

FUSRAP - THE VISION CONTINUES POINTING TOWARD SUCCESS

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ABSTRACT

The Formerly Utilized Sites Remedial Action Program (FUSRAP) became a U.S. Army Corps of Engineers (USACE) managed program as a result of legislation contained in the Energy and Water Development Appropriations Act of 1998, which was passed by Congress and signed into law by the President in October 1997. The purpose of the FUSRAP program 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 a part of our early nuclear energy and defense programs. This paper summarizes USACE's 90 day Assessment Report to Congress, its accomplishments during its first year in FY1998 and presents USACE's plan for the future.

INTRODUCTION

The Formerly Utilized Sites Remedial Action Program (FUSRAP) was initiated in 1974 by the Atomic Energy Commission (AEC) under authorities granted by the Atomic Energy Act of 1954, as amended. FUSRAP was managed by the U.S. Department of Energy (DOE) from 1981 to 1997. On October 13, 1997, management of FUSRAP was transferred by Congress to the U.S. Army Corps of Engineers (USACE) under the Energy and Water Development Appropriations Act of 1998.

The mission and objectives of FUSRAP fall within the overall Hazardous, Toxic, and Radioactive Waste (HTRW) cleanup mission of USACE. FUSRAP's mission is to identify, evaluate, and clean up or control sites where residual radioactivity exceeding current guidelines remains from Manhattan Engineer District (MED)/AEC contract activities and other sites assigned by Congress. Program objectives are to:

- Identify and evaluate sites where authority and need for response action exist
- Clean up or control the sites to ensure protection of public health and the environment

- Dispose of or stabilize radioactive material in a way that is safe for the public and the environment
- Perform work in compliance with applicable federal, state, and local environmental laws, regulations, and land use requirements
- Certify the sites for appropriate future use

FUSRAP currently includes 46 sites in 14 states (Fig. 1). Sites where remedial action is ongoing are managed through six USACE districts (Baltimore, Buffalo, New York, New England, Philadelphia, and St. Louis Districts). At the end of FY 1997, the DOE had completed radiological cleanup at 25 sites, and 13 other sites had been partially remediated. More than 200 vicinity properties have also been remediated. This paper briefly reviews the origin and history of the program, summarizes USACE's accomplishments since inheriting the program in October 1997 and outlines its path forward to program completion.

