Software Engineering Methodology

Appendix F
Computer System Retirement Guidelines

Purpose: This procedure establishes the process for the orderly retirement of information systems regardless of software platform or size, both classified and unclassified. It also addresses the disposition of IS records according to Department of Energy (DOE) requirements listed in the references. It does not apply to the Teleprocessing Services Program (TSP) software. It may not include the removal of information systems from the software libraries used for software reuse and sharing.

These procedures should be followed to remove software, data, and references to an information system from all computer operating platforms and to notify other offices who keep records of computer applications that a system has been retired.

Initiation and distribution: The procedure for *Computer System Retirement Guidelines* is initiated by the Chief Information Officer (CIO) for adaption by all DOE organizations that may be involved in a system retirement.

References: DOE 1324.2A, RECORDS DISPOSITION, September 13, 1988

National Archives and Records Administration (NARA) Handbook on Managing Electronic Records, 1990.

DOE Software Engineering Methodology, March 1996.

General Information: The System Owner or their organization's Proper Program Manager has overall responsibility for retirement of an information system. The federal or contractor System Manager is responsible to the organization's (federal) Information Management (IM) point-of-contact and System Owner for the orderly review and processing of the retirement.

Disposition of Retiring Information Systems: Disposition for a retiring information system will depend on retirement conditions. The System Owner must identify this criteria in the retirement initiation memo, and have it certified by their Proper Program Manager or the DOE or Headquarters (if at Headquarters) Records Management Officer.

Data is not being converted to another data base: If the system is being "totally" retired, the data must be preserved in accordance with DOE 1324.2A, RECORDS DISPOSITION, for that system's type of data and the time period specified in the Order. All software required to manipulate the data must be retained for the same duration. Requests for a "total" retirement must be supported by an approved DOE F 1324.10, Records Inventory and Disposition Schedule (RIDS), and a DOE F 1324.5, Request for Records Disposition Authorization.

Disposition of Retiring Information Systems, continued:

Data is being converted to a newly developed or redesigned data base: If the data will not be retired and archived, but will remain active in a new data base, the recordkeeping requirements will be minimal. Computer resident data shall not be destroyed until all machine-readable data and software (e.g., production source, load modules, job control language) are backed up to tape or other magnetic or optical media, and retained for the specified time period in a approved and secured vault. In addition, a complete copy of all system documentation must be retained with the information system retirement tapes either in the vault, or in a safe area for easy retrieval to support any eventual reactivation or sharing of the system or software.

Identification of Retiring Information Systems:

The identification of information system retirement candidates can occur in several ways.

- System Owners may identify systems that are no longer needed or are being replaced by a new system.

- Through the annual long-range planning process by Information Management points-of-contact.

- Capacity planning/performance management reports may show systems are no longer needed through indications of inactivity such as low computing resource, computer time, and disk space utilization.

- An Information System Review or other operating system audit process may reveal inactive systems.

- The System Manager may identify no longer needed systems through a semiannual review for an assigned organization. In these cases, such as information systems with low maintenance activity, the System Manager may recommend that the System Owner initiate a retirement request.

In all cases, it is the System Owner's responsibility to request and authorize the retirement process.

Retirement Process:

Several phases constitute the retirement process. The System Owner coordinates the retirement with their organization's Records Liaison Officer (RLO) and Proper Program Manager, site Records Management Officer, DOE Departmental or Headquarters Records Officer, and authorizes the

Retirement   system retirement process through their Information Management Division.
Process,   The System Manager coordinates the process through the System Owner's
continued: Support Programmer Staff. The Support Programmer oversees the retirement
process at the direction of the System Manager to ensure each participant
completes their part of the retirement process. Each participant notifies the
Support Programmer when their actions have been completed. Upon
completion of all tasks, a "retirement folder" is forwarded to the System
Manager who prepares a memorandum for signature by the Director of
Information Management or Operations (whichever is appropriate) to the
System Owner that the retirement has been completed. These phases are
discussed in more detail in the Retirement Procedure.

