

CONTINUING THE SUCCESS OF THE FUSRAP PROGRAM ON A DE-CENTRALIZED BASIS

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ABSTRACT:

The Formerly Utilized Sites Remedial Action Program (FUSRAP) is a U.S. Army Corps of Engineers-managed program whose purpose is to clean up or otherwise control sites where residual low-level radioactive contamination remains at sites formerly used for uranium processing, extrusion, and machining; thorium processing, and radioactive materials storage as part of the nation's early nuclear energy and defense programs. The sites are being managed through six USACE Districts (Baltimore, Buffalo, New England, New York, Philadelphia and St. Louis) and employ specialty resources obtained from the USACE's centers of excellence for Hazardous, Toxic and Radioactive Waste (HTRW). USACE is effectively managing FUSRAP on a de-centralized basis, as demonstrated by the progress made in FY 1998 in the New York and St. Louis District sites.

INTRODUCTION

When Congress transferred management of the Formerly Utilized Sites Remedial Action Program (FUSRAP) from the U.S. Department of Energy (DOE) to the U.S. Army Corps of Engineers (USACE) in October 1997, USACE de-centralized management of the program. Whereas the U.S. Department of Energy had consolidated its management in Oak Ridge, Tennessee, USACE assigned management responsibilities to six Districts in which the remaining FUSRAP sites are located: Baltimore, Buffalo, New England, New York, Philadelphia and St. Louis. This de-centralized approach to FUSRAP management mirrors the organization structure of USACE, which invests a large degree of autonomy to District engineers. Moreover, de-centralization is consistent with the master strategy and goals of USACE, and has allowed USACE to achieve significant progress toward remediating the remaining FUSRAP sites.

USACE also has been able, through its de-centralized approach, to maintain momentum by continuing and, in some cases, accelerating current remediation activities while developing its final cleanup remedies. Because USACE can draw upon a wide variety of expertise, the individual Districts have been able to manage the remediation activities initially planned under the U.S. Department of Energy's purview while preparing the environmental documentation necessary to achieve final, permanent remedies for the sites. Indeed, in many cases, as discussed below, the Districts have been able to accelerate old remediation schedules and fast-track the development of Records of Decision.

THE NEW YORK DISTRICT

The Maywood Site

The Maywood Site consists of the federally owned Maywood Interim Storage Site and 84 vicinity properties in the boroughs of Maywood and Lodi and the Township of Rochelle Park, located in Bergen County, New Jersey. Contamination resulted from commercial thorium processing at a former chemical facility in Maywood; the contamination migrated off site via the

Lodi Brook to the vicinity properties. The site was assigned to FUSRAP by Congress, and is listed on the National Priorities List. There is a Federal Facilities Agreement between the DOE and the U.S. Environmental Protection Agency, Region II. A Record of Decision is expected in 1999.

In the 1980s, 25 vicinity properties were remediated, and the contaminated soil was stored in a pile at the Maywood Interim Storage Site. In 1996, removal of the pile was completed, and the material was shipped out-of-state to a licensed disposal facility. Another 13 vicinity properties were remediated between 1995 and 1997, and the wastes were shipped out-of-state for disposal. By October 30, 1998, the New York District completed remediation of 14 vicinity properties, and work is underway at six additional properties. USACE has remediated the FY98 properties more quickly than DOE had scheduled on its baseline. USACE also has accelerated cleanup of the FY99 properties. This acceleration is possible because USACE implemented several cost-saving measures, including using its contract -- with a lower rate -- for disposing the radioactive material at the out-of-state facility. Simply changing to the USACE disposal contract netted nearly \$1 million in savings alone, money that could be used to remediate additional properties.

The savings, coupled with the District's ability to secure more funding, have allowed USACE to project completion of all Phase I (residential) properties by November 1999 -- months ahead of schedule. While Phase I work is being completed, USACE intends to begin work on Phase II work (commercial and industrial properties) this year. USACE is committed to disrupting operations as little as possible, so the Phase II work especially will require precise planning and project controls.

Among the issues still to be resolved for the Maywood Site are the schedule for issuing a site-wide Record of Decision, remedy selection for the Maywood Interim Storage site and the commercial/industrial vicinity properties, state endorsement of cleanup criteria and the future use of the Maywood Interim Storage Site.

The Wayne Site

Another New York District FUSRAP site is located in Wayne, New Jersey. Contamination resulted from commercial thorium processing at the former W.R. Grace facility; the contamination migrated off site via the Sheffield Brook to the vicinity properties. The site was assigned to FUSRAP by Congress, and is listed on the National Priorities List. There is a Federal Facilities Agreement between USACE and the U.S. Environmental Protection Agency, Region II. A Record of Decision for the Wayne Site is expected in 1999.

A total of 18 vicinity properties were remediated in the 1980s, and those wastes were taken to the Wayne Site for storage. Pile removal began in 1995 and was completed at the end of 1997 when the last loads of contaminated soil were shipped by rail to an out-of-state disposal facility.