FUSRAP—46 SITES IN 14 STATES

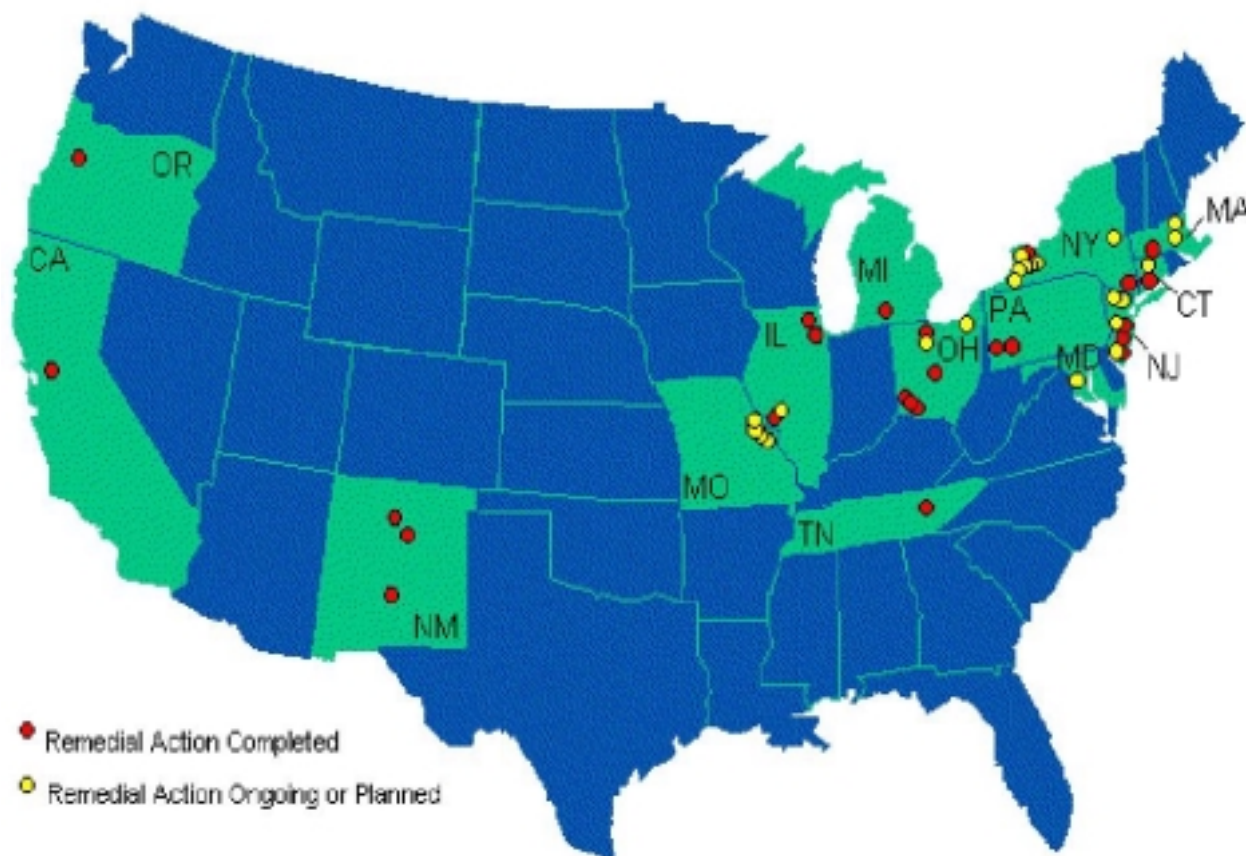


Figure 1. FUSRAP Sites

ORIGIN AND BACKGROUND OF FUSRAP

During the 1940s, 1950s, and 1960s, many federal and commercial sites in the United States were used to process and store uranium and thorium ores or for other work supporting the atomic energy program. Most FUSRAP sites were involved in work for MED during World War II or in nuclear activities for AEC. Congress has also added several other sites where industrial contamination is similar to the material from MED/AEC operations.

Established in 1942 under the jurisdiction of the Army as the lead agency in development of nuclear energy, MED was responsible for process development, engineering design, materials procurement, and site selection for the nuclear energy program. MED responsibilities were transferred to AEC in 1946.

Contracted work was conducted at national laboratories, universities such as the University of Chicago and the University of California at Berkeley, and industrial chemical processing facilities such as Linde Air Products Division of Union Carbide in Tonawanda, NY; Mallinckrodt, Inc., in St. Louis [known as the St. Louis Downtown Site (SLDS)]; and E.I. du Pont de Nemours & Company (DuPont & Company) in Deepwater, NJ. Facilities such as the Middlesex Sampling Plant (MSP) in Middlesex, NJ, were used for sampling, shipment, and storage of ores prior to processing. Contractors also used offsite storage locations and landfills for storage and disposal of process residues and other radioactive wastes. Examples include the St. Louis Airport Site (storage of residues from Mallinckrodt operations); Ashland 1 in Tonawanda, NY (storage of residues from operations at the Linde facility); and the Middlesex Municipal Landfill (disposal of construction wastes from activities at MSP). A number of smaller commercial sites were used in uranium metal machining and fabrication under subcontracts issued by prime contractors.

As a result of these activities, materials, equipment, buildings, and soil became contaminated, primarily with naturally occurring radionuclides. When sites were no longer required for nuclear programs, they were decontaminated and released for use without radiological restrictions or stabilized in accordance with survey methods and guidelines then in existence. Radiological criteria governing release of sites for unrestricted use changed between the 1950s and the 1970s and are still undergoing development.

In 1974, AEC initiated a survey program to identify and reevaluate formerly used nuclear program sites to determine whether additional decontamination was required. This survey program was the primordial FUSRAP. In 1975, AEC was replaced by the Energy Research and Development Administration (ERDA), which assumed AEC's programmatic responsibilities, including the activities of the survey program. The Department of Energy Organization Act of 1977 transferred responsibilities of ERDA to DOE. DOE formalized the program, developed a generic plan for identifying and surveying sites, and managed FUSRAP until October 1997, when Congress transferred the program to USACE.

