Regional Success Stories

INSIDE

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Elements of Success at Savannah River

- FFA Project Managers and Technical Teams Collaborate
- RI/FS Inefficiencies Identified
- Solutions Implemented
- Benefits Realized

SAVANNAH RIVER SITE
Aiken, South Carolina

New Approach to RI/FS Decision Making Dramatically Improves Environmental Restoration Projects.

Environmental restoration (ER) activities have been ongoing at the United States Department of Energy, Savannah River Site (DOE-SR) under the Federal Facility Agreement (FFA) since 1993. Over time, the FFA project managers recognized that document completion (i.e., meeting milestones) overshadowed effective decision making. In June 1999, the three parties, the United States Environmental Protection Agency (USEPA), the South Carolina Department of Health and Environmental Control (SCDHEC), and DOE-SR, agreed to a "time-out" on a number of Remedial Investigation/ Feasibility Study (RI/FS) projects in order to accommodate an initiative to evaluate their approach to RI/FS decision making. Through this initiative, the three parties identified the following "problems" which lead to continuous delays and major revisions during the process:

- Unclear problem definition (e.g., inadequate remedial investigation/baseline risk assessment (RI/RA) documentation) leads to difficulties transitioning from RI to FS;
- Ineffectual Corrective Measures Study/Feasibility Study (CMS/FS) scoping; and
- Inadequate CMS/FS documentation.

APPROACH TO SOLVING THE PROBLEM

To identify the problems as well as develop solutions, a multi-disciplinary team comprising representatives from USEPA Region 4, SCDHEC, DOE-SR, and site contractors was established. This ensured that solutions would be acceptable and implementable by all of those involved in the ER process. The team met over a period of six months to

define the problems, develop potential solutions, and test the new approach to solving the problems on several pilot projects.

Throughout the process the team employed the Principles of Environmental Restoration (PER). The principles are a DOE-Headquarters' initiative to streamlining ER projects and are considered, by the three parties, to be a sound approach to decision making and problem solving (See Exhibit 1).

Exhibit 1: Principles of Environmental Restoration

- Building an effective core team is essential.
- Clear, concise, and accurate problem identification and definition are critical.
- Early identification of likely response actions is possible, prudent, and necessary.
- Uncertainties are inherent and will always need to be managed.

As a result, the team developed a new approach to RI/FS projects which:

- Focuses on decision making and places responsibility for decision-making on a "core team" consisting of representatives from the three parties;
- Institutes upfront agreement on project direction; and
- Establishes a means to document those agreements throughout the life cycle of the project.

Identifying Key Decisions. To increase the focus on decision making, the team developed a framework that explicitly identifies the fundamental ER project decisions. In addition to the selected remedy documented in the Record of Decision (ROD), there are other necessary decisions leading up to the ROD. These key decisions are embodied in the new approach and include the following:

- Presence/absence of a problem warranting
- action;
- Remedial action objectives (RAO);
- Scope of problem warranting action;
- Likely Response Actions; and
- Significant uncertainties that impact the ability to reach consensus on the other key decisions.

Regardless of the project phase (e.g., Work Plan, RI, FS), currently available information is used to support reaching agreement on these decisions. Additional effort (e.g., data collection, risk analysis, fate and transport modeling) is only performed as needed to support specific decisions that cannot be made using existing information. The new framework ensures common understanding of project direction by explicitly linking technical activities to decisions, which allows movement from one project phase to another.

Reaching Agreement. In order to more effectively address the decisions mentioned above, the team identified specific scoping meetings with explicit expectations. The meetings include the following:

- Work Plan Scoping Meeting;
- Post-Characterization Meeting;
- Pre-RI/BRA (Baseline Risk Assessment) Documentation Meeting; and
- FS Scoping Meeting.

Due to the timing of these meetings, technical staff and decision maker expectations are aligned prior to expending significant efforts in data collection, technical analysis, or formal documentation. Therefore, the emphasis of each scoping meeting is on communicating technical information and agreeing to key project decisions before formalizing information in the standard RI/FS documentation.

Documenting the Decisions. To support effective and defensible decision making, the technical staff develops a summary of those conclusions/uncertainties associated with each key project decision. As the project progresses through each phase the summary, referred to as the OU Scoping Summary, is continually updated to reflect the current technical understanding and agreements. This is critical in ensuring that all of the individuals involved in the ER projects clearly understand the information and the rationale behind the decisions, which will ultimately prevent regression.

BENEFITS TO THE NEW APPROACH

The new approach to RI/FS decision making focuses first on communicating, then agreeing, and finally documenting the significant decisions. Consequently, the new approach has improved the program's focus on the necessary areas for agreement and invokes constructive discussion with decision makers early in

the process. The new approach has instituted a sense of openness by working together to evaluate project information and define project direction. Specifically, the new approach provides the following benefits:

Increase in Confidence in Remedial Decisions. At each phase, the OU Scoping Summary captures the significant conclusions and recommendations with the associated rationale. This produces a traceable history that affords better support to the signed ROD. In fact, by the end of the RI/FS process the ROD is practically written because of the prior agreements documented in the OU Scoping Summary.

Increase Understanding of Link Between Decision Making and Technical Activities. Scoping meetings, throughout all project phases, provide an opportunity to explicitly discuss and resolve issues related to uncertainties impacting decisions and technical activities needed to resolve the uncertainties. Because technical activities are understood in the context of specific decisions, project objectives are clearly understood by both the decision makers and technical staff which focus the projects.

Explicitly Managing Uncertainties. To maintain effective meetings, the technical staff clearly defines expected conditions (e.g., no impact to groundwater), provides existing information related to those conditions (e.g., screening data/modeling results), and is prepared to discuss what needs to be done to manage the potential for those expectations being incorrect (e.g., monitoring, robust response actions). Regardless of which scoping meeting, most conversations are centered around uncertainty which has increased the feeling of confidence in technical understanding and created an opportunity for well informed decision making.

Minimizing the Review and Revise Process. Regularly scheduled face-to-face meetings or conference calls during all phases of the project, result in the ability to resolve issues "real time." These meetings occur prior to completing formal documentation, therefore the expectations for what the documents will contain are known upfront. Consequently, this new approach has increased confidence in technical analyses and documents being on target, which has reduced the potential for multiple document revisions.

Cost and Schedule Savings. In addition to the savings associated with the more efficient review/revise process, the new approach results in additional savings because objectives (i.e., scope) are clearly understood early in the project life cycle which ensures an appropriate level of effort is defined for technical analyses (e.g., risk assessments). Further, the new approach identifies opportunities to select a preferred response based on institutional knowledge. Consequently, there is opportunity to not only focus project scope but also to accelerate cleanup by minimizing the need for unnecessary technical analysis.

The inter-agency collaboration on the development of the new approach to RI/FS decision making has resulted in an approach that has been readily implemented, and immediately beneficial. Staff from all organizations and at all levels have a renewed focus on the fundamentals of environmental restoration – identifying threats to human health and the environment and responding to them as expeditiously as possible. As a result of the successes at the Savannah River Site, similar efforts are being encouraged at other federal facilities within USEPA Region 4.