

**Implementation of the Formerly Utilized Sites Remedial Action Program: Coordination Between the U.S. Department of Energy and the U.S. Army Corps of Engineers—10352**

Christopher Clayton and Vijendra Kothari  
U.S. Department of Energy Office of Legacy Management

Michael Widdop and Joey Gillespie  
S.M. Stoller Corporation, Grand Junction, CO 81503

**ABSTRACT**

A predecessor agency to the U.S. Department of Energy (DOE) initiated the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974. In 1997, Congress assigned responsibility for assessment and remediation of FUSRAP sites to the U.S. Army Corps of Engineers (USACE). DOE is responsible for determining eligibility and providing long-term surveillance and maintenance. Successful implementation of FUSRAP is facilitated by the close cooperation between USACE and DOE. Roles and responsibilities are defined in a 1999 Memorandum of Understanding. To facilitate ongoing communication and coordination, DOE and USACE launched the FUSRAP Working Group in 2001. DOE conducts visits to sites undergoing remediation to familiarize staff with remedial action activities and to plan transfer of sites to DOE's Office of Legacy Management upon completion of remedial action.

**INTRODUCTION**

The U.S. Atomic Energy Commission (AEC) established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in March 1974 to evaluate radioactive contamination at sites where work had been performed in support of the Manhattan Engineer District and the nation's early atomic energy program.

Beginning under the Manhattan Engineer District of the U.S. Army Corps of Engineers (MED) and continuing under AEC, contractors at sites throughout the United States were retained to supply materials and services. Activities included processing and storing uranium and thorium ores and other radioactive materials for the nuclear weapons program, performing metallurgical research, and providing production and machining services. Although most of the sites were cleaned up to guidelines that were in effect at the time and released, some of those guidelines had been superseded by more stringent standards by the 1970s. AEC began to reexamine the sites to identify potential risks to human health and the environment where levels of radioactive contamination might exceed current standards.

In 1977, as the successor agency to AEC, the U.S. Department of Energy (DOE) assumed administration and execution of FUSRAP. DOE identified 46 sites that required cleanup, which began in 1979. Congress transferred responsibility for FUSRAP site characterization and remediation to the U.S. Army Corps of Engineers (USACE) in 1997. DOE is responsible for determining if a site is eligible for remediation under FUSRAP and for long-term surveillance and maintenance (LTS&M) of remediated FUSRAP sites. A 1999 Memorandum of Understanding (MOU) between USACE and DOE defines the roles of each agency in administering and executing FUSRAP [1].

The actions and responsibilities of DOE and USACE to implement FUSRAP are independent and complementary. This presentation discusses the coordination between USACE and DOE and demonstrates how the coordination furthers the goal of each agency to ensure protectiveness of FUSRAP sites.

## **MISSION AND OBJECTIVES**

The principal mission of the DOE Office of Legacy Management (LM) is to ensure that assigned sites (including closed FUSRAP sites) remain protective of human health and the environment after remediation is complete [2]. DOE accomplishes this through an LTS&M program designed to control residual risk and maintain safe site conditions. DOE assumes perpetual responsibility for remediated FUSRAP sites.

## **ROLES AND RESPONSIBILITIES**

Through the Energy and Water Development Appropriations Acts of 1998 and subsequent acts, Congress directed USACE to conduct assessments and remedial action at FUSRAP sites in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process [3, 4, 5]. DOE retains responsibility for determining site eligibility and providing LTS&M. These roles and responsibilities are defined in the MOU.

### **DOE: Eligibility Determination and Referral**

DOE is responsible for determining whether a site is eligible for remediation under FUSRAP. Site eligibility is based on meeting the following criteria:

- The site was used for MED or early AEC activities;
- Radioactive materials were used at the site;
- Radiological contamination may remain at the site; and
- Site cleanup is not addressed under another program.

The LM Office of Site Operations prepares a recommendation for referral, which the DOE Office of General Counsel reviews, then issues an opinion finding the site meets eligibility requirements for remediation under FUSRAP. The Office of Site Operations then transmits a notice of referral to USACE.

