

Collaborative Initiatives for Improving the Formerly Utilized Sites Remedial Action Program – 25175

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ABSTRACT

The Formerly Utilized Sites Remedial Action Program (FUSRAP) was established in 1974 by the US Atomic Energy Commission (AEC) to evaluate and remediate sites where radioactive contamination remained from the Manhattan Engineer District and early AEC operations. AEC evaluated potential sites, and the US Department of Energy (DOE) began remediating sites under FUSRAP in 1979. In 1997, Congress assigned responsibility for the characterization and remediation of FUSRAP sites to the US Army Corps of Engineers (USACE). DOE retained responsibility for identifying FUSRAP sites and for long-term stewardship of remediated sites.

DOE, its Office of Legacy Management (LM), and USACE have been jointly administering FUSRAP for the past 28 years. Currently, there are 35 completed sites under LM stewardship throughout 16 states and 20 active sites being remediated by USACE districts in eight states. LM and USACE program and site managers are in different agency offices and have limited opportunities to meet in person during the year.

Over time, the two agencies have developed strategies to effectively navigate program requirements by focusing on numerous collaborative initiatives designed to improve face-to-face interaction, increase LM/USACE dialogue as partners, and promote teamwork. These initiatives translate into overall program efficiency. Together, LM and USACE have established four interagency working groups to find solutions to major issues, including the site transition process, real property transfers, data and records management, and inaccessible soils. The agencies host joint annual meetings, complete with site field trips and workshops. LM attends USACE district site tours with both project-level staff and agency administrators and holds virtual quarterly team updates with the USACE national program manager and various USACE districts to discuss strategic objectives and program goals.

In 2022, USACE and DOE signed an Agreement for Specialized Radiological Services. This agreement, referred to as a “Reverse Memorandum of Understanding” (Reverse MOU), allows all USACE Centers of Expertise, districts, and divisions to request work from LM and any of the 17 DOE national laboratories and directorates. The Reverse MOU creates a single path for all USACE districts to contract with DOE. In the past 2 years, work under the Reverse MOU has been successfully coordinated with three separate USACE districts. The work scope has included technical data and risk reviews, addressing fugitive vapor intrusion and radiological contaminant detection using drones.

To date, LM and USACE staff have participated in nine joint annual meetings and 13 USACE district site tours. Annual meetings have been hosted at various USACE district locations and LM site offices. Field trips have been provided by both LM’s Weldon Spring Site Interpretive Center and the Rocky Flats, Colorado, Site. Workshops have recently been added to the agenda; these activities serve to promote understanding of differing approaches to common issues, cooperation on decision-making, and the sharing of best practices between the agencies.

District tours are attended by both project-level staff and agency administrators. Overall, the meetings and tours, along with quarterly team updates, deliver value by providing information that can be used to improve future site transfer planning schedules and budgets and to identify potential programmatic risks. LM provides support for USACE at public meetings; most recently it set up an information table at the Niagara Falls Storage Site, New York, Site to answer stakeholder questions and discuss the LM Beneficial Reuse Program. LM attendance at these meetings provides opportunities to gain insight into the community viewpoint and to begin fostering stakeholder relationships at each FUSRAP site.

LM and USACE continue to coordinate approaches related to emergent issues, news and social media releases, and media monitoring to ensure responses to stakeholder inquiries are effective. LM's public affairs manager communicates with USACE's public affairs manager on a monthly basis and more frequently as needed about emergent issues. LM's FUSRAP manager and USACE's national program manager communicate regularly and look for opportunities to continually improve processes for immediate collaboration on responses to inquiries.

These collaborative tools have created a cohesive and responsive interagency team that in turn enhances the productivity of the overall program and facilitates comprehensive and cost-effective site transfers.

