

**Managing Legacy Records for Formerly Utilized Sites Remedial Action Program Sites -  
8482**

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**ABSTRACT**

The Manhattan Engineer District (MED) and U.S. Atomic Energy Commission (AEC) contracted for support work through private and academic parties through the early 1960s. The work often involved radioactive materials. Residual radioactive contamination was left at some of more than 600 potentially contaminated (candidate) sites, and worker health and safety concerns remain from the site operations and subsequent remediation activities. The U.S. Department of Energy (DOE) initiated a program to identify and protect records of MED/AEC activities and of remediation work conducted under the Formerly Utilized Sites Remedial Action Program (FUSRAP) to aid in resolving questions about site conditions, liability, and worker health and safety and to ensure ongoing protectiveness of human health and the environment.

This paper discusses DOE activities undertaken to locate records collections, confirm retention schedules and access requirements, and document information about the collections for use by future stewards.

**INTRODUCTION**

The DOE Office of Legacy Management (LM) provides long-term surveillance and maintenance (LTS&M) services for 70 sites. Of these, 27 sites were remediated under FUSRAP.

Historical records are needed for eligibility determinations (i.e., to determine if a given site meets criteria for remediation and post-closure care under FUSRAP). Eligibility determination involves evaluating the contractual relations and physical activities for a site, as DOE had done for approximately 600 candidate FUSRAP sites. Records also are needed to document site conditions, remedial action activities, and post-closure care requirements.

## **Brief History**

MED and AEC contracted with private companies and academic institutions to conduct research or provide storage, ore-processing, refining, prototyping, or fuel element fabrication services. As government-owned facilities were established, AEC released the contracted sites. Release typically consisted of conducting a radiological surveying of a contracted site and decontaminating it to comply with the standards in effect at the time.

By the early 1970s, AEC had identified the need to review the status of the sites because cleanup standards had become more stringent and site conditions had changed. AEC chartered FUSRAP in 1974 to assess these sites and to ensure that site conditions were protective of human health and the environment.

The initial task under FUSRAP was to identify potential sites for cleanup. AEC reviewed operating, decontamination, and contracting records and identified more than 600 candidate sites involved with early federal nuclear energy and weapons programs. Of these, 46 sites were eligible for cleanup under FUSRAP. Site eligibility data were captured in an internal database and in site files. In response to questions about site conditions posed by stakeholders, DOE made the Considered Sites Database available to the public in 2000.[1]

DOE began cleanup of FUSRAP sites in 1979. By 1997, DOE had completed remediation of 25 of the 46 sites (referred to as completed sites). In 1997, Congress directed the U.S. Army Corps of Engineers (USACE) to conduct all field activities for FUSRAP (including the 21 active sites where remediation had not been completed). DOE retained responsibility for determining site eligibility for remediation under FUSRAP and for LTS&M.[2] Since 1997, eight more sites were identified as eligible or were added to the program by congressional order and are in various stages of assessment or remedial action by USACE. Two USACE sites were completed and transferred to DOE for LTS&M in 2002.

In 2004, DOE-LM assumed responsibility for the 25 FUSRAP sites that had been remediated by the DOE, along with FUSRAP records and data systems. All remaining DOE FUSRAP responsibilities were transferred to DOE-LM in 2005.

DOE-LM was formally established as a new DOE element on December 15, 2003. This Office is responsible for ensuring that DOE's post-closure responsibilities are met and for providing DOE programs for LTS&M, records management, work force restructuring and benefits continuity, property management, land use planning, and community assistance.

## **FUSRAP RECORDS CHALLENGES**

Information and records management for FUSRAP sites presents challenges not associated with the records transfer of other programs or sites. The FUSRAP records are distributed across many locations, finding aids are difficult to use or lack detail, and through attrition, employees with knowledge of the collections have left the agency.

DOE-LM began an evaluation of the available records collections in 2004. To date, findings include the following:

- Records are stored in various locations and are managed by different records custodians.
- DOE-LM does not have custody of all records related to FUSRAP sites and therefore does not control retention and destruction.
- Most records transfer documentation does not contain sufficient detail to locate and retrieve a sought-after document.
- Key documents have been difficult to locate, such as
  - Documents cited in certification dockets that establish the technical basis for certification,
  - Field data, and
  - Historical operating records to substantiate eligibility, responsible party determinations, or worker exposure.
- Classified records remain unavailable because uncertainty about the need for these records in the public realm probably precludes wholesale declassification, even if the status of “classified” is no longer necessary.
- Previously restricted documents have been found with old markings that should have been declassified and re-marked.
- Materials are in various media types such as paper, film, and electronic formats, which have posed retrievability problems, especially with the electronic formats.
- Records information resides as institutional knowledge and is not captured for future custodians.
- Workers are retiring, and institutional knowledge is dissipating.