Definitions: **Computer System Engineering Services:** The team or organization
responsible for the systematic approach to the specification, design,
development, testing, operation, and maintenance of a computer system.

**Computer/Microcomputer/Local Area Network Client-Server
Operations:** The organization responsible for the maintenance of mainframe,
minicomputer, microcomputer, local area network client/server functions
including continuity of operations, operating system, and application backups.

Director of Information Management: The manager with responsibility for
the planning, management, and control of information as a corporate asset.

Director of Operations: The manager with the overall responsibility for the
management of the functional operations of information systems.

Proper Program Manager: The manager with the responsibility for a
program area and the information system providing automated computing for
the program area's missions and functions. The authorizing signature on the
Records Inventory and Disposition Schedule.

Quality Assurance Team: The team that conducts software quality assurance
activities, such as reviewing plans and deliverables for compliance with
applicable standards, and providing guidance and assistance on process
matters.

Records Liaison Officer: The office employee who provides recordkeeping
assistance to the Office and is the Office point-of-contact dealing with records
management issues with the site Records Management Officer.

Definitions,   **Records Management Officer:** The site authority for records management.
continued: Directly communicates with the Departmental Records Officer at
                    Headquarters.

                    Support Documentation/Technical Writing: The organization responsible
                    for assisting with the development of system documentation during a software
                    engineering project, and maintaining current documentation through
                    subsequent versions.

                    Software Library/Inventory Coordinator: The organization or individual
                    with the responsibility of maintaining site software libraries, repositories, and
                    inventories.

                    System Support Programmer: The support programmer with knowledge of
                    the system being retired sufficient to perform tasks assigned in the retirement
                    process.

                    System Review Inventory System (SRIS) Coordinator: The employee with
                    the responsibility of reporting new systems in development and the status of
                    existing systems through the annual UNICALL planning process.

                    System Owner: The information or program manager's system owner of
                    record who is responsible for all development, enhancement, and maintenance
                    activates associated with the system.

                    System Manager: Has the overall responsibility to ensure the support
                    programmer coordinates and completes the procedures in this guideline with all
                    participants in the retirement process.

Participants: The following is a list of participants involved in the retirement process.

Participant	Responsibility
System Owner	Initiates the retirement process via memo to the Director of Information Management or Operations.
Site Records Management Officer or Records Liaison Officer, and Proper Program Manager	Provides recordkeeping guidance and assistance in preparing DOE F 1324.10, Records Inventory and Disposition Schedule (RIDS); and DOE F 1324.5, Request for Records Disposition Authorization, and authorizes disposition.
System Manager	Provides direction to Support Programmer in the retirement process.
Support Programmer	Coordinates retirement process with retirement participants at the System Manager's direction. Conducts all software and data backup.
Computer Systems Engineering Services/Operations	Removes system from automated scheduling, continuity of operations, backup program, and software subsystems.
System Documentation or Technical Writing	Coordinates retirement of system documentation. Sends one copy to support programmer to store with the retirement backup tapes.
Software Library/Inventory Coordinator	Maintains library for all computer applications.
System Review Inventory System (SRIS) Coordinator	Maintains the SRIS for the retired information systems.
Director of Information Management or Operations (whichever is appropriate)	Reviews retirement request and forwards to System Manager. Originates and signs the retirement completion memorandum.

Initiate   This section provides guidelines for initiating the retirement procedure, which
Retirement: begins with the System Owner and records management officials. In the
                   context of this document, the System Owner has the overall responsibility for
                   system retirements. However, it may be appropriate for System Managers,
                   Local Area Network Managers, or organizational Information Management
                   points-of-contact to initiate a system retirement process.