INTRODUCTION

The Formerly Utilized Sites Remedial Action Program (FUSRAP) was established in 1974 by the US Atomic Energy Commission (AEC) to evaluate and remediate sites where radioactive contamination remained from the Manhattan Engineer District (MED) and early AEC operations. AEC evaluated potential sites, and the US Department of Energy (DOE) began remediating sites under FUSRAP in 1979. In 1997, Congress assigned responsibility for the characterization and remediation of FUSRAP sites to the US Army Corps of Engineers (USACE). DOE retained responsibility for identifying FUSRAP sites and for long-term stewardship of remediated sites. In 1999, DOE and USACE developed a Memorandum of Understanding (MOU) to jointly administer and execute FUSRAP [1].

DOE, its Office of Legacy Management (LM), and USACE have been jointly administering FUSRAP for the past 28 years. Currently, there are 35 completed sites under LM stewardship throughout 16 states and 20 active sites being remediated by USACE districts in eight states. LM and USACE program and site managers are in different agency offices and have limited opportunities to meet in person during the year.

Over time, the two agencies have developed strategies to effectively navigate program requirements by focusing on collaborative initiatives designed to increase face-to-face interaction, increase LM/USACE dialogue as partners, and promote teamwork. These initiatives also translate into overall program efficiency. Together, LM and USACE:

- Established four interagency working groups to find solutions to major issues.
- Hosted nine joint annual meetings, complete with site field trips and workshops.
- Attended 13 USACE district site tours with both project-level staff and agency administrators.
- Coordinated approaches related to emergent issues and news and social media releases.
- Signed an Agreement for Specialized Radiological Services (or Reverse MOU) that allows all USACE Centers of Expertise, districts, and divisions to request work from LM and any of the 17 DOE national laboratories and directorates.
- Signed the *USACE Rapid Response Support for LM Sites and Facilities (USACE RR-TCX)* agreement, which provides USACE emergency response support for actions exceeding LM's in-house capabilities.

- Developed a joint information transfer and transition protocol for FUSRAP that documents an agreement for transferring information from USACE to LM and applies to the data and records for all FUSRAP sites.

In total, these strategies provide benefits to the operation of FUSRAP. Implementation has created a cohesive and responsive interagency team that in turn enhances the productivity of the overall program and facilitates comprehensive and cost-effective site transfers. These strategies promote understanding of differing approaches to common issues, cooperation on decision-making, and the sharing of best practices between the agencies.

INTERAGENCY WORKING GROUPS

Between 2016 and 2020, LM and USACE formed four specific working groups, as described below. Overarching goals include (1) exchanging information, (2) arriving at a consensus, and (3) defining a path forward. The working groups will continue to be used as a tool to enhance FUSRAP and execute common mission goals between the two agencies.

Real Property Working Group

Real property includes land and anything permanently affixed to it, such as buildings, fences, and utilities. Complete and accurate information on real property holdings is critical to the federal government for managing facilities and reporting to the US General Services Administration, the US Office of Management and Budget, Congress, and taxpayers. Specific goals of the Real Property Working Group included:

- Identifying USACE and LM real property roles and responsibilities as described in the MOU [1].
- Defining real property terms related to the transition and transfer of FUSRAP sites.
- Developing a real property inventory checklist for active FUSRAP sites.

The Real Property Working Group held regular meetings from December 2016 through April 2017 to discuss concepts and processes related to real property. By spring 2017, the group had developed a common understanding of these issues, allowing the group to successfully define real property interests and requirements, develop checklists to document real property assets at active FUSRAP sites, and establish timing for site transfers from USACE to LM. The products resulting from this working group assist in providing accurate inventory, management, and planning for all DOE real property assets.

Data Management Working Group

One of LM's primary goals during and after the transfer of a site is to preserve, protect, and share legacy records and information. As part of this long-term legacy mission, LM assumes ownership and custody of records from the completed FUSRAP sites [2].

In accordance with the MOU, USACE "Upon completion of FUSRAP activities, shall provide a copy of surveys, findings, decision documents, and access agreements for property not owned by the government, as well as close out documents, to DOE for the historical record. This includes all sites determined eligible, whether or not any response action was taken." The MOU also states that DOE "shall maintain records of determination of eligibility and other files, documents and records associated with the site" [1].

