

## **Value Engineering Study Scope and Schedule NIMBY Superfund Site**

### **BACKGROUND:**

The Value Engineering (VE) Study is intended to add value to projects, in terms of improved quality, enhanced construction methods, reduction in waste volume generated, time savings and money expended on the remediation process. The original studies were part of a pilot program funded by HQ-EPA, and coordinated by the USACE. This VE Study is funded by the USEPA Region. Criteria for the performance of these studies is contained in the Office of Solid Waste and Emergency Response (OSWER) Directive OSWER 9335.5-24, Value Engineering for Fund Financed Remedial Design and Remedial Action Projects, signed on 14 April 2006. This directive provides guidance concerning requirements addressing Value Engineering for Superfund Remedial Design and Remedial Action Projects.

The VE Study for the NIMBY Site will consist of a five person team. The members were selected based on their interest in participating, their ability to evaluate projects and look for inefficiencies, and their discipline specific experience. Broad based construction experience was deemed necessary, along with considerable experience in sampling and analysis, cap design and installation, and water treatment. To meet the value engineering requirements, and facilitator function, an individual with Certified Value Specialist (CVS) experience was included on the team. The following personnel were selected as the primary members:

|               |  |
|---------------|--|
| Bea True, CVS | Facilitator/Contractor, USACE Retiree      |
| John Heart    | Rapid Response Construction Manager, USACE |
| Jim Hardball  | Construction Manager/Engineer, USACE       |
| Curtis Stream | Hydrogeologist, USACE                      |
| Dusty Rhoades | Geotechnical Engineer, USACE               |
| I. M. Green   | Environmental Engineer USACE               |

The alternate members are:

|   |   |
|---|---|
| A second CVS hired as a subcontractor to Bea True, also a USACE Retiree |   |
| Mark Quick  | Rapid Response Construction Manager/Engineer, USACE |
| George Flange   | Construction Manager/Engineer, USACE                |
| Frank Speacking   | Geotechnical Engineer, USACE                        |
| Ed Howe   | Policy, legal, management consultant (optional)     |

In addition to the primary members, the RPM, the USACE PM, State Department of Environmental Conservation, design team members, and the construction contractor are encouraged to participate in the VE Study. If any of these persons cannot attend, they are requested to be on call during the VE Study to field questions from the VE Study Team. Other individuals may be requested to participate as technical experts to assist in the VE Study. Individual RPMs from other Regional Offices may also request to attend a VE Study to become familiar with the process.

A site visit will be included in the study. The site visit will be held on June 8, 2010. Those persons participating in the VE Study will attend the site visit. The visit is expected to be approximately four hours in duration and will be led by the RPM, or if the RPM is unable to lead the tour, he/she will designate someone such as the USACE PM (if applicable), lead designer, or some other qualified individual. If possible, the VE Study will be held in close proximity to the site to limit commuting time for the site visit, and local participants. The VE project coordinator will be responsible for coordinating logistics for those involved in the study. Coordinate through the USACE PM if requested by the RPM.

**PROCESS/SCHEDULE:**

The schedule for the NIMBY VE Study will follow a typical VE schedule. Prior to the VE Study, the designated coordinator will contact the RPM and USACE team members via conference call to discuss the VE Study and answer any questions they may have about the process. The idea is to exchange information and emphasize the importance of teamwork, open communication with free exchange of information, and set up a time when the RPM, designer, and other persons requested by the RPM, can discuss the project via telephone with the VE Study Team. The coordinator will request documents needed to perform the VE Study.

Generally 1 – 2 weeks following receipt of the documents, another conference call will be held regarding the project. This will give the VE Study Team a chance to have an initial look at the documents and ask questions of the RPM and designer(s). The RPM is asked to identify items he or she wishes not to include in the scope of the studies, and conversely identify any items he or she feels needs added scrutiny. The coordinator will condense the cost estimate into categories and try to define large cost areas for the RPM so he or she has an indication where the study may focus. Remedy changes will not be addressed unless unusual conditions exist (a very old ROD, or design), or the team is requested to review the remedy. The two calls may be combined if appropriate. This will be coordinated with the EPA RPM prior to the study. Typically 1 – 2 weeks after the conference call, the team will meet at a location (hotel/USACE or EPA Office) near the site.

## **VALUE ENGINEERING METHODOLOGY:**

Each project studied will follow the standard Value Engineering (VE) methodology, consisting of six phases (<http://www.value-eng.org/>). *The EPA VE process is broken into two components, the screening phase which addresses the first four phases and the study phase which encompasses the final two phases (Development and Presentation).* This Study will encompass all six phases which include:

**Information Phase:** The Team studies the current design drawings/specifications/design basis, the ROD, Proposed Plan, portions of the Remedial Investigation, Feasibility Study, EPA criteria documents, descriptions of project work, and cost estimate to fully understand the project scope and required functions. A recent, detailed cost estimate should be available at the time of the VE Study to allow the team to focus on high cost areas of the project which offer the most potential for cost savings. *This phase is largely done by the team prior to the on site portion of the VE Study in an effort to save time and be more effective.*

**Function Analysis Phase:** The purpose of this phase is to clearly identify the function(s) of the Project, and to formulate a concept from which new directions can be taken. A Function Analysis Study Technique (FAST) Diagram/Function Model is an end product of the Information Phase.

**Speculation Phase:** The CVS will lead the Team in a brainstorming session(s) to generate ideas that could potentially be beneficial to the remedial action. All team members are expected to contribute ideas; critical analysis of the ideas is discouraged during this phase. These ideas are summarized in an appendix to the report.

