Long-Term Surveillance and Maintenance Records: Maintaining Access to the Knowledge – 13122

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ABSTRACT

The U.S. Department of Energy (DOE) Office of Legacy Management (LM) is an integral part of DOE's strategy to ensure that legacy liabilities of former nuclear weapons production sites are properly managed following the completion of environmental cleanup activities. In the area of environmental legacy management, records management is crucial to the protection of health, environmental, and legal interests of the Department and the public. LM is responsible for maintaining long-term surveillance and maintenance (LTS&M) records in performance of its mission. Maintaining access to the knowledge contained in these record collections is one of LM's primary responsibilities. To fulfill this responsibility, LM established a consolidated records management facility, the LM Business Center (LMBC), to house physical media records and electronic records. A new electronic recordkeeping system (ERKS) was needed to replace an obsolete system while helping to ensure LM is able to meet ongoing responsibilities to maintain access to knowledge and control the lifecycle management of records.

INTRODUCTION

LM is currently responsible for records from more than 90 decommissioned sites with plans to manage records for 126 sites by the year 2020. Many of these sites include LTS&M responsibilities. The scope of LTS&M includes land-use controls, monitoring, maintenance of in-place remedies, monitoring systems, and information management.

Information management challenges for LM are:

1. Understanding the contents of inherited records collections,
2. Organizing and maintaining access to records for stakeholder use,
3. Preserving records knowledge, and
4. Incorporating new records and media types to maintain comprehensive site information.

New records are created through the performance of LTS&M and business activities. In addition, large legacy record collections are maintained for major DOE sites such as Yucca Mountain, Rocky Flats, Fernald, Mound, and Pinellas. These legacy collections are comprised of more than 2832 cubic meters (100,000 cubic feet) of physical media records and 100 terabytes of electronic

information. All LM records are maintained according to Federal government regulations and agency directives [1, 2, 3, 4, 5].

Record types in the LM collections include:

- Historical site operations,
- Environmental remediation,
- Environmental surveillance and maintenance,
- Comprehensive Environmental Response Compensation and Liability Act (CERCLA) activities (Superfund projects),
- Resource Conservation and Recovery Act of 1976 (RCRA) activities,
- Waste management,
- Waste minimization and pollution prevention,
- National Emission Standards for Hazardous Air Pollutants (NESHAP),
- Land and structures, and
- Administrative records.

Maintaining access to the knowledge contained in these record collections is a primary responsibility of LM. To fulfill this responsibility, LM established a consolidated records management facility, the LMBC, to house physical media records and electronic records. To maintain access to the knowledge and ensure the lifecycle management of the records, a new ERKS was needed to replace an obsolete system. The existing system had been in use for several years, even pre-dating DOE's establishment of LM in 2003. A DOE office that preceded LM procured the system to maintain records for many of the sites later assigned to LM for ongoing oversight.

DISCUSSION

A special initiative was established to select and implement a new ERKS. The objectives for a new ERKS included:

- Implement a secure records repository capable of protecting records from unauthorized disclosure,
- Comply with National Archive and Records Administration (NARA) requirements and agency policies for records management,

- Provide records management functionality for the electronic records as the official agency records in addition to physical media,
- Ensure technical alignment with DOE standards and architecture for document and records management and networking solutions,
- Enable temporary records to be destroyed and permanent records to be transferred to NARA electronically in accordance with approved records disposition schedules,
- Provide efficient management and retrieval of physical media records in LM's custody, and
- Enable the import of records and metadata.

Selection and implementation of an ERKS required close collaboration between Records Management and Information Technology personnel. Requirements for ERKS records management functionality was predicated on the NARA-endorsed Department of Defense Standard, DoD 5015.02-STD, *Electronic Records Management Software Applications Design Criteria Standard* [6]. The DOD standard sets the minimum functional requirements for electronic record management applications. The baseline records management functions inherent in the systems that meet the standard are:

- Implement file plans;
- Schedule records;
- Declare and file records, including e-mail records;
- Store records;
- Sort, view, save and print lists of records;
- Permit closure, cut off, freezes, and records categories;
- Transfer records to NARA or other external locations;
- Destroy records;
- Search for and retrieve records;
- Control access to records;
- Audit the system;
- Safeguard stored records; and

- Provide backup/rollback and recovery capability.