DOE conveys site documentation to USACE in conjunction with a referral of a site for assessment and remedial action. The documentation includes

- Operations documentation establishing that work was performed at the site for MED or AEC and defining the processes and potential contamination; and
- Available radiological survey information about potential radiological contamination remaining on the site.

### **USACE: Assessment and Remediation**

When a site is determined to be eligible by DOE, USACE is responsible for determining whether the site should be designated as an active FUSRAP site requiring further action under the CERCLA process. If additional action is required, USACE is responsible for assessing site

conditions, selecting and implementing the remedy, and working with the U.S. Department of Justice on any cost-recovery actions. The assessment may result in a finding that no further action is required.

Once the site is referred to USACE, USACE assumes all responsibility for community involvement and responses to stakeholder inquiries until the site is transferred back to DOE once the remedy is in place.

If residual contamination remains on the property after completion of remedial action, and radiological conditions are such that the property cannot be released for unrestricted use, USACE will develop land use controls as part of the remedy.

### **DOE: LTS&M**

LTS&M requirements for a site are driven by the remedy and final site conditions. For a site that is released for unrestricted use, the LTS&M program may consist of managing records and responding to stakeholder inquiries. If final site conditions are such that some uses must be restricted, or future disposal of residual contamination must be managed, DOE will enforce the land use controls discussed above and develop measures to ensure that the site poses no unacceptable risks to human health or the environment. In addition to records management and stakeholder response, LTS&M activities at this type of site may include inspections, monitoring, maintenance, and management of institutional controls. Inspection would include monitoring land use to ensure that use restrictions are observed.

**Institutional Controls**—In some instances, contamination may be left in place if it poses no unacceptable risk, and the benefit of remediation is not commensurate with the cost of, or damage caused by removing the contamination. USACE conducts remediation in accordance with the processes described in CERCLA, and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). Typically, any contamination left in place would invoke CERCLA provisions for periodic review to ensure the remedy remains protective. The MOU stipulates that this responsibility rests with DOE.

Ensuring protectiveness relies on preservation of knowledge to ensure that residual contamination is properly managed if land use changes. The current owner or tenant of a site must remain aware of the material left in place to ensure that the material is not disturbed. If the material is disturbed or becomes accessible, DOE must be informed to reevaluate risk and, if necessary, properly manage the material.

For instance, the remedy selected by USACE for the St. Louis Airport Site provides for leaving inaccessible residual radioactive contamination in place beneath major highways and other structures and applying institutional controls [6]. DOE LTS&M responsibilities will include managing the controls to ensure that residual contamination is not disturbed without proper oversight; and periodically evaluating conditions and certifying that the remedy remains protective. DOE was offered the opportunity to read the draft institutional controls plan to ensure that the DOE is cognizant of the LTS&M requirements, to allow DOE to bring any potential impediments to implementation to USACE's attention, and to allow DOE to incorporate the requirements into their out-year planning.

**Reuse and Redevelopment**—Redevelopment decisions should be made with knowledge of site conditions. DOE must be able to ascertain that the proposed reuse will not result in unacceptable risk. Preserved knowledge of site activities and conditions is reviewed to evaluate risk associated with property reuse.

## **PROGRAM-LEVEL COORDINATION**

Initial DOE and USACE interaction began in 1997 when remediation responsibilities were assigned to USACE. DOE had conducted remediation from the Oak Ridge, TN, office. The records collection in Oak Ridge was segregated into materials pertaining to completed and active FUSRAP sites. The latter collection was conveyed to USACE.

The MOU was developed to clearly define roles and responsibilities of the two agencies and was finalized in 1999.

### **FUSRAP Working Group**

DOE initiated the FUSRAP Site Transition Project in 1999. This effort involved working with USACE to develop a process to transfer remediated sites to DOE for LTS&M. Transition protocols were drafted, and roles and responsibilities were defined.

