ITRC PROJECT PROPOSAL: Remediation Risk Management

PROPOSAL DATE: 31 May 2007

Please use brief statements or bullet items to input the requested information.

Proposal Contact:

Mr. Blaine Rowley, U.S. DOE, 301-903-2777, blaine.rowley@em.doe.gov
Dr. Javier Santillan, AFCEE, 210-536-4366, Javier.santillan@brooks.af.mil
Dr. Sam Brock, AFCEE, 210-536-3253, Samuel.Brock@brooks.af.mil
Ms. Erica Becvar, AFCEE, 210-536-4314, Erica.becvar@brooks.af.mil
Ms. Joann Socash, AFCEE/BAH, 210-536-5271, Joann.socash@brooks.af.mil
Ms. Patricia Reyes, Noblis, 703-610-2147, patricia.reyes@noblis.org

Problem Statement (why is this project necessary?)

One component of Performance-Based Environmental Management (PBEM), as illustrated in the ITRC PBEM TechReg document, is a well defined risk management strategy based on current and future resource (land, groundwater) use. ITRC has published documents on all of the other components of PBEM, including site characterization, decision logic preparation, exit strategy, and remediation optimization (above and below ground surface). PBEM acknowledges that remedy performance risk is an important element of remediation that is complex and multi-faceted.

Remediation risk management (RRM) is a critical process for managing uncontrollable project activities or circumstances that may result in negative consequences to remediation system performance. The project team evaluates the remediation risk and develops plans to facilitate risk mitigation. Managing remedy performance risk should be an integral part of a remediation program's overall management. Past practices have generally treated performance risk management solely as a system engineering function, cost-estimating technique, or possibly as an independent function distinct from other program functions. Today, RRM is recognized as a vital integrated program management tool that cuts across the entire program, addressing and interrelating cost, schedule, and performance/operational risks. The goal is to make everyone involved in the program aware that performance risk should be a consideration in the planning, design and execution of activities.

The best risk management strategy is to identify risks, assess their criticality and take necessary action to mitigate them before they become problems causing serious performance, schedule, cost, or mission impacts. An ITRC document that identifies potential risks encountered during remediation and provides recommendations to manage those risks would be invaluable to project managers and the regulatory community. The document could identify the range of risks to accomplishing site closure including the following:

- Human health
- Environmental protection
- Technology performance capability
- Regulatory approval
- Remedy implementation
- Resource conflicts
- Financial cost and funding
- Public acceptance
- Vendor/Contractor performance
- Remediation system performance
- Schedule
- Staffing

The team will develop overview documents for recognizing the risks inherent in remediation projects and setting realistic performance goals and expectations, and will propose mitigation plans for managing those risks.

This proposal also considers two important topics—Groundwater Modeling and Technical Impracticability (TI)

Waivers—which are critical in the remediation decision-making process. Groundwater modeling is a useful tool in understanding the remediation risk and TI waivers can be supported by a detailed analysis of risk as predicted by models and verified by field observations. Both of these topics will be addressed as part of overall RRM strategy.

Groundwater modeling is a tool used to simulate subsurface flow, contaminant fate/transport, and the efficacy of a remedy to support decisions about the following:

- Determine where is the risk (fate and transport down gradient)
- Assess applicability of remedial technologies
- Assess performance of remedial technologies.

The project will prepare guidance on what groundwater models are readily available, their applicability, limitations, and regulatory acceptability. The document will also address strategies to verify the modeling predictions using field measurements and the procedures for reporting and review.

TI Waivers may be a necessary alternative for some projects due to the site conditions. The project will prepare guidance defining what TI waivers are and providing the following:

- Recommendations when TI waivers should be pursued
- Guidance identifying regulatory implications
- A logical process for obtaining a TI Waiver
- Example case studies of where TI Waivers have been appropriately used.

By following a performance-based approach to remediation risk management, this proposal will look in detail at some of the critical elements of the overall PBEM process.