For most sites transferred to DOE-LM for LTS&M, site operations were managed by a single DOE office, and records were generally collected in a single repository. In contrast, FUSRAP site operations were conducted by MED and AEC beginning in the early 1940s and were administered from multiple offices. Records for those operations were interspersed and dispositioned with records for other projects of a particular office. Agency succession resulted in records being disseminated to different storage locations or DOE facilities. FUSRAP operating records remain stored at multiple Federal Records Centers and other DOE facilities. Some of these records remain classified, and detailed inventories are not available.

Multiple DOE offices conducted remediation activities during the early years of FUSRAP, and the remediation records remained in the collections at those sites. Records were further sorted and dispositioned when the DOE Oak Ridge Operations Office in Oak Ridge, Tennessee passed remedial action responsibility to USACE in 1997. Records from sites with ongoing remedial action were transferred to USACE and records from completed sites records were transferred to a Federal Records Center. DOE Headquarters maintained a small FUSRAP staff in Germantown, Maryland, where more records were managed.

For many of the FUSRAP sites, the records are all that remain to document site history. These records are needed determine eligibility and to respond to the public through Freedom of Information Act requests. The information requested often pertains to site activities conducted under MED or AEC. Other requests are for information to be used in litigation proceedings and

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to document potential worker health issues arising from remedial action activities conducted in the 1980s and 1990s.

Records are needed for cost liability and recovery actions and to support USACE responsible party actions. DOE-LM is responsible for supporting this task, which is conducted in conjunction with the DOE Office of General Counsel. The Office of General Counsel may also have records holdings.

The complexity and condition of the collections; continued stakeholder, DOE, and USACE needs; continued management of the paper and electronic collections; and maintenance and effective retrieval of electronic files each contribute to the challenges of managing FUSRAP records.

### **COMPILING INFORMATION FOR FUTURE CUSTODIANS**

DOE must overcome the challenges posed by FUSRAP information and leave a coherent and complete package of site information for use by future custodians. DOE must be able to provide a basis for answering the following questions:

- What occurred at a site?
- Were workers exposed to harmful levels of radiation?
- What was done to characterize the site?
- Is a site eligible for cleanup under FUSRAP?
- Who is responsible for cleanup?
- What was done to remediate the site?
- What are the final site conditions?
- Do the final conditions comply with current regulations and laws?
- Are site conditions protective or are use restrictions necessary?
- Is additional remediation necessary?
- Where are the operating, remediation, and LTS&M records?

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## **Criteria for Effective FUSRAP Records Management**

Site records are archived for the use of future custodians. Records are needed for a variety of purposes for candidate and eligible FUSRAP sites. Custodians will need records knowledge for the indefinite future. Records must be located and retrieval assured, and the knowledge must be preserved in the form of effective finding aids. FUSRAP stewards must be able to retrieve records in response to inquiries relating to determinations of responsible parties, identification of likely contaminants, potential contaminant types and distribution, worker safety, and liability for contamination.

Records must describe site operations that resulted in waste generation, the extent of contamination, remedial action activities, final site conditions, site verification, regulator concurrence, and post-closure protectiveness and use restrictions.

Electronic data management concerns include document image file management and management of environmental data and other data collected for FUSRAP sites. DOE-LM endeavors to obtain environmental and geographic data for sites as they transfer from USACE. Essentially no electronic environmental and geographic data have been acquired for DOE-LM completed sites.

Data management protocols need to support the geographically distributed DOE-LM organization and stakeholder support requirements.

## **Early FUSRAP Records Work**

DOE personnel traveled to seven Federal Records Centers and six DOE offices in the late 1970s and early 1980s to evaluate the MED/AEC-era holdings and finding aids and assess their relevance to FUSRAP (Fig. 1). Both classified and unclassified legacy records were evaluated.