Evaluation and Selection

To select a new ERKS, LM evaluated three DoD 5015.2 certified commercial applications. To perform the evaluation, a one month assessment period was established for each application to be demonstrated by the vendor. Each application was rated on requirement compliance and implementation using a scale of 0 through 5, with 0 being the least compliant and 5 being the most compliant. The individual requirement scores were then summed and a total score was used to denote overall compliance with requirements. Records and IT representatives of LM and the Legacy Management Services contractor presented the results of this evaluation in a matrix table (see figure 1 for an example). LM made the final determination for application software selection by evaluating the application scores in conjunction with purchase price and lifecycle maintenance costs provided by the vendors.

Requirement	Description	Application Ranking (1-5)		
		ERKS 1	ERKS 2	ERKS 3
Operate in the current environment	Shall not require major reconfiguration of the LM network as established	5	5	5
Fast system	Shall have a quick response time for all functions	4	4	4
DoD 5015.2 Certified	Shall have DoD certification for the longest period possible	5	5	5
User friendly	Shall have logical and intuitive screens and easy for staff to learn	4	3	5
Handles records and Documents	Shall have both a records and document Management component; shall manage through the entire life cycle - creation through disposition	4	3	5
Workflow	Shall have a module for correspondence and mail tracking including a capability for multiple concurrences, serial and parallel tracking, and electronic signature	4	4	5
Archival quality	Ensure scanned images are compatible with NARA archival requirements	0	0	3
Ease of filing records	Shall require no more than 2 or 3 mouse clicks to file a record	3	3	3
Capture of hard copy records	Ensure system has state of the art barcode or other technology for capture of hard copy records	4	4	5
Integrated with other office software	Integrated with common software (e.g. WORD, Outlook, etc) for ease of capturing records (e.g. do we want a popup in Outlook asking if the email is a record)	5	4	5
Inventory module	Shall contain a module to track the transfer and maintenance of record boxes in the RSF; needs to include tracking at the folder and box level	1	0	5
Automated disposal	Shall allow disposal to be automated after expiration of retention period	3	3	5
Ease of customization	Shall be easy for local IT staff to make changes to meet local needs	3	2	3
Necessary levels of security	Shall have security capability to meet DOE and Federal standards	5	4	5
Access levels	Shall have sufficient methods to restrict access so that staff feel their records are secure and protected.	5	5	5
Able to protect sensitive information	e.g., HR and other sensitive records that contain PII, OUO,UCI, etc.	5	5	5
Ease of migration	Shall be efficient and economical to transfer from our current system (HB) to the new	5	3	3
Manage all forms of records	Shall manage hard copy, audio visual, microfilm, maps, engineering drawings, etc. in a single repository	5	4	5
Create a unique ID	Shall assign a unique ID to all records both hard copy and electronic	5	5	5
Classification and disposition	Shall provide the ability to assign a classification code and a retention period	5	5	5
Integrity of a record	Shall maintain the integrity of the record as it is received and stored.	5	5	5
Vital records	Shall maintain the capability to ID vital records.	5	5	5
Disposition	Shall allow mass disposition of records by a retention date or a specific event.	5	3	5
Retrieving records	Shall provide the capability to search for stored records in various ways (word, phrase date or range, author, Boolean logic and provide a listing of pertinent records or a note that no records were retrieved	5	3	5
Produce reports	Produce standard reports as well as custom reports as required by the user; system should allow users to quickly produce their own reports.	3	3	3
Format	Provide records in the format they are stored and shall never allow modification of the stored record.	5	5	5
Copy a record	Shall allow a record or records to be copied into a private work space for revision, information copy, etc.	5	4	5
Destruction	Shall identify records for disposition, present them to an authorized individual and require a second authorization for disposition. Ensure that the records are disposed.	4	3	4
Destruction safeguard	Notify an individual who is authorized to destroy if that individual tries to destroy records not yet eligible.	4	3	4
File plan	File plan and document profile data are stored separately from the actual records in a relational manner; Contains functions for establishing and maintaining file plans.	3	2	4
Moratorium records	Shall be able to freeze and unfreeze records due to moratorium they may be imposed for litigation, special studies, etc.	5	5	5
Web	Shall be available for access on the WWW	5	5	5
File Plan search	Shall allow users to search on file plan components to assist users in filing to the proper location.	5		
Turnkey system	Established system used by other agencies that requires little customization; integrator that can install and implement; if customization is required should be able to be easily done by in house personnel.	4	3	4
Must produce references	Shall provide at least 3 other Federal users as references.	3	2	5
Disposition Authorization & Retention Period	Directly tied together as a single item; supports the Federal records schedule format	0	0	5
	Total Score	146	122	160

