SUPERFUND
DESIGN
and
CONSTRUCTION
Update

From: Hazardous Site Control Division
To: EPA Regional Offices

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VALUE ENGINEERING

Circular No. A-131, issued by the Office of Management and Budget on January 26, 1988, requires the use of Value Engineering (VE), when appropriate, by Federal Departments and Agencies to identify and reduce nonessential procurement and program costs. Value Engineering is a specialized cost-control technique that uses a systematic and creative approach to identify and reduce unjustifiably high costs in a project without sacrificing the reliability or efficiency of the project.

VALUE ENGINEERING DURING DESIGN

It is the responsibility of the party contracting for design to have the VE screening and review conducted. The review may be conducted by the contracting party, the reviewing agency, the designer, or an individual or firm with the requisite expertise.

The VE review is different from a classical design review of the project. The design review concentrates on functional aspects such as whether the design works, is sufficiently reliable, and meets the designer's contractual obligations. VE, on the other hand, is focused on reducing the investment necessary to achieve those functions. It should be noted that the focus of VE does not preclude the VE team from identifying technical errors or omissions and alerting the designer so these problems can be taken into consideration during the design review.

The VE review should be scheduled so as to minimize the impact on the design schedule. If the VE workshop and decision-making process are structured to avoid adding time to the schedule (i.e., not on the critical path), then the only potential schedule impact would be caused by a design change resulting from the VE process and not from the process itself. A design change and its associated cost are part of the decision-making process of accepting or rejecting the VE recommendation.

VALUE ENGINEERING DURING CONSTRUCTION

The VE incentive clause, found in the Federal Acquisition Regulation (FAR) at 52.248-1, is included in federal construction contracts over $100,000. REM and ARCS firms may choose to include the clause in their subcontracts for construction, even if not directed to do so by EPA's contracting officer. States and claimants under mixed funding may also choose to use a similar clause in their construction contracts.

The VE incentive clause provides the opportunity to the constructor to use its unique knowledge and construction experience as a basis for submitting a Value Engineering Change Proposal (VECP). The VECP is the constructor's proposal to change contract requirements in such a way that the price of the contract is reduced. To have a valid VECP, the constructor must submit the following information:

- A description of the proposed change and the contract requirement
- An itemization of the contract requirements that must be changed
- An estimate of the performance costs that will be reduced if the proposal is adopted
- A prediction of any saving the change may have on operations, maintenance, or equipment
- A statement of time by which the proposal must be implemented by the party contracting for construction

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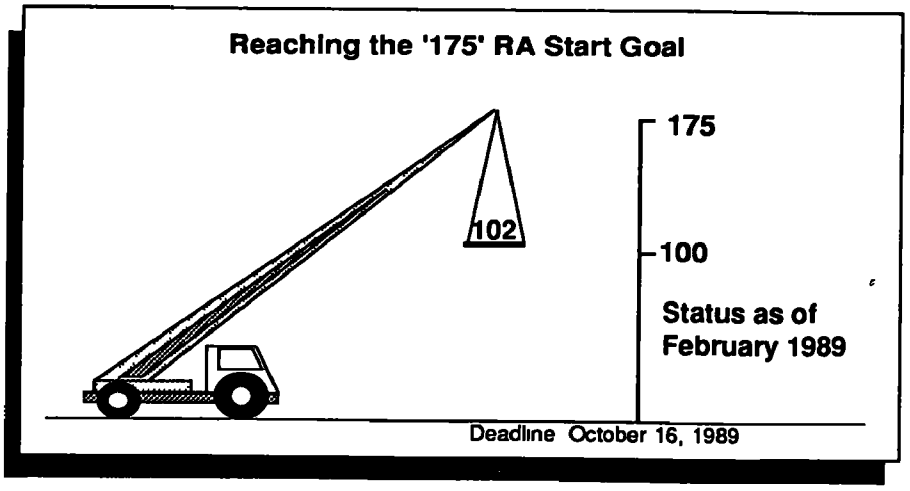

Value Engineering (continued from page 1)

Savings resulting from the change proposal are normally shared on a 55-45 basis between the constructor and the contracting party after the constructor is reimbursed for its cost of implementing the change Prior to approval of the VECP, the party contracting for construction should consult the designer regarding any impact on the design. The contracting party should also consult EPA regarding any impact on the Record of Decision (ROD), basis of design, or design development criteria.