The Site Transition Project became the FUSRAP Working Group, composed of DOE and USACE managers and support staff. This group has been meeting quarterly since 2001, usually by telephone conference. Discussion points typically include

- Stakeholder inquiries;
- Eligibility determinations;
- Assessment and remediation status;
- Anticipated transition activities;
- Site-specific activities;
- Site visits and public affairs activities; and
- Programmatic issues, such as records and information transfer and management, guidance, and planning.

As with any ongoing forum, program issues are discussed that pertain to the agencies' common interests. Protocols are reviewed for actions such as referrals or transitions. Information exchanges are discussed, as well as DOE interaction at the USACE District Office level.

### **Third-Party Relations**

Both USACE and DOE respond to inquiries from regulators and other stakeholders. In certain circumstances, the agencies recognize a need for a coordinated response to demonstrate to these third party groups that there will be no lapses in protectiveness throughout a site's life cycle. Sometimes, an inquiry must be referred to the other agency.

**Participation in meetings of the Association of State and Territorial Solid Waste Management Officials (ASTSWMO)**—

This organization is a forum for hazardous materials regulators. USACE has been involved primarily to disseminate information and address concerns about remediation and closure of U.S. Department of Defense sites. After 1997, ASTSWMO members asked for information about how postclosure care of remediated FUSRAP sites will be administered. DOE and USACE representatives presented information about on-going activities and LTS&M coordination between the two agencies..

**Exchange and Preservation of Information**

**Access to records in USACE custody**—USACE sorted the records that DOE sent from its Oak Ridge Office in 1997 and submitted those not needed for ongoing remediation work to the Federal Records Center in Kansas City, MO. Inactive DOE FUSRAP records also were retired to the Kansas City center for storage after the agencies agreed to maintain all FUSRAP records at the same facility.

USACE integrated the Oak Ridge records into USACE records at the District level. These records will also be retired by USACE to the Kansas City Federal Records Center. USACE will grant DOE supervised access to the records and has provided index materials for their retired FUSRAP records to DOE.

In 2008, DOE was conducting a broad survey of FUSRAP records. The U.S. Department of Labor (DOL) and the National Institute for Occupational Safety and Health (NIOSH) were researching records to document worker exposure claims. To support these efforts, the USACE Headquarters staff provided index materials describing their holdings to DOL and NIOSH researchers. NIOSH and DOL staff reviewed records in the USACE collection in Kansas City and supplied search results to DOE. DOE incorporated the material into the *FUSRAP Records: Collections, Contents, Access, Custody, and Finding Guidance* (the Finding Aid), a comprehensive guidance to FUSRAP records [7].

In 1997, the DOE FUSRAP contractor at Oak Ridge captured images of the entire FUSRAP records collection on microfilm. USACE ordered four copies of the film, which now resides at USACE District offices. USACE converted the images to digital format, which is maintained by the New York District.

**Access to records in DOE custody**—The roles and responsibilities established in the MOU results in records transfers occurring twice during a typical FUSRAP site life cycle: at referral and at transition. At referral, DOE provides electronic document images of site records and index materials to other records in the DOE collection. DOE records are available to USACE upon request.

**Site Referrals**

If a site is eligible for remediation under FUSRAP, DOE refers the site to USACE. Referrals can occur when a new site is evaluated or when additional assessment or remediation is required for a previously completed site.

Upon commencing an eligibility evaluation, DOE informs USACE of the potential referral and keeps the USACE Headquarters staff informed of the progress of the evaluation. This allows USACE to begin to plan for the referral. Once a site has been referred to USACE, DOE has no further formal role in FUSRAP activities until USACE transitions the site to DOE for LTS&M.

In 2008, DOE was advised by the state regulator that unassessed radiological contamination had been identified at the Middlesex, NJ, Municipal Landfill, a completed FUSRAP site. DOE conducted a radiological survey to confirm the findings and determined that potential MED/AEC contamination remained on the property. DOE prepared the referral package and submitted it to USACE in spring 2009 [8]. DOE staff has provided documentation to USACE in support of the assessment.