Under the organizational strategy developed by DOE in the early 1980s, responsibilities for FUSRAP activities were assigned to DOE Headquarters and DOE Oak Ridge Operations. DOE contracted engineering firms from the private sector to manage and perform FUSRAP activities. Principal FUSRAP contractors have included Bechtel National, Inc. (project management

contractor since 1981) and Science Applications International Corporation (environmental studies contractor since 1991). Technical support contractors providing designation and verification support have included several government laboratories and institutions (Argonne National Laboratory, Oak Ridge National Laboratory, Oak Ridge Associated Universities/Oak Ridge Institute for Science and Education).

Since FUSRAP began, surveys and/or records reviews have been conducted for more than 400 sites. The program includes 46 sites in 14 states. By the end of FY 1997, DOE had completed radiological cleanup at 25 FUSRAP sites in 12 states, partially remediated 13 additional sites, and cleaned up more than 200 vicinity properties. USACE inherited cleanup responsibilities at the 21 remaining FUSRAP sites.

PATH FORWARD—USACE EXECUTION PLAN

When Congress transferred management of FUSRAP from the DOE to the USACE in October 1997, there were some fears, particularly among a few elected officials, that there would be delays in executing work at FUSRAP sites because of the transition. However, those concerns were not realized. Indeed, as a result of the cooperation among all FUSRAP partners, past and present, momentum has been maintained and the public has seen little disruption in remediation activities in the field.

Effective on October 13, 1997, the date the Energy and Water Development Appropriations Act of 1998 became law, DOE assigned the Bechtel and SAIC FUSRAP contracts to USACE. USACE moved quickly to assign transition teams to respond to the mandate from Congress to take over responsibility for managing the program, which includes remediation activities totaling \$140 million for FY 1998. They were also assigned to evaluate current FUSRAP plans and to report to Congress within 90 days regarding how USACE would complete cleanup of the FUSRAP sites.

One USACE transition team was assigned to assess the overall management of FUSRAP by the project management contractor, Bechtel National, Inc., and the support services contractor, SAIC. A second team was assigned to evaluate remediation activities in progress at FUSRAP sites in New York, New Jersey, Missouri, and Ohio. Initial guidance given to Bechtel and SAIC was to continue to execute the current work plan until USACE completed its evaluation and formulated its execution plan. Work continued without interruption as the transition team met with the FUSRAP contractors and acquired the necessary information and understanding to develop the USACE plan for completing cleanup of FUSRAP sites.

Execution Philosophy

USACE operating philosophy is to assign responsibility for managing site remediation to its districts near where the sites are located (see Figure 2). Based on this decentralized approach, FUSRAP site assignments are:

- The four FUSRAP sites in St. Louis and the Madison Site in Illinois were assigned to the St. Louis District.
- The Colonie site near Albany, NY, and three sites in New Jersey (Maywood, Middlesex, and Wayne) were assigned to the New York District

- The Niagara Falls Storage Site near Buffalo, NY, five other sites in the Buffalo area, and the Luckey and Painesville sites in Ohio were assigned to the Buffalo District
- The CE Site in Connecticut and the Shpack Landfill in Massachusetts were assigned to the New England District
- The DuPont Site in Deepwater, NJ, near Philadelphia, was assigned to the Philadelphia District
- The W.R. Grace & Company Site in Maryland was assigned to the Baltimore District.

USACE project managers in each district were assigned to take responsibility for managing Bechtel and SAIC activities at these sites.