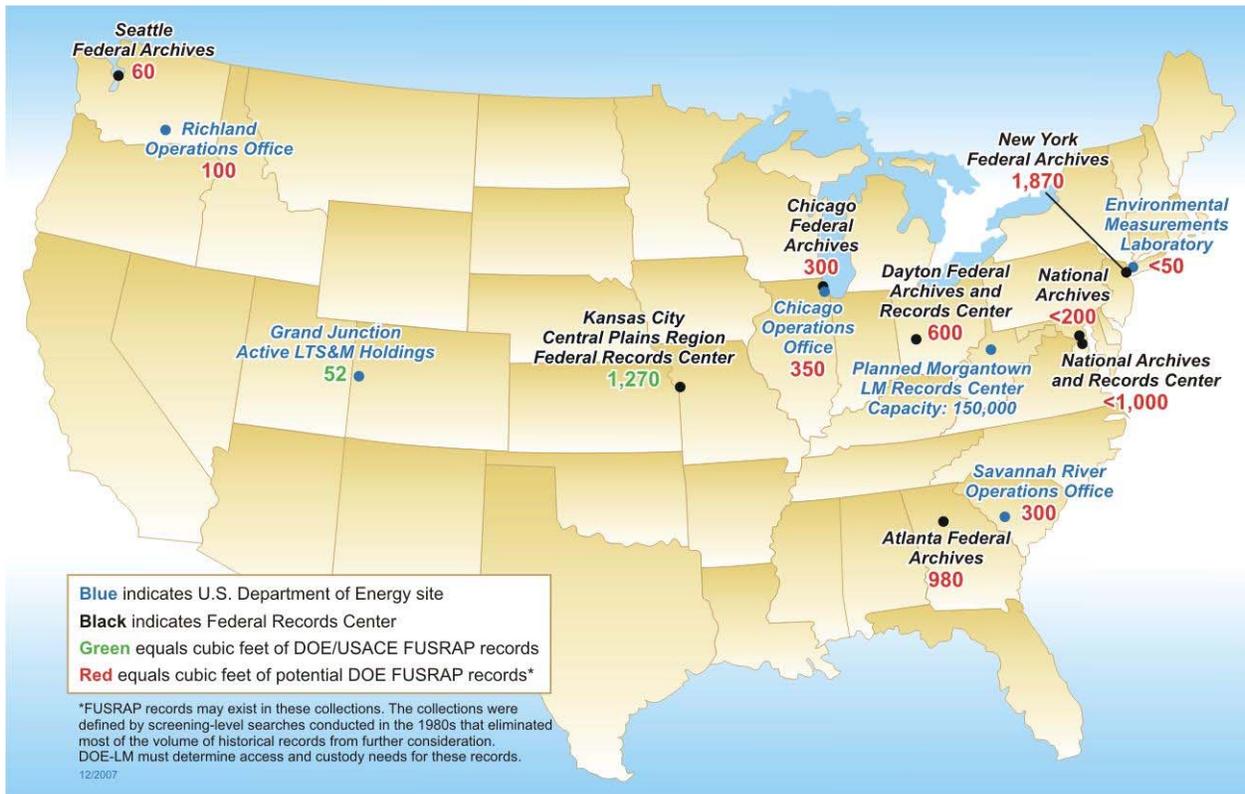


Fig. 1. Locations and volumes of FUSRAP records.

DOE located enough information to develop a list of candidate sites and substantiate eligibility decisions for all the sites. This work resulted in identification of other potential records collections, but DOE did not verify that the accessions actually contained records of interest.

During the course of evaluating eligibility for the candidate FUSRAP sites, the DOE Office of Environmental Management (DOE-EM) copied records and created a Considered Sites collection. The collection establishes the basis of eligibility decisions for all candidate sites and was maintained in Germantown, Maryland. After 2000, DOE-EM posted many of the records on a public-facing site on the Internet in the Considered Sites Database.

### Recent FUSRAP Records Work

DOE-LM has been conducting an ongoing program to document historical FUSRAP records since the program was transferred to LM in 2001. This entails contacting Federal Records Centers and DOE facilities to determine if holdings contain needed records. Finding aids are being developed and will be entered into the permanent collection for use by future stewards.