Participant	Step	Action
System Owner	1	Coordinate retirement with the organization's Proper Program Manager, RLO, and DOE Departmental and/or Headquarters Records Manager. Submit an approved DOE F 1324.10, Records Inventory and Disposition Schedule (shown in figure 1), and DOE F 1324.5, Request for Records Disposition Authorization (shown in figure 2) in accordance with DOE 1324.2A, as appropriate.
	2	Prepare a memorandum authorizing the retirement (shown in figure 3).
	3	Submit DOE F 1450.6, Request for System Control Identification Number (shown in figure 4), to request that any system control identification numbers be deleted, if necessary.
	4	Send the memorandum and copies of DOE F's 1324.10, 1324.5, and 1450.6 to the Director of Information Management or Operations. Send copies to memorandum cc: list.
Records Management Officer	5	Provide recordkeeping guidance as appropriate, and assistance in preparing DOE F 1324.10 and 1324.5.

Figure 1. DOE F 1324.10, Records Inventory and Disposition Schedule

Note: Figure is not available in electronic form in this document.

Figure 2. DOE F 1324.5, Request for Records Disposition Authorization

Note: Figure is not available in electronic form in this document.

[Date]

[System Owner Routing Symbol]

Retirement of *[system name; acronym; and module number, if applicable)]*

Director of Information Management (or Information Resource Management)/Operations

[Depending upon the circumstances, choose one of the following two paragraphs for the first paragraph]

This is your authorization for total retirement of the *[system name]*, effective *[date]*. We no longer use the system and do not require access to the data. The data and software may be archived according to the time periods specified in the attached DOE F 1324.5. The system is operated on a *[state hardware platform--standalone microcomputer, Local Area Network, VM processor, MVS processor.*

<div align="center">**OR**</div>

This is your authorization for the partial retirement of *[system name]*, effective *[date]*. We no longer use the system and the data has been converted to another/new data base. The data will remain active at the same classification level in the new data base and should not be retired or archived. The system is operated on a *[state hardware platform--standalone microcomputer, Local Area Network, VM processor, MVS processor.*

[The following is the second paragraph of the retirement memorandum.]

This retirement process has been coordinated with my organization's Records Liaison Officer and the Proper Program Manager, and the Records Management Officer. I, therefore, authorize you to archive and retain the programs, files (and data when appropriate), and documentation for the time specified in the attached DOE F 1324.10, Records Inventory and Disposition Schedule (RIDS), so that the system may be reactivated during that period, if necessary. If the system is not reactivated by the end of the retention period, dispose of it according to regular procedures.

<div align="right">*[System Owner]*
[Title]
[Organization]</div>

Attachments
DOE F 1424.5
DOE F 1324.10
DOE F 1450.6, as appropriate

cc:
Organization's Proper Program Manager
System Manager
Computer System Engineering Services
Records Management Officer
DOE Departmental Records Officer (for DOE-wide systems)

<div align="center">**Figure 3. Memorandum Authorizing Retirement**</div>

Figure 4. DOE F 1450.6, Request for System Control Identification Number

Note: Figure is not available in electronic form in this document.

Review the
Authorization
Request:

Participant	Step	Action
Director of Information Management or Operation (whichever is appropriate)	1	Review retirement request and forward it to the appropriate System Manager.
System Manager	2	Review retirement authorization and determine if it addresses all requirements of this procedure and that it is acceptable. **If acceptable ...** Provide Support Programmer with copies of the document and direction for processing the retirement. **If not acceptable ...** Discuss concerns with the System Owner and resolve conflicts.
	3	Place the original authorization documents in the system project file.
	4	Issue a revision to the support work order, if appropriate.
	5	Provide direction to the Support Programmer for coordinating retirement.

