and Media

a. **Human-Readable Output Review.** An appropriate sensitivity and classification review shall be performed on human-readable output before the output is released outside the security boundary to determine whether it is accurately marked with the appropriate classification and applicable associated security markings.

b. **Media Review.** Electronic output, such as files, to be released outside the security boundary shall be verified by a comprehensive review (in human-readable form) of all data on the media including embedded text (e.g., headers and footer) before being released. Information on media that is not in human-readable form (e.g., embedded graphs, sound, video, etc.) will be examined for content using the appropriate software application. CSA-approved random or representative sampling techniques may be used to verify the proper marking of large volumes of output.

8-311. Configuration Management. Configuration management (CM) ensures that protection features are implemented and maintained in the system. CM applies a level of discipline and control to the processes of system maintenance and modification. CM provides system users with a measure of assurance that the implemented system represents the approved system.

a. **Configuration Documentation.** Procedures shall be implemented to identify and document the type, model, and brand of system or network component (e.g., a workstation, personal computer, or router), security-relevant software product names and version or release numbers, and physical location.

b. **System Connectivity.** Procedures shall be implemented to identify and document system connectivity, including any software used for wireless communication, and any communications media.

c. **Connection Sensitivity.** The sensitivity level of each connection or port controlled by the Security Support Structure (SSS) shall be documented.

d. **CM Plan.** The facility CM program shall be documented in a CM plan and shall include:

(1) Formal change control procedures to ensure the review and approval of security-relevant hardware and software.

(2) Procedures for management of all documentation, such as the SSP and security test plans, used to ensure system security.

(3) Workable processes to implement, periodically test, and verify the CM plan.

(4) A verification process to provide additional assurance that the CM process is working effectively and that changes outside the CM process are technically or procedurally not permitted.