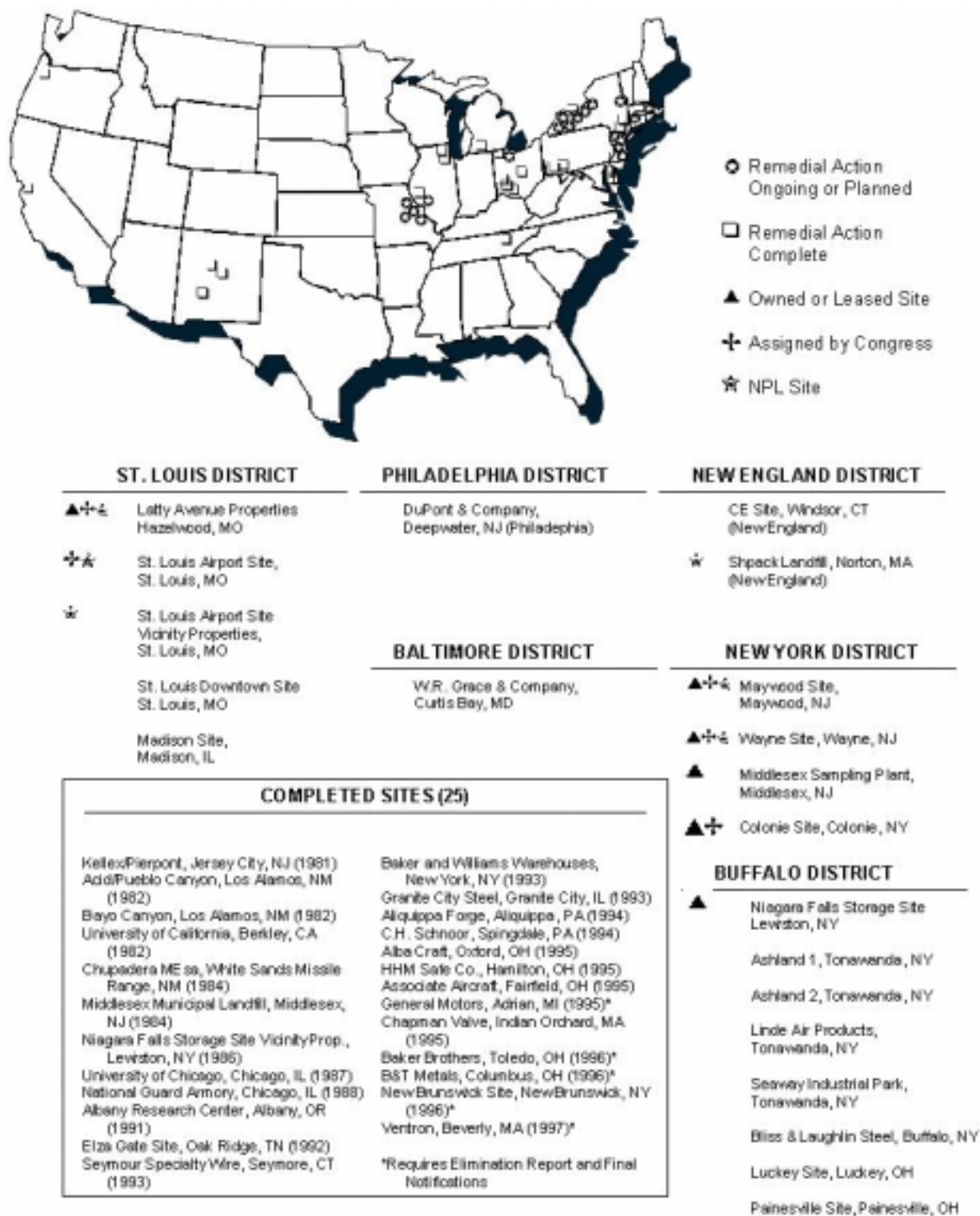


Figure 2. USACE FUSRAP Organization.

USACE geographic divisions and districts are responsible for FUSRAP project execution supported by USACE's Hazardous, Toxic and Radioactive Waste (HTRW) Design Districts and the HTRW Center of Expertise. Availability of this additional technical resource adds significantly to the ability of FUSRAP to ensure that all options have been fully evaluated and the best option selected as technical challenges are encountered.

Early in the transition period, USACE changed the Bechtel and SAIC contracts to task order contracts. This contracting approach facilitates issuing separate task orders for work within each "execution" district and provides the flexibility to issue task orders whose completion may extend beyond the current contract end date. This flexibility will permit ongoing field remediation work to continue during the 1998 construction season without costly interruptions in ongoing field activities.

The USACE operating philosophy includes very active participation by the responsible districts at each FUSRAP site. Some of the functions previously performed by Bechtel as the management contractor are now performed by USACE. This increase in USACE activity and a shift to a decentralized execution approach resulted in some change in the level and areas of support required from FUSRAP contractors.

This focus on execution has put the appropriate USACE managers in the field, where decisions must be made. Additionally, the USACE approach is facilitating management of stakeholder expectations: program managers are able to meet as often as necessary with all interested and affected parties to discuss their concerns.

To address expectations of cost efficiencies, USACE is changing the contracting method from a Time and Materials contract to individual site-specific remediation contracts. USACE expects more efficient remedial actions through the use of performance-based specifications utilizing fixed-price and cost-type contracts, as appropriate.