Review the
Authorization
Request,
continued:

Participant	Step	Action
Support Programmer	1	Coordinate retirement at the direction of the System Manager.
	2	Establish a system retirement folder and prepare a retirement checklist (shown in figure 5) and a schedule.
	3	Prepare a system retirement notification memorandum (shown in figure 6). Send memo to the specified organizations and related support staff.
	4	Execute the removal of the system using the retirement checklist.
	5	Monitor the retirement actions of each of the organizations outlined in the retirement notification memorandum.
	6	Prepare a final SRIS form and send to Chief Information Officer.
	7	Submit DOE F 1450.6, Request for System Control Identification Number, to Computer System Engineering Services/Operations.

Retirement Checklist

☐   Retirement authorization letter from the system owner. (*)

☐   Support work plan signed off (one system work plan) or work plan revised (multi-system work plan) per System Manager direction. (*)

☐   Memorandum to all specified organizations and support areas to notify them of retirement. (*)

☐   DOE F 1450.6, Request for System Control Identification Number, completed by System Owner for deletion of system module number, if applicable. (*)

☐   Final SRIS form completed and sent to Chief Information Officer. (*)

☐   Copy of signed DOE F 1324.10 (RIDS) placed in retirement folder, if appropriate. (*)

☐   For a "total" system retirement, a copy of DOE F 1324.5, Request for Records Disposition Authorization, must be approved and signed by the site Records Management Officer. (*)

☐   Final report cycle offered to System Owner.

☐   Production source, load modules, job control language, and all other system (information system, operational, etc.) software copied to tape (or diskette for microcomputer), and placed in a secured vault.

☐   One complete copy of system documentation (User System Reference Manual and Programmer System Reference Manual) stored with tapes or easily accessible area.

☐   Remaining system documentation removed from all sources and Documentation/Technical Writing Departments.

☐   Modules deleted from Test Source and Test Load Libraries.

☐   Modules deleted from the Production Source and Load Libraries.

☐   PROCS deleted.

☐   Revoke all access (LOGONIDs/USERIDs) to the system.

☐   Coordinated retirement with Software Library/Inventory Coordinators.

☐   Submit DOE F 1450.6, Request for System Control Identification Number, to Computer Systems Engineering Services/Operations, if applicable. (*)

☐   Prepare proposed retirement completion memorandum from the Director of Information Management or Director of Operations (whichever is appropriate) to the System Owner. (*)

☐   Other (specify)_____.

* Copy to be included in the retirement folder.

Figure 5. Retirement Checklist

Memo to: *[Distribution List]*

From: *[Support Programmer Manager/Supervisor]*

Subject: Notification of Intent to Retire the *[system name, (acronym), system module number, if applicable]*

This is to inform all concerned organizations that the *[system name, (acronym), system module number]*, is being retired as of *[date]*. Attached is the memorandum received from the System Owner that authorized this retirement (Attachment 1). Also, included is a list of the activities that were coordinated by the Support Programmer for the retirement process (Attachment 2).

The primary purpose of this system was *[state purpose]*. *["Note that this system was used to process classified data" or "contained data which has been determined to be privacy data."]* This system was designed by *[system designer]* and installed on *[date]*. This system was in *[production/development/process of implementation]* status when *[System Owner]* of *[Organization and Location]* requested retirement for *[reason of retirement]*. The approximate annual operating cost, including computer processing, programming and user support in the last year before retirement was $ *[obtain from the Division of Information Technology Services; if the total is less that $100, enter "less than $100"]*.

Additional actions required by associated organizations to retire this system are as follows:

• Computer Operations - Follow DOE F 1324.10, Records Inventory and Distribution Schedule (RIDS), or DOE F 1324.5, Request for Records Disposition Authorization, for defining the disposition of all tapes associated with the system. Ensure retirement and archive tapes, and a complete set of system documentation is placed in a secure vault for the specified period, after which they may be disposed of without further notice. A copy of the software may be left in the software library/inventory for sharing/reuse by other organizations.