In 1986, DOE had determined that the Staten Island, NY, Site, in Richmond Terrace, NY, was ineligible for remediation of contamination caused by handling imported uranium ore. New information was submitted to DOE, and the Office of General Counsel determined that the initial eligibility determination should be revised. DOE formally referred a portion of the Staten Island Site, consisting of a specific portion of the former dock area to USACE for assessment and remediation, if required, in October 2009 [9].

## **PROJECT-LEVEL COORDINATION**

DOE staff coordinates communication with the USACE District Offices through the DOE project manager, who is the liaison for the DOE FUSRAP office. The DOE project manager coordinates communication with the USACE District Offices through the USACE program manager. Several examples of DOE-USACE interaction are provided below.

### **Site Transitions**

DOE assumes responsibility for remediated sites once USACE has implemented the remedy and closed out the site. The transition of responsibilities from USACE to DOE occurs mostly at the District level and is designed to ensure that essential knowledge is passed to DOE for incorporation into DOE LTS&M plans and preservation in DOE records. DOE stewards may visit the site with USACE remediation staff during transition to obtain information on remedy implementation and final site conditions. As a result, DOE staff can document baseline site conditions for use as a point of comparison for future inspections. USACE conveys the administrative record for a site to DOE upon transition. Additional USACE records are retired to the Federal Records Center in Kansas City, MO, and DOE acquires the index materials to those collections.

**Public Affairs Handoff**—As part of the site transition process, DOE seeks to become informed of stakeholder issues and to establish relationships with stakeholders. DOE works to ensure that good information is available and that stakeholder concerns are addressed. This handoff typically entails a meeting between the USACE and DOE public affairs leads and exchange of key contact information. It may also include DOE attendance at public meetings or other availability functions. DOE may release media announcements to inform stakeholders that site responsibility has passed from USACE to DOE. This information also is reflected in information DOE posts on the public website.

**Participation in Stakeholder Meetings**—DOE has attended USACE public meetings held before transition. For instance, USACE invited DOE to the citizen’s meeting for FUSRAP activities conducted by the St. Louis, MO, District Office. Again, stakeholder interest focused on provisions to ensure ongoing protectiveness after transition. DOE representatives presented information about LTS&M and described how knowledge would be preserved and protectiveness ensured in perpetuity for remediated FUSRAP sites. DOE also provided contact information to the public.

**Niagara Falls Storage Site, NY, Vicinity Properties**—At public meetings presented by the USACE Buffalo, NY, District Office, stakeholders expressed concerns about the protectiveness of completed vicinity properties. DOE provided USACE with contact information to disseminate to stakeholders. DOE attended subsequent USACE stakeholder meetings to provide access to stakeholders and inform the public that DOE was responsible for the closed properties at this site.

### Site Visits

DOE has visited sites undergoing remediation to familiarize DOE stewards with site conditions, transfer site knowledge from USACE remedial action managers to DOE staff, and facilitate transition when USACE achieves regulatory closure. To date, DOE staff has visited active FUSRAP sites in Missouri, Ohio, New Jersey, Massachusetts, and New York (Figure 1).



Figure 1. Buffalo, NY, Site visit, September 2009

## **Document Review**

DOE has no formal role in FUSRAP site remedy decisions. However, USACE has advised DOE of cleanup decisions that will affect LTS&M. For instance, the St. Louis District Office provided a draft of the Institutional Controls Management Plan to DOE for informational purposes.

DOE and USACE have discussed final conditions at other sites that would allow the current land use to continue without restriction but would pose unacceptable risk for more conservative exposure scenarios. For example, a site released for unrestricted industrial use may not be protective for residential use. DOE would therefore have to monitor and prevent residential use of such a property and ensure that residual contamination is managed properly if the contamination is disturbed or the property is redeveloped. USACE recognizes that if unacceptable risks would result from certain uses that land use controls are required and DOE is compelled to implement those land use controls and monitor land use.