Figure 1 ERKS Evaluation Matrix Example

Implementation Planning

Implementation of LM's selected ERKS necessitated the identification of system requirements, hardware, configuration, and customizations. These items were captured with the creation of a design basis document, which includes a combined requirements definition and design specification and the following elements:

- Summarizes the key business and technical objectives for which the architecture has been developed;
- Provides a high-level classification of content types and their internal structure;
- Lays out the cabinet/folder structure to be used to manage records, including a map of the retention schedules to folders;
- Defines the records retention schedules and their configuration elements;
- Defines the object type hierarchy based on identified content classes;
- Defines the detailed metadata model for object types;
- Defines user groups and the access security model; and
- Provides high-level recommendations for migrating current content to the new ERKS.

The design basis document solidifies Information Technology needs so a procurement and delivery date for the new ERKS can be identified for implementation planning. The planning allows for the creation of an implementation plan and schedule (see Figure 2 for an example).

Legacy Management Implementation Plan and Schedule for New ERKS	
ID	Name
1	**ERKS Implementation Plan and Schedule**
2	Identify Replacement ERKS Requirements
3	Evaluate Candidates for Replacement ERKS
4	Identify Replacement ERKS
5	Create Design Basis Document for Implementation
6	Implement Design Basis Document Solution
7	Procure Required Software and Hardware, as Required
8	Install ERKS Solution
9	Migrate Records from the Obsolete System
10	Conduct User Training
11	Demonstrate to Management and Complete Acceptance Testing
12	Incorporate recommendations and feedback
13	Deploy Production Version
14	Deploy ERKS

Figure 2 Implementation Plan and Schedule Example

Installation and Migration of Existing Records

Upon procurement of the replacement ERKS, LM's next action was to install and configure the software in preparation for the migration of existing records from the obsolete system. To accomplish the task, LM procured the services of a vendor with installation and migration experience specific to the ERKS. The vendor worked with LM Records Management and Information Technology personnel to install and configure the ERKS. The vendor's expertise was invaluable for the installation and configuration.

Once the ERKS was installed in the LM network environment, the implementation team collaborated to migrate the existing records from the obsolete system. Scripts were developed to export content from the obsolete system. Test activities were accomplished in a development environment so as not to compromise the integrity of the original records.

User Training, Acceptance Testing, and Deployment

When migration activities were completed, LM needed to train the user base, perform acceptance testing of the migrated content, and deploy the system for use. The installation and migration vendor was contracted to train system users. A user's guide was created and users were trained locally by a vendor representative with records management experience. Once the user training was completed the system was deployed for use.

To accomplish acceptance testing, the new ERKS and the legacy system were run in parallel for a 6-month period. All search and retrieval requests were processed independently using both

systems. Search results from the obsolete system were compared to the results using the new ERKS and any identified discrepancies were resolved.

CONCLUSION

All organizations charged with maintaining records will be faced at some point with application software obsolescence. LM's experience with this issue demonstrates that with the appropriate amount of resources and expertise that LTS&M records and the knowledge they contain can be successfully migrated from one electronic recordkeeping system to another.

LM's records and information management program continues to enhance its capabilities to protect, preserve, and provide access to records and information systems. The program effectively and efficiently identifies and collects information from records sources and disseminates information to internal and external stakeholders.

Emphasis on maintaining information for current and future use is an important aspect to LTS&M of former nuclear weapons production sites. Historical and current information is needed to perform surveillance and maintenance activities and provide the framework to tell each site's story to future generations.

REFERENCES

1. 44 United States Code (U.S.C.) 36, E-Government Act of 2002, Government Printing Office (GPO) (2002).
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3. 36 Code of Federal Regulations, Chapter XII, Subchapter B, Records Management, GPO (2009).
4. DOE Order 243.1A, Records Management Program, DOE Office of the Chief Information Officer, (2011).
5. DOE Order 243.2, Vital Records, DOE Office of the Chief Information Officer (2006).
6. DoD 5015.02-STD, Electronic Records Management Software Applications Design Criteria Standard, DoD Chief Information Officer (2007).