In 2002 and 2004, DOE-EM transferred custody of more than 400 cubic feet of records to the Federal Records Center in Kansas City, Missouri., to LM. This collection consists of remedial action records for the sites completed before 1997. DOE-LM inventoried the records and developed finding aids using an electronic records document management system. DOE-LM

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records at various Federal Records Centers will ultimately be consolidated in a Legacy Management Records Center to be built in Morgantown, West Virginia. In the interim, current, detailed accession records are maintained, and records can be retrieved practically overnight.

Records for the 21 Active FUSRAP sites, occupying 794 cubic feet, were transferred to USACE in 1997 and stored at the Kansas City Federal Records Center. DOE-LM obtained finding aids to the records. As USACE achieves regulatory closure of a FUSRAP site and the site is transferred to DOE-LM for LTS&M, USACE will accession additional records to the Kansas City Federal Records Center and provide finding aids to DOE. Because the USACE collection contains Privacy Act-protected materials, in the near term USACE will retain custody of that collection but will grant DOE supervised access to the records.

The DOE Oak Ridge Operations Office filmed the entire collection of FUSRAP records, and USACE acquired four sets of the microfilm, each consisting of 1,776 reels and more than 1,000 aperture cards. USACE had the filmed records converted to electronic TIFF files, generating a collection that occupies 4 terabytes of data.

The film and TIFF images have proven difficult to access because the finding aids lack sufficient detail to locate and retrieve a document of interest, and each page of a document comprises a separate file. In 2007, USACE provided a sample of TIFF images to DOE, who converted the data to searchable PDF files. DOE is still evaluating the quality of the optical character recognition process and the cost of conversion. The converted data still consist of small files, each representing a single page of the original document. DOE and USACE may determine that the ability to use keywords to search for and locate information has sufficient benefit to convert the entire TIFF collection.

In 2007, more than 40 boxes of additional FUSRAP materials were collected from working files at the DOE Oak Ridge Operations Office site. These materials likely contain many duplicates of records already in the FUSRAP collection. The records have been shipped to Grand Junction, Colorado, where they will be processed into the LM collections.

DOE-LM staff interviewed former DOE and contractor staff who had historical knowledge about FUSRAP record holdings and their disposition. These staff members had participated in the effort in the late 1970s and early 1980s efforts to evaluate the MED/AEC-era records to determine site eligibility.

DOE-LM acquired the Considered Sites Database in 2004 from DOE-EM. The Considered Sites Database is a discrete package of legacy documents created during site eligibility determination and remediation and can be accessed by the public through the LM website at <http://csd.gjo.doe.gov>. [1] LM located and inserted missing records and corrected scanned documents that had errors, such as out-of-order or missing pages. Markings on some records incorrectly indicated the records were restricted, and DOE-LM has had these properly re-marked. As other FUSRAP sites transition to LM, those sites' legacy records will be incorporated into the Considered Sites Database.

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DOE-LM has scanned the entire “Considered Sites Library” (the former Germantown, Maryland, eligibility files) into a searchable format. The scanned records are keyword searchable and are managed using the LM electronic records management database.

### **On-Going Records Work**

DOE-LM is continuing its efforts to locate and ensure preservation of complete information about FUSRAP site operations and remediation. Available information will be evaluated for completeness, and finding aids will be left for use by future stewards. The need for this information is evident in recent program activities in which DOE-LM has responded to requests from the Office of General Counsel, the U.S. Department of Labor and the U.S. Department of Justice. Those agencies have requested the records to answer questions about site eligibility for FUSRAP cleanup, liability for cleanup, and issues related to site operations.

Operations records remain at Federal Records Centers operated by the National Archives and Records Administration. Other records are in archives at major DOE facilities, such as the Savannah River Site in South Carolina. Records may also reside in contractor collections that document past work for DOE and its predecessor agencies. DOE-LM is verifying the location of FUSRAP site records, determining retrievability of the records crucial to maintaining site protectiveness, and entering index information (metadata) into DOE-LM records collections. This entails contacting Federal Records Centers and other DOE facilities and obtaining any available information describing records accessions and contents. Collection-specific follow-on work will be proposed, which may include conducting on-site visits to these locations to confirm the content and retention schedules for holdings and enhancing finding aids for retrieval.

DOE certified the completed sites through Certification Dockets. Site conditions are often summarized in the Certification Docket, and the data source is included by reference. DOE-LM checked records inherited from other entities and found that the collection of referenced documents is incomplete. These documents would be needed for responses to questions about final site conditions or acceptable future uses. DOE-LM is actively searching for the documents needed to fill data gaps.