Key components of the USACE contracting strategy include:

- Establish initial execution of the FY98 baseline by converting the DOE contracts transferred to USACE to indefinite quantity contracts and issuing task orders with definitive scopes under these contracts
- Use contract types that provide appropriate incentives for cost savings and schedule acceleration
- Identify opportunities to re-scope responsibilities among present contractors in ways that accelerate assessment and remedial decisions and eliminate multiple handoffs between contractors
- Administer contracts based on definitive contract scopes of work, along with management and control of activities to execute projects on schedule and within budget
- Acquire new USACE contract vehicles to execute FUSRAP projects as necessary, but use existing HTRW contract vehicles to the maximum extent possible

Plans for Completing FUSRAP

USACE's mandate from Congress included identifying ways to meet FUSRAP's commitment to the public to clean up the remaining FUSRAP sites as quickly and as cost effectively as possible. USACE's evaluation identified several initiatives to meet the challenge given by Congress to complete the work more cost effectively. Key USACE initiatives to accomplish this goal include:

- Implementing the alternate disposal at sites where only residual amounts of radioactivity are found onsite (Middlesex Site)
- Using industrial (baseline) rather than residential (conservative) cleanup standards at sites where projected future use clearly does not include residential development
- Using risk-based assessments to justify less conservative release levels where appropriate
- Streamlining the reporting and decision-making process to accelerate work
- Using less expensive USACE commercial disposal contracts
- Exploring alternative disposal options