VALUE ENGINEERING AT THE MARATHON BATTERY SITE

At the Marathon Battery site, the ROD specified dredging and chemical fixation of waste material contaminated by heavy metals. Early in the design's development, a 40-hour VE study was conducted, and the following changes were incorporated into the site design:

- Removal of contaminated marsh sediments by a process that eliminates dewatering through construction of a low dike; and modification of the sediment treatment process
- Redirection of stormwater
- Restoration of the marsh
- Reduction in the amount of temporary storage for fixated sediments from 6 acres to 1.75 acres

The VE cost $60,000 compared to a savings of $8 million. Since the VE was done in parallel with the design, there were no delays in the project schedule due to the VE process.

VALUE ENGINEERING AT THE HELEN KRAMER SITE

At the Helen Kramer site (an 84-acre landfill), the ROD specified a landfill cap, a slurry wall, leachate collection, and pretreatment. Upon the recommendation of the A/E firm, EPA directed that a VE study be conducted to evaluate the slurry walls and subsurface drain after submittal of the 35 percent design.

As a result of the VE study and EPA review of its findings, the following changes were incorporated into the Helen Kramer site design:

- Elimination of a deep, upgradient slurry wall construction plan
- Elimination of an upgradient subsurface drain construction plan
- Addition of a slurry wall on the eastern side of the site, between the landfill and an adjacent stream

The VE cost $330,000 compared to a savings of $2.6 million. The VE delayed site remediation approximately 9 months during investigation of issues and review of study findings.

Further assistance on how to activate a VE team on a project can be obtained through Tom Whalen, HSCD, 202/382-2457.▪

COOPERATIVE AGREEMENT RECIPIENTS NOT REQUIRED TO HOLD BID PROTEST HEARINGS

J. Kent Holland, Jr.
Wickwire, Gavin & Gibbs, P.C.

In August 1988, the South Adams County Water and Sanitary District, Colorado–a Superfund cooperative agreement recipient–dismissed a construction bid protest without a hearing. The protestor appealed to EPA, asserting that South Adams County had wrongfully deprived the protesting company of its right to a hearing. EPA dismissed the appeal on the grounds that EPA regulations do not require cooperative agreement recipients such as South Adams County to provide a hearing and, in fact, "do not spell out any specific manner in which the recipient must consider the protest." EPA found that South Adams County had considered the protest and issued a protest decision, thereby meeting the minimum requirements under EPA regulations.

In its protest to South Adams County, the protesting company, which was second lowest bidder, claimed that the lowest bidder was not responsive to minority business enterprise requirements. In discussing these requirements, EPA explained that the solicitation for bids had made compliance with MBE requirements a matter of bidder responsibility rather than responsiveness. Consequently, good faith efforts could be demonstrated after bid opening. Most significantly, EPA explained that cooperative agreement recipients may review issues raised by a protestor and dismiss unmeritorious protests without further consideration

This case is important because it demonstrates that a cooperative agreement recipient may exercise discretion in resolving bid protests and that (subject to applicable state and local requirements) it is not necessary to delay the procurement process by conducting a hearing ▪

BRIDGEPORT BID PROTEST

Bridgeport Rental & Oil Services is located east of Bridgeport in Logan Township, Gloucester County, New Jersey. The site contains about 100,000 cubic yards of PCB-contaminated sludge, lagoon sediments, soil, and debris that are slated for thermal destruction