Solution / Impact (how will the project impact the environmental marketplace?)

Fact sheet documents and on-line training will inform restoration project managers (PMs) about the range of potential risks encountered in site remediation, discuss risk management planning, and provide management alternatives. This will affect the environmental market place by:

- Encouraging risk planning and mitigation, thus allowing environmental remediation funds to be better utilized for environmental remediation
- Reducing the overall level of effort required for regulatory oversight, thus reducing demands on constrained agency staffing and budgets

Success Measures (how you determine the project impact to the market place)

The success of the proposed fact sheets could be measured by:

- Interest in participation on the Team's follow-on documents
- Requests for and downloads of the Fact Sheet documents
- Participant attendance on the Web-based training classes
- Training participants evaluation survey of usefulness of the training

Summary of Deliverables (primary project outputs)

- State survey on knowledge and implementation of RRM and TI Waivers
- Fact sheet overview of RRM
- Fact sheet overview on selection and application of regulator accepted GW modeling tools
- Fact sheet overview on application of TI Waivers
- Internet training on application of RRM, and TI Waivers

Project Schedule

The Team will follow the standard ITRC Team lifecycle outlined for all teams and will start in Jan 2008 and conclude in October 2009 as a full team. The following activities will be the major highlights for the first year.

- 1st Team meeting - February 2008 – understand the issues, team dynamics and assign writing roles for the 3 technical fact sheets
- Monthly Team teleconferences – status check-ins
- 2nd Team meeting – May 2008 – review draft State survey and fact sheet outlines
- August 2008 – Release State Survey to POCs
- 3rd Team meeting – ITRC Fall Meeting October 2008 – Review State survey data and draft fact sheets

In 2009, Team highlights include:
Release fact sheets for external review (spring)
Publish fact sheets (summer)
Prepare internet training based on fact sheets (spring-summer)
Conduct internet training (fall 2009 –early 2010)

Target Audience

The main target audience for the Team documents will be state and federal remediation regulators, site owners, environmental contractors conducting or managing cleanups, and all stakeholders involved in site remediation.

Resources Required

Personnel:
Identify the following:

- Team Leader and Five States that are Interested in Supporting this Project
  - Leaders: Tom O'Neill, NJDEP and Sriram Madabhushi, SCDHEC
  - Potential Member states: NY, SD, CA, ME, MA, TN, WA
- Skill Mix of Team Members (e.g., regulatory, engineering, scientific, etc.)
  - Sam Brock – risk assessor
  - Javier Santillan - scientific and engineering federal
  - Erica Becvar – scientific and technological expertise in remediation
  - Joann Socash – scientific knowledge
  - Blaine Rowley – federal issues and requirements
  - Pam Baxter – regulatory expertise
  - Mike Rafferty – engineering expertise

- Sectors of Team Members (e.g., federal, state, community, regulated, regulator, etc.) The team will be made up of at least 5 State members, as well as federal staff from DoD, DOE and EPA, a stakeholder representative, environmental engineering contractors and consultants.

Financial Resources:

The estimated Team budget for the first year is approximately $40,000 per year, which includes all travel for team members, logistics for team meetings, conference calls, and publication of state overview survey. The Program Advisor's support will be provided as in-kind support for an experienced ITRC PA by the U.S. Air Force for the first year of the Team. Air Force funds for the second year cannot be guaranteed but will be requested. The total cost for the second year including the printing of the 3 fact sheets is estimated at $125,000. ITRC's total lifecycle cost for the Team is estimated to be $165,000.

Related Work:

This project is an extension of the work already completed on Performance-based Management by the ITRC RPO team. The RPO Team's efforts, specifically the series of fact sheets and internet training modules on PBEM compliment and parallel the efforts being done by the Risk and Sampling,

Characterization Teams. The work products of both of these teams will be highlighted in the RRM team's overview documents. The RRM team will propose to meet with the other two teams at the Fall meeting to provide an overview of their efforts and to explore synergies with the other teams.