DOE-LM is working to compare the contents of the filmed records possessed by USACE with the DOE Completed sites collections sent to the Kansas City Federal Records Center. Finding aids for the filmed collection are searchable electronically but do not relate a document to an accession and box number in the stored records collection. Also, the apparent volume of filmed records appears not to coincide with the volume of the DOE Completed sites accessions. DOE-LM has conducted a trial conversion of the USACE TIFF images representing the filmed collection to searchable PDF files and is evaluating the quality and utility of the converted TIFF images before deciding to convert the entire filmed collection into searchable electronic document images.

Other scanned document files are created continuously. A comprehensive document image file management system has not yet been implemented. This results in files stored in various directories across the various DOE-LM computer servers. Reconstructing the entire set of information would be difficult and expensive at best. Some file locations are a matter of institutional knowledge and do not adhere to a protocol that new custodians can follow.

Information management protocols are being reviewed to confirm they are appropriate for FUSRAP.

## **INFORMATION MANAGEMENT PROCESSES**

This section describes institutionalized records management methods and protocols that apply to FUSRAP records.

### **LM Records Management Plan and Procedures**

LM has developed and implemented records management processes and procedures ensure that records are effectively maintained and dispositioned and that legacy records and information inherited from EM closure sites and other programs are protected and preserved.[3] Specific goals and performance measures are established to accomplish the efficient and cost-effective management of records through all phases of their life cycle: creation, maintenance and use, and disposition.

File plans have been created to identify where the images and records should be maintained within the DOE-LM records database and the physical collections. Documents are assigned an alphanumeric code from the file plan. If records are digitized, the paper records are inventoried, indexed, and sent to the Federal Records Center.

### **Custody of Records**

When remedial action responsibility was transferred to USACE, DOE transferred all program records to USACE. USACE submitted many of the records to a Federal Records Center but retains custody of the records. USACE will grant DOE supervised access to these records. USACE cannot relinquish custody of the records because they contain sensitive and proprietary program information, such as subcontract documents. At some time in the future, the records should cease to be sensitive, but USACE will likely retain full custody because these constitute agency records. Because the records have been scheduled for permanent retention, DOE has no concerns about notification of impending destruction.

Legacy records remain in the custody of the performing DOE office or the National Archives and Records Administration. All other FUSRAP records are in the custody of DOE-LM.

### **Access and Retrieval**

DOE ensures that records can be accessed and retrieved for use by long-term care stewards and stakeholders. Collections containing pertinent records are identified and finding aids are developed for efficient retrieval. Custody is identified and custodial and access agreements are established to ensure preservation and access. Some historical records, perhaps procurement and contractual records, may have limited retention periods because present FUSRAP needs were not anticipated when the records were sent for inactive storage or archiving. Retention schedules are confirmed to ensure that needed records are not destroyed.

DOE-LM is implementing systems that allow stewards to search for records for a given site or activity, determine what information is available, and retrieve the information. Records will be

protected as long as necessary and these systems will be maintained. Finding aids will be compiled into hard copy records in case electronic finding aids are not maintained in the future.

### **Active Information**

Records generated through ongoing DOE-LM FUSRAP activities are managed according to LM procedures (Fig. 2). Information is needed by staff at various locations. Paper records are not suitable for organizations such as LM, which is distributed over a wide geographic area. Currently, FUSRAP records are available through the LM records management system. Pertinent documents are scanned and managed using this system, which allows access to document images at any LM location.



Fig.. 2. Active records storage at the DOE-LM office in Grand Junction, Colorado, provides access to information used by technical staff at that location.

### **Inactive Information**

DOE-LM cannot state conclusively that all essential information pertaining to FUSRAP sites has been found or is retrievable. Operations records have been crucial in responding to requests about worker safety, liability, and other legacy obligations.

Remediation records must fully disclose final site conditions. This is probably going to be most critical for sites with restricted uses (higher risks)—information on site cleanup levels, final site conditions, risk assessment, and institutional controls should be easily retrievable.

As described previously, DOE recognizes the importance of legacy and remediation records and the highest priority of its FUSRAP efforts is to complete work on locating and cataloging legacy records.