The two-step sealed bidding (TSSB) method of solicitation was used. This procurement method combines elements of both sealed bidding and negotiation. The objective of TSSB Step 1 is to encourage contractors to submit proposals for alternative approaches. Those proposals determined to be technically acceptable can then be used as the basis of a

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TRI-STATE PLATING SITE BID TABULATION

Bids have been received by an EPA REM Contractor for the Tri-State Plating expedited response action in Region V. The work contemplated includes:

- Decontamination of masonry, steel, and other aboveground building components by steel blasting
- Demolition of a one-story, 5,000-square-foot masonry building and transportation of its rubble to an offsite landfill
- Drilling of approximately 400 linear feet of soil borings with continuous split-spoon sampling
- Design and installation of excavation shoring and bracing
- Excavation, stabilization, transportation, and disposal of 3,000 cubic yards of contaminated concrete foundations and soil at an approved secure landfill
- Procurement, transportation, and installation of approximately 3,000 cubic yards of clean fill to be used in backfilling the proposed excavation

Sealed bids were solicited and read on December 28, 1988. Eight bids were received. The bids ranged in price from a low of $1,742,143.64 to a high of $3,185,875. The engineer's estimate was $2,816,811. Heritage Remediation/Engineering, Inc., the lowest bidder, was awarded the contract.

UNIT PRICING BREAKDOWN

	Estimated Quantity	Unit Prices		
		Engineer's Estimate	Heritage Remediation/ Eng., Inc.	O. H. Materials Corporation
Bonds and Insurance	NA	LS	LS	LS
Mobilization/Demobilization	NA	LS	LS	LS
Site Preparation	NA	LS	LS	LS
Decontamination Pad	NA	LS	LS	LS
Decontamination, Demolition, Transportation, and Disposal of Aboveground Structures	NA	LS	LS	LS
Grading, Seeding, and Closeout	NA	LS	LS	LS
Subsurface Investigation	400 LF	28 75/LF	76 12/LF	85/LF
Excavation, Transportation, and Disposal of Contaminated Foundations and Soil				
• First	2,700 BCY	326 99/BCY	194 64/BCY	226/BCY
• Next	3,300 BCY	326 99/BCY	184 05/ BCY	225/BCY
Shoring and Underpinning	1,850 VSF	96 35/VSF	60 97/VSF	20 90/VSF
Soil Stabilization	30 Ton	241 50/BT	244 11/BT	192/BT
Backfilling of Excavation				
• First	2,700BCY	23 86/CY	18 38/CY	11 25/CY
• Next	3,300 BCY	23 86/CY	21 00/CY	11 25/CY

COMPARISON OF ENGINEER'S ESTIMATE TO TWO LOWEST BIDS

	Engineer's Estimate	Heritage Remediation/ Eng., Inc.	O. H. Materials Corporation
Bonds and Insurance	$ 60,950	$ 31,137	$ 77,575
Mobilization/Demobilization	250,137	140,356	21,700
Site Preparation	75,279	44,606*	264,340
Decontamination Pad	17,250	31,520	14,100
Decontamination, Demolition, Transportation, and Disposal of Aboveground Structures	92,702	71,223*	69,880
Grading, Seeding, and Closeout	18,400	20,917	31,120
Subsurface Investigation	11,500	30,448	34,000
Excavation, Transportation, and Disposal of Contaminated Foundations and Soil			
• First	882,873	525,528	610,200
• Next	1,079,067	607,365	742,500
Shoring and Underpinning	178,248	112,795*	38,665
Soil Stabilization	7,245	7,323*	5,760
Backfilling of Excavation			
• First	64,422	49,626	30,375
• Next	78,738	69,300	37,127
Total	$ 2,816,811	$ 1,742,143 64**	$ 1,777,340 00

Key

NA = Not Applicable
LF = Linear Feet
VSF = Vertical Square Feet
BT = Bulk Ton
BCY = Bulk Cubic Yards
CY = Cubic Yard
LS = Lump Sum
* = Rounded to the Nearest Dollar
** = Actual Bid Total

Bridgeport Bid Protest (continued from page 2)

sealed bid in Step 2. The offeror bids on his own proposal.