USACE is operating under an Engineering Evaluation and Cost Analysis (EE/CA) that calls for removal and disposal of up to 40,000 cubic yards of the most contaminated subsurface soil. Excavation and shipment of the initial 20,000 cubic yards is expected to be complete by mid-March 1999. USACE also completed additional characterization of the subsurface contamination

in the spring of 1998, and that data are being evaluated during development of the Feasibility Study and Proposed Plan. Once the Record of Decision is signed, work on the final remedy will begin, hopefully by late 1999.

By using a turnkey subcontract, USACE was able to save more than \$3 million during excavation, transportation and disposal of the pile at the Wayne site. The turnkey approach also transferred much of the risk to the subcontractor and provided significant flexibility in defining the details of performance.

A total of about 57,000 cubic yards remain at the Wayne Site.

Several issues associated with the Wayne Site remain to be resolved in 1999, including issuance of the Record of Decision. Besides establishing the cleanup criteria for the site, the Record of Decision will address the remediation of groundwater contamination at the site. Other issues that need to be resolved include determining the future use of the Wayne Interim Storage Site (current zoning is residential), the role of W.R. Grace as a Potentially Responsible Party, and the role of treatment in management of the subsurface materials.

The Middlesex Sampling Plan

The Middlesex Sampling Plan (MSP) consists of two storage piles from the 1980s cleanup of 30 vicinity properties and the Middlesex Municipal Landfill. Contamination of the site occurred from MED/AEC sampling, storage and shipment of uranium, thorium and beryllium ores at the MSP in the 1940s and 1950s.

The vicinity properties and landfill cleanups were completed in the 1980s. Cleanup of a drainage ditch and demolition of the process building and boiler house were completed in 1996. USACE completed removal of one of the two storage piles and disposed of building steel from earlier demolition activities in FY97. Remaining work includes cleanup of site grounds and the two remaining on-site buildings. Upon completion of removal of one of the storage piles, the site was placed in a safe-shutdown mode, and is being monitored until USACE develops its final cleanup remedy for the site. A Record of Decision is anticipated in late 1999.

The Colonie Site

A former industrial site near Albany, New York, the Colonie Site was used by National Lead from the 1930s to the 1980s for non-governmental chemical and radioactive foundry, electroplating and operations involving uranium and thorium. Congress assigned the Colonie Site to FUSRAP in 1984.

Accomplishments at the site include completing Resource Conservation and Recovery Act (RCRA) closure activities, dismantling the main plant building and remediating 53 of the 56 vicinity properties. The three vicinity properties -- owned by the Town of Colonie, Niagara Mohawk Power Corp. and Conrail -- and the site grounds remain to be addressed by USACE.

USACE plans to excavate, treat as appropriate and dispose of the soils with radioactive and chemical contamination. A Record of Decision for the site is being developed in 1999, and the site is being maintained and monitored.

THE ST. LOUIS DISTRICT

On October 17, 1997, Congress gave USACE a high profile mission – management of FUSRAP. The Operations Order (OPORD) for FUSRAP gave responsibility for remediation of four Missouri sites and one Illinois site to the St. Louis District. These sites represent potentially one-half of the volume of contaminated material for the entire program.

USACE has established a corporate approach to FUSRAP execution. The St. Louis, Kansas City and Louisville Districts joined in a virtual team environment, seamlessly utilizing its extensive Hazardous, Toxic, Radioactive Waste (HTRW) technical and construction experience throughout USACE and existing contract vehicles to transition FUSRAP from the DOE.

Upon transfer of FUSRAP, this team inherited a site that had not reached regulator and public consensus for remediation and did not have environmental documentation in place to allow execution of a \$36.1 million budget in FY98. After an on site local presence was established the team effectively opened, developed and maintained lines of communication with the regulators, congressional officials and a local oversight committee. The team developed a plan and enhanced its credibility and reputation by producing the deliverables and reaching consensus on cleanup criteria with the regulators and oversight committee.

In nine short months the St. Louis, Kansas City and Louisville team produced three critical environmental documents within a nine-month period, one of which, a Record of Decision, the team inherited a Federal Facilities Agreement enforceable milestone with stipulated penalties. This was a significant accomplishment given the intense scrutiny by regulators and local oversight officials.

In addition, the team developed site infrastructure to expand our remediation shipping capabilities by constructing two rail-loading facilities. The end result was the remediation of 23,000 cubic yards from the site in FY98. For FY99 the total program has been expanded to \$42.8 million. The primary goal of all St. Louis District FUSRAP cleanup activities is to restrict the release of contaminated materials and minimize potential impacts to human health and the environment.

The St. Louis Airport Site

The St. Louis Airport Site (SLAPS) consists of 21.7 acres adjacent to Lambert International Airport located in north St. Louis County, Missouri. The site was used from 1946 to 1966 by the Manhattan Engineer District (MED) and Atomic Energy Commission (AEC) to store radioactive process byproducts and residues from uranium processing which occurred at the St. Louis Downtown Site (SLDS). The site was later sold to the City of St. Louis in 1973. In 1989, Congress placed the site on the National Priorities List (NPL). The primary contaminants of concern on the SLAPS are radium-226, thorium-230 and uranium-238. There is a Federal

Facilities Agreement between USACE and the U.S. Environmental Protection Agency for the St. Louis sites.

