

EAD ACTIVITIES AT THE FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

The U.S. Department of Energy (DOE) must deal with a wide range of technical problems in the remediation of the Department's facility at Fernald, Ohio. EAD uses a range of approaches to provide DOE with independent technical evaluations of significant problems it encounters in these efforts.

■ PROBLEM/OPPORTUNITY

DOE is carrying out a major environmental remediation program at the Fernald Environmental Management Project (FEMP) near Cincinnati, Ohio. The facility produced high-quality uranium metals for nearly 40 years. Those past production activities contaminated soil, groundwater, and structures at the site. As remediation of the site proceeds, EAD provides DOE-FEMP with independent evaluations of significant technical and cost issues. EAD staff members also participate in a multiorganizational team that is successfully using in-situ gamma spectrometry at Fernald to characterize radionuclide-contaminated soils during remediation.

■ APPROACH

EAD has addressed a wide range of problems related to remediation of environmental media and structures, management of site wastes, and characterization of environmental media. EAD has developed a variety of analytical and management tools for these tasks, including, for example, detailed models describing remediation activity to support cost estimates, regression models for use as planning tools, and Web sites to communicate information.

■ RESULTS

Through their efforts in support of the DOE's FEMP activities, EAD staff have accomplished the following:

- Identified a variety of opportunities for significantly reducing costs associated with remediation, including the elimination of unnecessary sampling requirements, the avoidance of unneeded risk assessment, and the streamlining of approaches to remediation planning.
 - Developed quantitative planning tools for use in managing contaminated structures. These models predict costs and waste volumes associated with remediation.
 - Contributed to the completion of documentation necessary for DOE to carry out its remediation program and to achieve regulatory acceptance of in-situ characterization methods.
 - Developed detailed, independent cost estimates for site activities involving building decontamination and dismantlement, groundwater remediation, and soil characterization.
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- Demonstrated the cost advantage of in-situ soil characterization methods over conventional approaches at the Fernald site.
- Developed and maintained a Web site for the rapid communication of results from the in-situ characterization of soils.

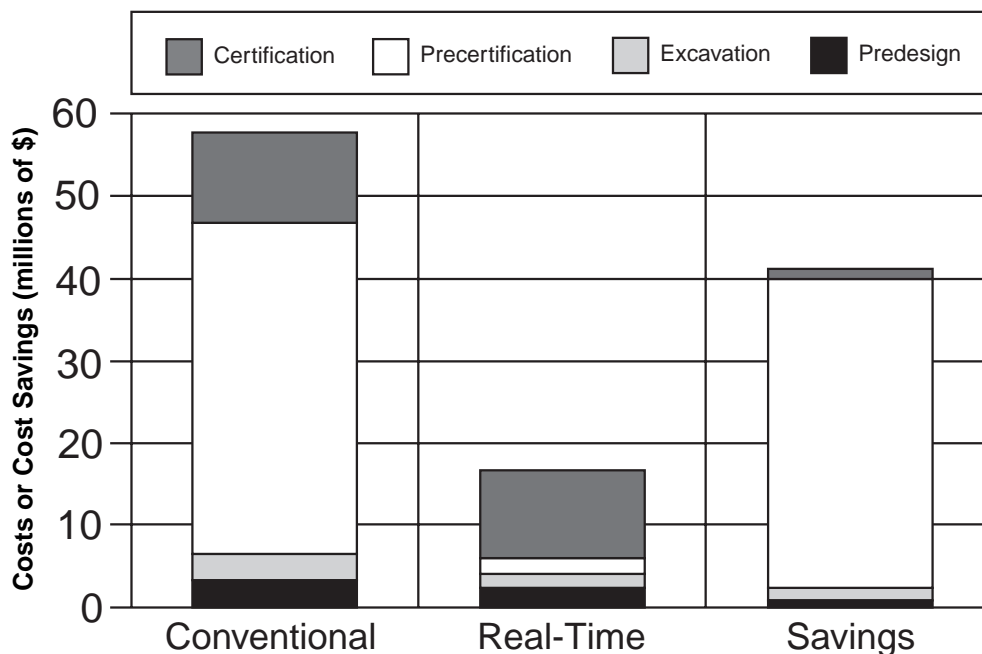
period. It expects to continue to be involved with site activities, particularly in areas related to the remediation of site soils. In general, the experience gained at Fernald is directly applicable to other facilities undergoing remediation.

■ HISTORY/STATUS/FUTURE

EAD has worked with DOE-FEMP since fiscal year 1991 and has been involved with most major aspects of site remediation during that

■ COMMUNICATION OF RESULTS

This work has resulted in two journal articles and numerous conference papers and reports. Information is also available on two Web sites: <http://www.ead.anl.gov/~femp/srp> and <http://www.ead.anl.gov/~femp/astd>.



EAD estimated the potential cost savings associated with using real-time (in situ) methods to characterize soils at the FEMP.

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