The Data Management Working Group was active from March 2017 through June 2018. The primary goals of the working group were to:

- Develop a common understanding of LM and USACE district-specific data, records practices, and requirements as they can be consistently applied to FUSRAP programmatic documents for site transition and transfer.
- Establish methods to ensure accurate and consistent data transfer.
- Develop a timeline for data and records transfer.

The achievement of these goals resulted in the development of the *Joint U.S. Army Corps of Engineers and U.S. Department of Energy Office of Legacy Management Information Transfer/Transition Protocol for the Formerly Utilized Sites Remedial Action Program*, a guidance document that ensures LM and USACE district-specific data, records practices, and requirements applicable to FUSRAP documents for site transfer are clearly understood by both parties [3]. The guidance document establishes methods for maintaining accurate and complete information and for data transfer between the agencies. Consistent and comprehensive methods are key to transferring project information as the FUSRAP sites transition from USACE to LM, and the efficient transmittal of records improves stakeholder responsiveness and saves taxpayer dollars.

Environmental Data Management System Working Group

For seamless stewardship of the FUSRAP sites, the need for an effective method for electronic transfer of environmental data between LM and USACE was identified. In addition to transfer methods, an inventory of electronic monitoring and survey data needed to generate site stewardship documents (e.g., drawings, tables, and maps), databases, and software was developed to support the site transfer process.

The Environmental Data Management System Working Group was active from October 2020 through January 2021. The primary goals of the working group were to:

- Compile and implement a USACE programwide environmental data management system to promote optimizations under repository for all FUSRAP site environmental data.
- Improve data integrity through the use of a standard environmental data schema.
- Improve ease of data access.
- Create custom data reporting options for project staff.

The environmental data addressed included: site analytical data, geologic and geochemical data, site groundwater measurement data, site boring log and well completion data, site environmental measurement information data, and site documents. The successful implementation of the working group recommendations will result in increased accuracy for data transfer between agencies and cost savings during site closeout and transfer.

Inaccessible Soils Working Group

In some instances, contamination may be left in place at a FUSRAP site if it poses no unacceptable risk, if the benefit of remediation is not commensurate with the cost of removal, or if damage would be caused by removing it. USACE conducts remediation in accordance with the processes described in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the National Oil and Hazardous Substances Pollution Contingency Plan. Contamination left in place after remediation is complete invokes CERCLA provisions for periodic review to ensure the remedy remains protective. The MOU stipulates that this responsibility rests with DOE [1].

Ensuring protectiveness relies on the preservation of knowledge to ensure that residual contamination on a site is properly managed. The current owner or tenant of a site must remain aware of any contamination

left in place to ensure that any required controls are maintained. If the contamination is disturbed or becomes accessible, LM must be informed so that it can reevaluate risk and, if necessary, properly manage the material.

The Inaccessible Soils Working Group was chartered in 2020 to address the preservation of knowledge and the management of sites with inaccessible soil as the sites transfer from USACE to LM. The primary goals of the Inaccessible Soils Working Group are to:

- Define how inaccessible soils will be handled after the sites have been transferred from USACE to LM.
- Determine a strategy for performing minor maintenance activities without having to refer the site back to USACE for remedial actions. Maintenance activities would be used to assist a landowner with the planned or unplanned removal of soils determined to be a risk when they become accessible, either during an emergency excavation or during planned work.
- Provide updated estimates for the quantity of inaccessible soil that will remain at the sites when they transfer to LM for stewardship.

The expected results of this working group will be (1) a better understanding of the amount of inaccessible soil that will be present on the FUSRAP sites at the time of transfer to LM, (2) a cohesive strategy for the handling of these soils if they become accessible, and (3) overall cost savings to the government by allowing LM to perform minor maintenance activities without having to refer the site back to USACE for remedial actions.

Recent agreements on a path forward include:

- Use of the *USACE Rapid Response Support for LM Sites and Facilities (USACE RR-TCX)* agreement, which will allow for a timely response by LM and USACE when inaccessible material is made accessible at a completed FUSRAP site. The agreement provides fast-track, turn-key, time-sensitive services, not only for emergency situations, but for situations that require quick action.
- Maintaining an interagency agreement with USACE to allow for characterization and disposal of any inaccessible materials that become accessible because of any utility support projects during site stewardship but do not warrant transfer of a FUSRAP site back to USACE.
- Developing a strategy to quantify potential inaccessible support costs for life-cycle baseline and environmental liability estimates based on USACE experience.