## **Electronic Document Management**

Document imaging is the conversion of paper documents to electronic images using scanning software and equipment. Use of this technology supports the LM mission to share federal information with stakeholders. Conversion of FUSRAP paper documents to an electronic format has provided a more effective means of retrieving and sharing critical documents and will improve the delivery and accessibility of information for the public. Once the collection is fully digitized, the electronic files and the FUSRAP Considered Sites Database will reside on government-owned servers.

When possible, Optical Character Recognition files are created for FUSRAP documents. This process involves creating an electronic image of a paper document or record by use of computer software and a scanner and producing computer-readable text that can be displayed via the LM records management system. This solution eliminates the long-term need for maintaining the paper records in active storage locations and provides DOE LM organizations, the Office of General Counsel, and stakeholders with an efficient tool to search for, identify, and retrieve documents. The valuable paper copies of the documents are then transferred to the National Archives and Records Administration for long-term inactive storage.

The Considered Sites Database was intended to provide only high-level information to the public. Much of the information in the records for each site consists of detailed backup documentation. The Considered Sites Database is a dynamic collection; DOE expects to receive additional documents in the future, and the Considered Sites Database will require regular updates.

Because the FUSRAP record collection contains some documents that are exempt from release to the public (usually because of Privacy Act protections), not all the images created during digitizing of the FUSRAP site record collection will be available for unrestricted public access. Stakeholders can submit a Freedom of Information Act request to obtain FUSRAP documents that are not available on the website.

## **Records Acquisition Preceding Site Transfer**

At various stages of site remediation, USACE provides site documents to DOE to facilitate post-closure LTS&M planning (Fig. 3). When a site transfers to DOE, DOE-LM will review available site information, identify gaps, and obtain missing records. Upon site transition to DOE, USACE provides records that would be included in an Administrative Record and an information repository documenting remediation activities. DOE-LM will request electronic copies of site documents, geospatial data, monitoring results, photographs, and any other available electronic information. Key documents will be posted on the DOE-LM website (<http://www.LM.doe.gov/>), usually in the Considered Sites Database. Geospatial data will be used to establish base maps for sites with active LTS&M requirements. Monitoring data are needed to track trends and demonstrate that the remedy is performing as designed and remains protective of human health and the environment. DOE-LM also requests metadata for USACE remediation records sent to Federal Records Centers. The USACE FUSRAP records are scheduled for permanent retention.

FUSRAP Site Activity	Documents Submitted to DOE
DOE Determines a Site is Eligible for FUSRAP	Eligibility Determination
USACE Conducts Preliminary Assessment	
—If No Further Action, Congress is Informed and Records are Submitted	NFA Letters and Preliminary Assessment*
—If Remedial Action is Indicated, Preliminary Assessment Sent to DOE	Inclusion Letter and Preliminary Assessment*
USACE Conducts Remedial Investigation/Feasibility Study	Remedial Investigation/Feasibility Study*
USACE Develops Record of Decision	Record of Decision*
USACE Completes Remedial Action	Completion Report*
USACE Completes 2-Year Operation and Maintenance Phase	Administrative Record
Site Transfers to DOE for LTS&M	

\*Courtesy copy for DOE files. DOE does not conduct a formal review of USACE documents.

Fig. 3. Records are transferred from USACE to DOE during the entire site remediation and closeout process.

## **CONCLUSIONS**

DOE-LM recognizes that records and information management is a critical component of effective LTS&M. Records are needed to answer questions about site conditions and demonstrate to the public in the future that the sites are safe. DOE-LM is working to satisfy present needs and anticipate future uses for FUSRAP records, and compile a collection of site and program information from which future stewards can readily locate and retrieve needed information.

## **REFERENCES**

1. Considered Sites Database (the database can be accessed at <http://csd.gjo.doe.gov/index.cfm>).
2. U.S. Department of Energy/U.S. Army Corps of Engineers DOE/USACE, “Memorandum of Understanding between the U.S. Department of Energy and the U.S. Army Corps of Engineers Regarding Program Administration and Execution of the Formerly Utilized Sites Remedial Action Program (FUSRAP),” available at [http://www.lm.doe.gov/documents/3\\_pro\\_doc/8\\_references/framework/fusrpmou.pdf](http://www.lm.doe.gov/documents/3_pro_doc/8_references/framework/fusrpmou.pdf). (March 1999).
3. U.S. Department of Energy Office of Legacy Management Procedure 204.4a, “Records Management,” March 14, 2007.