• Computer System Engineering Services/Operation

    • Remove all production JCL from the automatic scheduling programs and continuity of operations (Vital Records Protection) program, if applicable. Remove from CICS, ORACLE, OMEGA, BasisPlus, etc., if applicable. Revoke all access to the system on the effective date: *[list of access/USERIDs]*.

    • Follow DOE F 1324.10, Records Inventory and Distribution Schedule (RIDS), or DOE F 1324.5, Request for Records Disposition Authorization, for defining the disposition of all tapes associated with the system. Ensure retirement and archive tapes, and a complete set of system documentation is placed in a secure vault for the specified period, after which they may be disposed of without any further notice.

• Quality Assurance/Audits - Remove the system from inventories of classified, sensitive and tracking systems, and scheduled information system and security reviews. A review may be conducted 6 months after system retirement to assure all retirement procedures have been followed.

• Support Documentation/Technical Writing - Notify the operations and maintenance support staffs, System Owner and all holders on the distribution list to destroy their copies of system documentation due to retirement. Remove all stored documentation (excluding software libraries/inventories). Send one complete copy of the system documentation for storage with the retirement tapes or in easily accessible area.

Thank you for your cooperation in the retirement of the system. Please contact the *[Support Programmer name]* at *XXX-XXXX* when your organization has completed assigned retirement procedures.

Attachments

Distribution List
Organization's Proper Program Manager
System Program Manger
Records Management Officer
Director of Information Management
Director of Operations
Computer System Engineering Services
System Manager
Quality Assurance
Computer Security Site Manager
Software Library/Inventory Coordinator
SRIS Coordinator
Support Documentation/Technical Writing

Figure 6. System Retirement Notification Memorandum

SAMPLE HEADQUARTERS SYSTEM RETIREMENT ACTION MEMORANDUM

ACTIONS COMPLETED FOR *[SYSTEM NAME (ACRONYM)]* RETIREMENT

By *[Support Programmer Name]*

- All program listings and other miscellaneous listings were destroyed.

- The following disk files and software were copied to tape (005621):

DOE.D0413LIB.LOAD to D0413.S002.LOAD	File #1
DOE.DOE413LIB.CNTL to D0413.S003.CNTL	File #2
DOE.D0413LIB.CLIST to D0413.S004.CLIST	File #3
LIBRARIAN (SOURCE) PROD470 to D0412.S005.COBOL	File #4
and D0413.S006.COBOL	File #5
DOE.D413201.DATA to D0413.S007.DATA	File #6

  NOTE: This activity freed up 103 tracks on DASD.

- The *[SYSTEM ACRONYM]* data base has been copied to two tapes:

  010216, 011316, DSN=D0413.S001.DBBKUP

  NOTE: This activity freed up 323 tracks on DOE 8XX.

- All tape files previously used by this system have been released.

- One complete copy of system documentation was stored with retirement tapes.

- All other copies of documentation were removed and destroyed.

- System Module No. *XXXX* can be removed from the System Module Cross-Reference System (SMXREF).

- All source programs have been deleted from LIBRARIAN.

Figure 6. Attachment - Sample Headquarters System Retirement Action Memorandum

*Remove from
Software
Platform:*

Participant	Step	Action
Computer System Engineering Services	1	Remove the system from software subsystems (CICS, OMEGA, etc.) if appropriate.
	2	Delete the system access rules.
	3	Delete the Timesharing Option (TSO) account number, if appropriate. If a user has access to this system only, cancel the TSO LOGONID.
	4	Delete the system JCL and dispose of all associated documentation and files, as appropriate.
	5	Remove the system from automatic scheduling.
	6	Remove the system from the Continuity of Operations Program schedule.
	7	Assign tape retention periods as specified on DOE F 1324.10 or DOE F 1324.5. Deliver tapes to a secure vault, and documentation to the same vault or a secure, easily accessible area.
	8	Inform Support Programmer of the action(s) taken.