USACE is currently conducting site stabilization activities under the authority of an EE/CA. These activities include the development of a Sedimentation Basin, remediation of the northern ditch of the site and the start of stabilization of the East End. As a predecessor to support future site operations, a rail loading facility was constructed by USACE on the site, increasing shipment capability by 167 percent. This facility, where 5,000 cubic yards can be staged for shipment, alleviates the need for transport of material by truck across nearby heavily trafficked roads and facilitates a coordinated USACE shipping campaign throughout the year to minimize railcar turnaround time at the disposal facility. The final remedy for the site, a Record of Decision, is currently under development by the St. Louis District.

The next significant activity will be the removal of the site hotspot, the radium pits. The team is currently transitioning from a Preplaced Remedial Action Contract (PRAC) to a Total Environmental Restoration Contract (TERC) to provide turnkey operation of the site, which currently includes the remediation of 270,000 cubic yards of accessible contaminated material.

The Hazelwood Interim Storage Site

The Hazelwood Interim Storage Site (HISS) is an 11-acre tract in north St. Louis County that comprises the majority of the Latty Avenue Properties. HISS was used from 1966 to 1974 to store approximately 117,000 tons of uranium processing residues, which were transported, from the SLAPS. Improper storage, handling and transportation caused the spread of contaminated materials to nearby vicinity properties. Congress placed the HISS on the NPL in 1989. The site was contaminated primarily with radium-226, thorium-230, uranium-238 and progeny, metals and organic compounds.

USACE is in the process of constructing a rail loading facility, which will facilitate transportation of the contaminated material offsite to a licensed disposal facility. Construction is proceeding under the authority of an EE/CA, which was approved in June of 1998. Additional authorized work consists of removal of the piles, approximately 40,000 cubic yards, and the remediation of two Vicinity Properties. This EE/CA will allow the district to conduct cleanup activities until a comprehensive solution is finalized. The final remedy for this site, a Record of Decision that also includes the SLAPS, is under development by the St. Louis District. This Record of Decision will permit the district to remediate an additional 98,000 cubic yards below the surface.

The St. Louis Downtown Site

The St. Louis Downtown Site (SLDS) and vicinity properties are located at and around the Mallinckrodt, Incorporated plant in the city of St. Louis, Missouri. Mallinckrodt Chemical Works facilities were used for uranium processing for the MED and, later, the AEC in the 1940s and 1950s. The processing of ore resulted in releases of spent ore, process chemicals, radium, thorium and uranium into the environment. The extent of contamination includes 17 acres where contaminated soils are accessible for remediation (17 buildings, subsurface soil and 6 vicinity properties) without major disruption of plant operations. An additional seven acres of

contaminated material are presently inaccessible for cleanup because active railroad lines, warehouses, and manufacturing facilities cover them. The primary contaminants of concern, as listed in the approved Record of Decision for the site are: radium-226, thorium-230, uranium-238, cadmium and arsenic.

The final site remedy consists of the excavation and disposal of approximately 87,000 cubic yards of accessible soils to a composite criteria to 4 to 6 feet and to an industrial standard below that depth. Mallinckrodt owns the property and operates an active chemical / pharmaceutical manufacturing operation on the site. The company has also manufactured radionuclide products independent of government operations. The vicinity properties are active industrial operations owned by others.

The St. Louis and Kansas City Districts are utilizing a TERC, in conjunction with the site Architect/Engineer (A/E) contract to provide remediation services for the 87,000 cubic yards of accessible soils at the site. This unique relationship has leveraged the comprehensive A/E site knowledge to produce a project cost savings, over \$3 million to date, through precision excavation and alternative designs.

The St. Louis Airport Site Vicinity Properties (SLAPS VPs)

The St. Louis Airport Site Vicinity Properties (SLAPS VPs) consists of 78 properties in north St. Louis County. The contaminated sites include the former ball fields directly north of SLAPS, area haul roads and Coldwater Creek. The primary contaminants of concern are radium-226, thorium-230 and uranium-238. Dispersion of radioactive material occurred either through direct migration from SLAPS, by air or water, or through vehicular dispersion along the roadways (this is the case for most of roadway shoulder and ditch contamination). The properties are owned by state, commercial, industrial and residential interests and are being used for those respective purposes. Twenty-four of these properties have been remediated to date. Approximately 111,000 cubic yards of contaminated material has been excavated and disposed during remediation activities.

CONCLUSIONS

Perhaps the most demonstrable benefits of de-centralization is the increased responsiveness to field conditions and more effective use of funding. By assigning responsibility for the individual FUSRAP sites to the Districts in which they are located, USACE has been able to accelerate cleanup schedules and maximize funding. Decision makers are available at any time to meet with regulators and other stakeholders, and agreements are made at the District level more quickly than could be made at the centralized headquarters level. In addition to more rapid decision making, overall program costs are reduced with the elimination of travel from headquarters to the field. Moreover, the expertise required for the various technical challenges posed by FUSRAP sites is available to all Districts, instead of being duplicated at each District.