**Analysis Phase:** Evaluation, testing, and critical analysis of all ideas generated during speculation is performed to determine potential for savings or improvement to the site remedial action. Ideas with common themes such as sampling, or excavation may be combined and analyzed together, if appropriate. Ideas that do not survive critical analysis are deleted. Those feasible ideas that survive the analysis phase are then developed into proposals. Those surviving ideas are assigned to members of the team for further development.

**Development Phase:** Following the analysis phase, the proposals will be refined with more research and in-depth resolution pursued while the entire group is present to reinforce an idea or proposal. The VE Study Team Members will reassess the proposals adequately to brief the RPM and others on the preliminary findings. The proposals will be developed into finished written proposals upon return to their offices. Proposal descriptions, along with technical support documentation, and cost estimates are prepared to support implementation of ideas. Sometimes this attempt to substantiate the proposal results in the modification or even elimination of the original idea. Development generally takes the form of a written document that clearly expresses the proposed idea, usually a "Before" and "After" depiction. In addition, the VE Study Team identified items of interest from the VE Study as Comments that are not developed as proposals. These comments follow the study proposals in the report.

**Presentation Phase:** Following the initial stages of development, the team will produce a debriefing for the RPM and others as requested. The debriefing will occur on the final afternoon of the VE Study. A published draft report is distributed for review by the RPM and other designated project supporters and decision makers in about 30 days. The EPA will determine responsibilities for implementation of accepted proposals.

**DOCUMENTS TYPICALLY REQUESTED:**

Electronic copies of the following items are requested for the reviewers prior to the VE Study Team - RPM conference call, plus a single hard copy of the drawings/Design Analysis/Specs for use during the VE Screen and Study. Other documents include:

- Most Recent Detailed Cost Estimate - to look for highest cost categories
- Design Analysis/Design Basis - How the implemented plan was determined
- Typical Drawing Set-How the implemented plan is carried out
- Specifications-Information on materials, components and procedures used in the RA RI report (generally referenced for earlier site data collected)
- FS report (reference for potential assumptions made, ARARs, Risk Drivers)
- Risk Assessment – Define exposure pathways and related risk
- Decision Document - Scope for the RA
- Latest Action Memorandum Amendment (with all tables and figures)
- Work Plan, Safety Plan, Sampling Plan
- Contracting Strategy Document.

**LIST OF PROPOSED TEAM MEMBERS FOR THE NIMBY STUDY**

- |               |   |
|---------------|---|
| I. M. Green   | VE Coordinator/Manager/Environmental Engineer USACE |
| Bea True, CVS | Facilitator/Contractor, USACE Retiree               |
| John Heart    | Rapid Response Construction Manager USACE           |
| Jim Hardball  | Construction Engineer/Manager USACE                 |
| Dusty Rhoades | Geotechnical Engineer USACE                         |
| CurtisStream  | Hydrogeologist USACE                                |

Other Recommended Attendees (or available for intermittent calls for clarifications/information, others as recommended by the RPM):

- |               |  |
|---------------|--|
| Ted Clearaway | RPM EPA Region                                 |
| John Waterman | State Department of Environmental Conservation |
| Mike Friend   | USACE PM                                       |
| Cliff Fasce   | Consultant                                     |
| Yuell Pey     | Consultant                                     |

Other Resources on call for technical input: Contracting, Regulatory, Cost, Safety, local USACE District, and Environmental and Munitions Center of Expertise (EMCX).

**VALUE ENGINEERING CONSIDERATIONS:** See the attached list for elements that may require additional evaluation.

**SCHEDULE JUNE 7 - JUNE 11, 2010**  
**NIMBY SUPERFUND SITE VALUE ENGINEERING STUDY**

**Day 1 June 7**            Travel Day

**Day 2 June 8**            Site Tour Coordinated with EPA

Following Site Tour    Opening Remarks/Introductions  
RPM and Designer Briefings  
Review VE Study Boundaries  
Project Discussion

**Day 3 June 9**

8 AM – 12 Noon        Review Previous Day  
Development of FAST Diagram/Function Model  
Begin Speculation Phase

12 Noon – 1 PM        Lunch

1 PM – 5 PM            Complete Speculation Phase  
Perform Analysis Phase  
Make Work Assignments

**Day 4 June 10**

Morning                Proposal Development  
Discussion/Clarification of Recommendations  
Internal Briefing to Team Members

Afternoon              Complete Briefing Materials  
Brief RPM, Design Team, and other interested parties  
Make Adjustments to Proposals as Appropriate

Adjourn

**Day 5 June 11**        Travel Day

**July 23**                Draft Document to RPM

## **VALUE ENGINEERING CONSIDERATIONS:**

1. Has Life Cycle Cost Analysis (LCCA) been applied to the project selected solution (e.g. building construction materials: prefabricated metal building vs. concrete block and brick, skid mounted preassembled equipment vs. in place assembly), including costs for O&M and five-year reviews?
2. Has the user/customer been involved with all design decisions?
3. Are there any items in the design that are not required or essential for the project success?
4. Identify any high cost items. Are these items required, or are there other less expensive substitutes?
5. Are there any sole-source, special or expedited procurement procedures that should be considered or developed for any particular item/component being designed.
6. Are there any long-lead procurement requirements associated with limited source materials, such as nearby off-site borrow sources of clay for liners, capping or slurry walls?
7. Are there any aspects of the design that are complex? Can they be simplified?
8. Could an alternate construction method or sequence result in a capital or operation and maintenance cost savings?
9. Are all components consistent with the final remedy?
10. Was the design period compressed? Could certain portions of the project design be reevaluated?
11. Is the design behind the state of the art?
12. Is there any “custom, tradition, or opinion” built into the design?
13. Does the design use obsolete materials or construction methods?
14. Does the design take advantage of the use of skid mounted equipment or similar construction methods?