INTERAGENCY MEETINGS AND SITE TOURS

Joint FUSRAP Annual Meeting

In October 2015, LM and USACE held the first annual joint FUSRAP meeting in Omaha, Nebraska. This event set the cornerstone for increased collaboration between USACE and LM. It was at this meeting that newer LM FUSRAP team members and USACE project managers began fostering meaningful relationships, and the formation of working groups was first discussed. Subsequent meetings have been held at various USACE district offices or LM sites across the country, from Pittsburgh, Pennsylvania, to Denver, Colorado. The ninth annual joint program meeting was held in Oak Ridge, Tennessee, in October 2024.

Over time, the meetings have been extended to include group field trips and technical workshops. Field trips have included a site tour of the Rocky Flats, Colorado, Site; the Weldon Spring Site Interpretive

Center and disposal cell; and both the K-25 History Center and the East Tennessee Technology Park (ETTP) in Oak Ridge, Tennessee.

The former Rocky Flats Plant was part of the MED/AEC nationwide nuclear weapons complex that manufactured nuclear weapons components. It is now a national wildlife refuge and recreational area. The Weldon Spring Interpretive Center and disposal cell are at the former Weldon Spring Uranium Feed Materials Plant (Weldon Spring Chemical Plant). The K-25 History Center focuses on the construction and operation of the MED/AEC-era K-25 uranium enrichment complex. The ETTP, a thriving multiuse industrial park, was once the Oak Ridge Gaseous Diffusion Plant. The field trips allow attendees to see how previously contaminated sites have been redeveloped for beneficial reuse. Field trips also provide the opportunity to expand knowledge about completed sites and long-term monitoring activities.

To date, technical workshops have focused on interagency communication and risk management strategies. Workshops have consisted of a mix of participants from the USACE districts, LM and contractors. A Communication Strategies session held at the 2023 Annual Meeting evaluated what specific types of communication should occur and determined the lines of communication for each organization and the associated time frames for a variety of scenarios. The results from the workshop were used to improve communication practices between organizations. The Risk Management session held during the 2024 Annual meeting evaluated the risk priority and tolerance for various risk elements and their effect on FUSRAP sites and programs. These risk elements included (1) Identification of Funding Risks, (2) Lack of Contracting Resources, and (3) Disposal Issues. The results from the workshop were used to inform programmatic decisions and risk reporting.

Technical workshops have promoted a better understanding of differing agency approaches to common issues, reinforcing the importance of cooperation on decision-making, and encouraging the sharing of best management practices between the agencies.

Site Tours

To accomplish the FUSRAP mission in an effective and efficient manner, close collaboration between LM and USACE is essential. One tool used to enhance this collaboration has been the initiation of site tours to view the status of active remediation of FUSRAP sites in various USACE districts. In addition to promoting collaboration between LM and USACE, the site visits facilitate relationships with local, state, and other federal agency stakeholders, who often attend site tours. LM has attended 13 site annual visits to date. Over 16 active sites have been visited within the USACE North Atlantic Division, Buffalo District, and St. Louis District. Virtual tours were held during the pandemic.

Overall, the tours deliver value by providing information that can be used to improve future site transfer planning schedules and budgets and identify potential programmatic risks.

As an outreach opportunity related to the site tours, LM provides support for USACE at public meetings; it most recently set up an information table at the Niagara Falls Storage Site, New York, Site to answer stakeholder questions and discuss the LM Beneficial Reuse Program. LM attendance at these meetings provides opportunities to gain insight into the community viewpoint and to begin fostering community stakeholder relationships at each FUSRAP site.

Additional collaborative efforts that grew from the site tours and annual meetings include LM support of the St. Louis sites Five-Year Review performed by USACE and stakeholder engagement support in responding to federal information requests.