*System
Documentation:*

Participant	Step	Action
Support Documentation and/or Technical Writing	1	Send one complete copy of the system documentation to the Support Programmer for storage with the retirement backup tapes.
	2	Remove stored system documentation (excluding software library/inventory).
	3	Inform all holders of retiring system documentation to destroy their copies.
	4	Inform Support Programmer of the action(s) taken.

Assemble the
Retirement
Folder:

Participant	Step	Action
Support Programmer	1	Assemble the system retirement folder as follows: • System Retirement Checklist • System Owner's retirement authorization memorandum • Signed support work plan • DOE F 1450.6, Request for System Control Identification Number • Final SRIS form • Approved DOE F 1324.10, Records Inventory and Disposition Schedule (RIDS) *or for total system retirement* Approved DOE F 1324.5, Request for Records Disposition Authorization • Proposed retirement completion memorandum from Director of Information Management or Operations to the System Owner

Assemble the
Retirement
Folder,
continued:

Participant	Step	Action
Support Programmer	2	Task the retirement process. **If the system is tasked under separate order...** Copy of Support Work Order signed in the "Completion" space. **If the system is tasked as part of a multi-system work order...** Identify the need to revise the work plan and an estimate of the revised work plan for the remaining systems.
	3	Forward the folder with the retirement completion memorandum (shown in figure 7) to the System Manager.

[Date]

HR-4

Retirement of *[system name (system acronym); module number, if applicable]*

[System Owner]

In accordance with your request, dated *[date]*, the system retirement of the *[system name]*, has been completed effective *[date]*.

All software, procedures, programs and data have been copied to tape. All system access has been revoked. The retirement tapes and one complete copy of system documentation has been stored in a secure vault, and will be retained as indicated in DOE F 1324.10, Records Inventory and Disposition Schedule (RIDS). Upon expiration of the retention period, tapes and documentation will be destroyed without further notice. All computer resident data has been deleted from system libraries.

                                        [name], Director
                                        Information Management/Operations

Attachments

cc:
Director of Information Management, or
Director of Operations
Organization's Proper Program Manager
System Manager
Records Management Officer
Computer Security Site Manager
System Manager
Computer System Engineering Services
DOE Departmental Records Officer (for DOE-wide systems)

Figure 7. Retirement Completion Memorandum

Review the
Retirement
Folder:

Participant	Step	Action
System Manager	1	Review the retirement folder for completeness and accuracy.
	2	Resolve any existing conflicts concerning the system retirement with the System Owner.
	3	Finalize the retirement completion memorandum (shown in figure 7) for the Director of Information Management or Director of Operations signature. Forward the retirement completion memorandum to the Director for signature.

*Approval of
System
Retirement:*

Participant	Step	Action
Director of Information Management or Operations	1	Approve or disapprove the system retirement. **If approved ...** Sign the retirement completion memorandum and transmit to System Owner appropriate carbon copies as indicated in figure 7. **If disapproved ...** Return the retirement memorandum to the System Manager for resolution.
System Manager	2	Finalize the retirement process. **If approved ...** Go to *Final System Retirement Tasks*. **If disapproved ...** Resolve problems that prompted disapproval. Revise the retirement completion memorandum and return it to the Director for approval.

Final System
Retirement
Tasks:

Participant	Step	Action
System Manager	1	Close out system project file with information from the system retirement folder, including the retirement completion memorandum (figure 7) from the Director of Information Management or Director of Operations.
	2	Request SRIS Coordinator to delete system from SRIS inventory.
	3	Request the software library/inventory coordinator to delete system from libraries, if appropriate.
Software Library and/or Inventory Coordinator	4	Review the retirement memorandum and delete the system from the library, if appropriate. The coordinator may leave the system in the inventory for software reuse and sharing. If retained, post a disclaimer with the software stating that it is being offered for sharing and reuse, but is unsupported as of the date of retirement. Retain the retirement memorandum.
SRIS Coordinator	5	Remove system record from SRIS.