## **Management and Disposition of DOE-Owned Sites**

In the 1980s, DOE purchased several sites for interim storage of contaminated materials until permanent off-site disposal options became available. Since then, disposal sites have become available that can accept the material, and USACE remedies may include off-site disposal. DOE intends to sell the properties, depending on the implemented remedy, when USACE transitions the sites to DOE.<sup>1</sup>

DOE accounts for these properties as assets. The assets include both land and improvements. In 2008, DOE confirmed the presence and physical condition of the real property associated with the four remaining DOE-owned FUSRAP sites. USACE provided documentation and other information on the assets and escorted DOE staff conducting condition assessment surveys.

To support eventual disposition, DOE is preparing real property disposition packages. Preparation entails review of real property records, including the survey and chain of title, and environmental records needed for compliance with applicable regulations. DOE will cure any defects in the records. USACE has supported the evaluations by providing current real property survey data and descriptions of actual and planned final site conditions.

DOE and USACE coordinated disposition of the Wayne, NJ, Site [11]. USACE provided real property information and documentation of final site conditions. A DOE representative accompanied USACE during a groundwater sampling event to gain site familiarity and observe methods. Although the site has not yet been deleted from the National Priorities List, USACE received concurrence from regulators that the remedy was operating successfully, and allowed the disposition to proceed. DOE transferred the property to Wayne Township in 2006. USACE will assess potential residual contamination in a public right-of-way, but the DOE property requires no further action.

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<sup>1</sup> The four DOE-owned sites are Colonie, NY; Middlesex Sampling Plant, NJ; Maywood, NJ; and Niagara Falls Storage Site, NY.



## CONCLUSION

This paper presents some of the ways in which DOE and USACE coordinate activities to accomplish their respective roles for FUSRAP. Regular communication between the agencies ensures ongoing protectiveness, prompt resolution of issues, delivery of a consistent message for stakeholders, and efficient and successful program execution.

## REFERENCES

1. “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),” March 1999. Available at [http://www.lm.doe.gov/documents/3\\_pro\\_doc/8\\_references/framework/fusrapmou.pdf](http://www.lm.doe.gov/documents/3_pro_doc/8_references/framework/fusrapmou.pdf).
2. U.S. Department of Energy, *U.S. Department of Energy Office of Legacy Management Strategic Plan*, Washington, DC (May 2007), available at [http://www.lm.doe.gov/LM\\_Program/Strategic\\_Plan.aspx](http://www.lm.doe.gov/LM_Program/Strategic_Plan.aspx)
3. Energy and Water Development Appropriations Act of 1998, Public Law 105-62, 11 Stat. 1326.
4. Energy and Water Development Appropriations Act of 1999, Public Law 105-245, 112 Stat. 1843.
5. Comprehensive Environmental Response, Compensation, and Liability Act, Title 42 *United States Code* Section 9601, et seq.
6. U.S. Army Corps of Engineers. Record of Decision for the North St. Louis County Sites St. Louis, Missouri, September 2, 2005. U.S. Department of Energy, *FUSRAP Records: Collections, Contents, Access, Custody, and Finding Guidance* (October 2009).
8. U.S. Department of Energy, “Referral of the Middlesex Municipal Landfill, New Jersey, Site to U.S. Army Corps of Engineers for Additional Evaluation,” letter from D. Geiser, DOE Office of Legacy Management, to General M. Temple, USACE (January 9, 2009).
9. U.S. Department of Energy, “Referral of the Staten Island Warehouse Site, 2393 Richmond Terrace Avenue, Port Richmond, New York, to the U.S. Army Corps of Engineers for FUSRAP Remediation,” letter from D. Geiser, DOE Office of Legacy Management, to General M. Temple, USACE (October 6, 2009).
10. U.S. Department of Energy, *LM Site Management Guide, aka the “Blue Book,”* (December 2009), available at [http://www.lm.doe.gov/Office\\_of\\_Business\\_Operations/Stakeholder\\_Relations.aspx](http://www.lm.doe.gov/Office_of_Business_Operations/Stakeholder_Relations.aspx).
11. U.S. Department of Energy, “Transferring the Wayne, New Jersey, Site to Beneficial Reuse”; Abstract 7455, *Proceedings of Waste Management ‘07*, Tucson, AZ (2007), available at <http://www.lm.doe.gov/default.aspx?id=874>.