A FUSRAP historical display has been created with input from both LM and USACE. The historical display is a public-facing, free-standing interpretive exhibit that communicates FUSRAP history and community significance, provides an understanding of the diverse geographic locations related to the various types of work performed in support of AEC/MED activities and provides a summary overview of agency responsibilities. The exhibit is intended for public viewing and can be transported to events, conferences, meetings, and FUSRAP communities by request. The display was first presented as part of the 2022 Waste Management Symposia in Phoenix, Arizona. In September 2022, the display was officially unveiled at DOE Headquarters in the James V. Forrestal Building in Washington, D.C. Distribution of the FUSRAP historical display for use by both agencies shows the continued collaboration between agencies.

Quarterly Meetings

LM holds virtual quarterly team updates with the USACE national program manager and separately various USACE districts to discuss strategic objectives and program goals. These meetings provide the opportunities to continually improve processes for immediate collaboration on responses to inquiries and provide LM with routine status updates on site remediation progress and potential issues.

REVERSE MOU

In 2022, USACE and DOE signed a National Laboratory Network Agreement for Specialized Radiological Services. This agreement, referred to as a “Reverse Memorandum of Understanding” (Reverse MOU), allows all USACE Centers of Expertise, districts, and divisions to request work from LM and any of the 17 DOE national laboratories and directorates. The Reverse MOU creates a single path for all USACE districts to contract with DOE’s National Laboratory Network to support the remaining cleanup of complex FUSRAP sites. In the past 2 years, work under the Reverse MOU has been successfully used to coordinate the support of three national laboratories with three separate USACE districts:

- The Savannah River National Laboratory has provided independent technical review of sampling methodology and data quality, as well as risk and stakeholder communication support, at high-visibility vicinity properties in support of the USACE St. Louis FUSRAP Program. The laboratory has also recently begun providing engineering support for a complex design for remediation of a waste containment structure containing K-65 residues within the USACE Buffalo District. The residues emit high levels of gamma radiation and produce radon gas, both of which present a risk to human health and the environment.
- The Lawrence Berkeley National Laboratory and the Pacific Northwest National Laboratory will deploy their technologies at a site in the USACE North Atlantic Division to assist with exploring technologies to characterize fugitive vapor emissions and the use of drones for aerial gamma radiation surveys.

To date, the relationships developed under the Reverse MOU have fostered strong partnerships in a short time. LM, USACE, and the National Laboratory Network are adapting the program, where pertinent, to accommodate the maturation of these partnerships. The ongoing integration of the available special services provided by the DOE National Laboratory Network will help to ensure that the FUSRAP mission for the remaining complex sites is conducted in the most efficient and safe manner possible.

PUBLIC AFFAIRS COORDINATION

The LM public affairs office (PAO) communicates with the USACE PAO on a monthly basis and more frequently as needed about emergent issues and media updates. Effective, accurate and early communication results in a consistent message for both the public and for senior leadership within each agency. Joint communication strategies have encompassed actions such as weekly coordination meetings to provide status on individual actions related to a site, setting up technical and executive liaisons and keeping stakeholders involved. Communication tools may include situational briefs, executive memos, a communication playbook describing issues by site, and weekly summaries of news and social media updates. A key focus for the PAOs is deliberate communication planning. Deliberate planning focuses on forward thinking on pertinent issues and considers avenues for the agencies to get involved with the community early on.

CONCLUSIONS

LM and USACE are using several collaborative strategies to create a cohesive and responsive interagency team that in turn enhances the productivity of the overall program and facilitates comprehensive and cost-effective site transfers.

REFERENCES

1. US DEPARTMENT of ENERGY and US ARMY CORPS of ENGINEERS, *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).
2. US DEPARTMENT of ENERGY, *Records and Information Management Transition Guidance*, LM-Guide-4-10.2-1.0-0.0, Office of Legacy Management (November 2017).
3. US DEPARTMENT of ENERGY and US ARMY CORP of ENGINEERS, *Joint U.S. Army Corps of Engineers and U.S. Department of Energy Office of Legacy Management Information Transfer/Transition Protocol for the Formerly Utilized Sites Remedial Action Program*, LMS/S20093, Office of Legacy Management (June 2023).