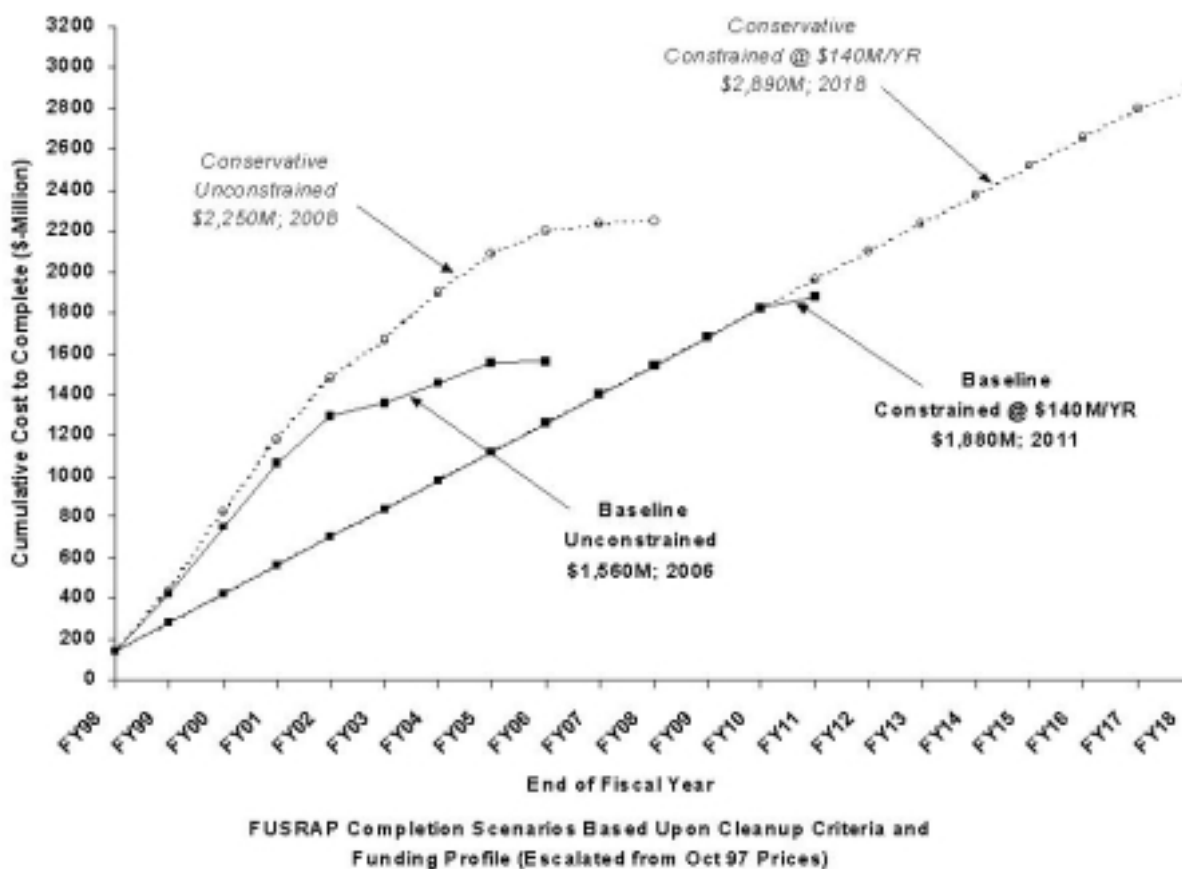


Figure 3. USACE FUSRAP Cost and Schedule Estimates

The anticipated outcome of implementing the USACE execution plan is more efficient and cost-effective remediation of FUSRAP sites while still ensuring compliance and protectiveness of human health and the environment for end state uses desired by the affected communities.

Figure 3 is a presentation of the USACE cost and schedule estimates depending on the level of funding and cleanup criteria. If USACE received optimum or unconstrained funding beginning in FY99, USACE estimates that it could complete FUSRAP by 2006 for \$1,560 million and baseline cleanup standards or by 2008 for \$2,250 million and conservative cleanup standards. If funds are constrained at the FY98 level of \$140 million, USACE estimates that it will take an additional \$320 million and 5 years to complete a baseline cleanup and an additional \$640 million and 10 years to complete cleanup to conservative levels. For FY99, USACE received funding at the constrained funding level of \$140 million.

ACCOMPLISHMENTS

USACE has made significant progress in the year since assuming management of FUSRAP. Key FY98 Activities and accomplishments are:

- effected seamless transition: no slippages attributable to transition
- carried out site by site program assessment and provided report to Congress
- transferred program/project management from Oak Ridge, Tennessee to Corps geographic districts
- cleanup will be accomplished in accordance with the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the National Contingency Plan (NCP)
- memorandum of understanding with the Department of Energy, under negotiation, is expected to facilitate actions between the two agencies
- regional highlights:
 - St. Louis, Missouri:
 - completed documentation under CERCLA to support interim removal actions at the St. Louis Airport and Vicinity Properties sites and initiated interim removal actions at these sites
 - completed documentation under CERCLA to support interim removal actions at the Latty Avenue, Hazelwood Interim Storage Site
 - completed Record of Decision, with EPA sign-off, for cleanup of the St. Louis Downtown Site
 - northern New Jersey:
 - completed documentation under CERCLA to support interim removal actions at the Wayne, NJ site and initiated removal and disposal of subsurface contaminated materials
 - supported the Department of Justice in finalizing settlement with the W.R Grace Corporation under which Grace will pay a share of cleanup costs at the Wayne, NJ site
 - remediated 15 residential vicinity properties at the Maywood, NJ site
 - accelerated disposal of interim storage pile at Middlesex, NJ site in advance of new lead disposal regulations which would have increased costs by up to \$40 million
 - Buffalo, NY and vicinity:

- completed Record of Decision for cleanup of the Ashland 1, Ashland 2, and Seaway Area D, Tonawanda, NY sites, and removed most of the contaminated material from the Ashland 2 site.
- completed documentation under CERCLA to support interim removal actions at the Painesville, OH and initiated interim removal action
- used alternate disposal of Ashland 2 material at International Uranium Corporation's White Mesa, Utah, recycling mill site. Estimate savings and cost avoidance totaling \$12-16 million.

CONCLUSION

USACE has made good on its promise to Congress and the public that the transfer of FUSRAP from DOE to USACE would not disrupt ongoing work. USACE procedures are expected to produce improvements as a result of its organizational strengths in the areas of engineering, project management, construction management and acquisition management. Areas of improvement include:

- USACE's nationwide resources of engineers and scientists that can be brought to bear upon the FUSRAP cleanup process
- USACE's cradle-to-grave project management procedures applied, eliminating duplicative efforts of contractors managing subcontracts
- Conduct on-site construction supervision and administration of field activities at every site
- Applying USACE innovative contracting tools to expedite cleanup for a fair and reasonable price
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REFERENCE

USACE FUSRAP Report to Congress, March 1998