The Army Corps of Engineers (COE) completed Step 1 of the solicitation in early August 1988. Chemical Waste Management (CWM) had submitted two proposals: one for onsite incineration of wastes and a second suggesting use of the Basic Extraction Sludge Treatment process (BEST) to separate oily wastes onsite before removal for offsite incineration. The COE decided to exclude CWM's proposal containing the BEST process on the grounds that the BEST technology had not been sufficiently demonstrated to justify its use at the Bridgeport site. CWM protested the COE decision.

The CWM protest, filed at the GAO on August 12, 1988, maintained that the COE decision was arbitrary, unreasonable, based upon unstated evaluation criteria, and contrary to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). (CERCLA encourages the development and use of alternative treatment technologies.)

GAO denied the protest on December 13, 1988. GAO ruled that it was reasonable for COE to reject CWM's proposal because there was insufficient data to establish the BEST technology's ability to meet the government's production and schedule requirements.■

BIOREMEDIATION OF HAZARDOUS WASTE SITES

A workshop on the application of biotechnologies at hazardous waste sites for engineers and scientists will be held on the dates shown in the box at right.

This two-day workshop will provide attendees with the information needed to assess the viability of biosystems for the treatment of hazardous wastes and to implement onsite remediation. The workshop focuses on:

- Identification of the necessary site or waste characteristics to utilize biological treatment
- Evaluation of the role of treatability tests in assessing performance
- Application of appropriate reactor and/or in situ treatment
- Evaluation of pre- and post-treatment operations and life cycle design

There is no fee for attending the workshop. However, registration will be limited and filled on a first-come, first-served basis, with preference given to state and regional personnel.

For additional information call:

PEER Consultants P. C.
Dayton, Ohio
(513) 252-1222

UPCOMING WORKSHOPS

March 28-29, 1989
Atlanta, Georgia

April 11-12, 1989
Dallas, Texas

April 25-26, 1989
Seattle, Washington

May 16-17, 1989
Boston, Massachusetts

May 24-25, 1989
New York, New York

June 7-8, 1989
Chicago, Illinois

June 21-22, 1989
San Francisco, California

SCHEDULED TRAINING

Hazardous Materials Treatment Technologies (FTS 8-382-2997)	
March 14 to March 17	Region IX
April 4 to April 7	Region II
May 9 to May 12	Region I
Hazardous Materials Incident Response Operations (FTS 8-684-7537)	
April 10 to April 14	Cincinnati, Ohio
April 10 to April 14	Edison, New Jersey
May 1 to May 5	Cincinnati, Ohio
Personnel Protection and Safety (FTS 8-684-7537)	
March 20 to March 24	Region VII
April 3 to April 7	Region VI
April 3 to April 7	Region I
April 17 to April 21	Region I
April 17 to April 21	Region IV
Air Surveillance for Hazardous Materials (FTS 8-382-2997)	
March 20 to March 24	Region VII
April 17 to April 21	Region V
Environmental Risk Assessment (FTS 8-382-2997)	
April 4 to April 7	Region III
May 9 to May 12	Region VI
Sampling for Hazardous Materials (FTS 8-255-2270)	
April 11 to April 13	Region VII
May 9 to May 11	Region V
Introduction to Ground-Water Investigation (FTS 8-383-2997)	
April 18 to April 20	Region VI

ABOUT THE UPDATE

For comments, ideas, submissions, or questions about the Update, please contact Karen Locke at FTS 8-382-7997 or commercially at (202) 382-7997 For copies, contact EPA's Public Information Center at FTS 8-382-2080 or commercially at (202) 382-2080