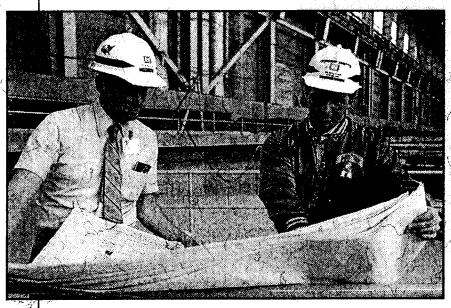
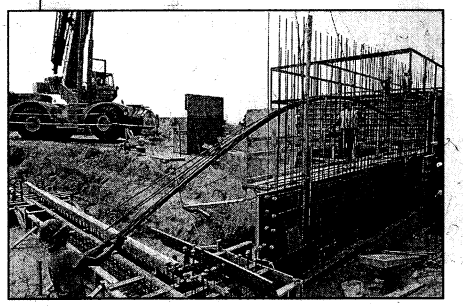
VALUE ENGINEERING

YOUR GOOD IDEAS



CAN INCREASE PROFITS.



HERE'S HOW...

US Army Corps
of Engineers

VALUE
ENGINEERING

TO OUR CONTRACTOR PARTNERS

I encourage you to read this pamphlet carefully. By submitting a Value Engineering proposal, you can increase your profits and help the Corps deliver a quality product at a lower cost to the American people.

The Corps' Value Engineering Program is a partnership that has enabled contractors to increase their profits by over 100 million dollars to date. Through the successful application of the Value Engineering methodology, you too can share in these benefits.

ARTHUR E. WILLIAMS
Lieutenant General, USA
Commanding

VALUE ENGINEERING:
A PROFITABLE PARTNERSHIP

As a contractor, you need to maximize your profits. As a government agency responsible for successful completion of major construction projects, the U.S. Army Corps of Engineers (Corps) needs to find less costly ways to achieve quality results.

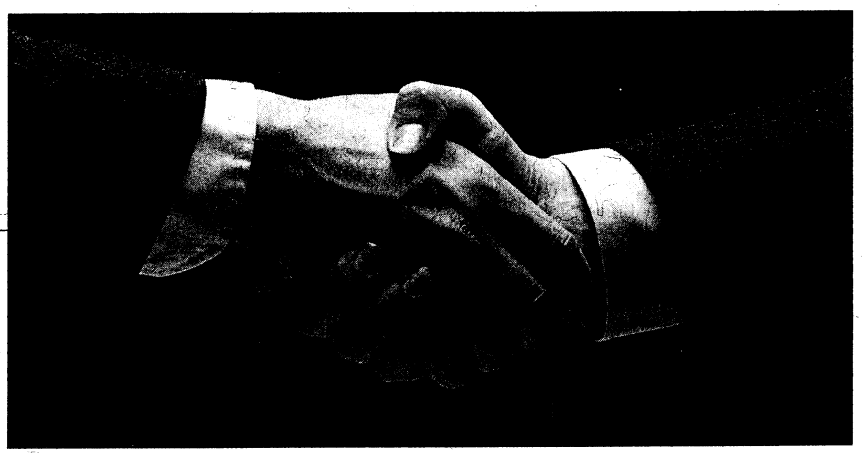
The Corps' ***Value Engineering (VE) Program***[1] is based on a partnering philosophy. It recognizes that the Corps and the contractor share common goals and that, by working together in a spirit of cooperation, we can produce a quality facility while saving the taxpayer money. ***The VE Program also offers contractors a unique opportunity to increase profits — often substantially.*** This program boasts an acceptance rate of over 60% and some contractors' share of the savings has been in excess of $1 million.

On the pages that follow, you will find a brief introduction to the VE concept, plus:

- How you can profit from the VE Program;
- How a VE Change Proposal (VECP) is generated;
- How to conduct a VE analysis;
- How to prepare a VE Change Proposal;
- Where you can get further information.

We hope this information will stimulate your interest in taking advantage of the profit-enhancing opportunity offered by Value Engineering.

[1] *The formal rules for the VE Program are found in Part 48 of the Federal Acquisition Regulation (FAR) and in FAR clause 52.248-3 of Federal construction contracts. This pamphlet is an informal discussion of the VE principles.*



WHAT IS VALUE ENGINEERING?

If this is your first contract with the Corps, you may be unfamiliar with the term ***Value Engineering,*** found in the VE Construction Clause of your contract. The Corps formally defines VE as "the organized study of functions to satisfy user needs with a quality facility at the lowest life-cycle cost through applied creativity."

VE involves ***developing fresh ideas for delivering a quality product at a lowered total (life cycle) cost*** — thus giving the best value for the dollars spent. Value Engineering is a partnership between you and the Corps which enables both to benefit.

It is important to understand that VE is ***not*** merely cost-cutting (reducing costs by simply eliminating features specified in the contract) or cutting corners (reducing costs by substituting inferior quality). Nor is it a matter of accidentally stumbling on a way to reduce construction costs. Rather, it is a ***proven, systematic approach to problem-solving.*** Several steps are involved in the process:

- ***Analyzing*** all phases of the construction project to identify current or potential areas of high cost and low value;

- ***Brainstorming*** to identify (1) high cost/low value items and (2) alternative ways of performing the same functions more efficiently and cost-effectively. (Think in terms of "What else will satisfy the required function?");

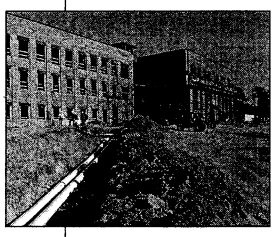
- ***Evaluating*** alternatives to select the best way to reduce the cost of performing the necessary functions while maintaining high quality and project integrity;

- ***Presenting*** your ideas to the Corps by submitting a VE Change Proposal.

In other words, Value Engineering involves actively ***managing*** the construction planning process by systematically using your company's experience, ingenuity and professional capabilities to achieve a superior result for less money. ***We need your ideas to help us do things better.***

HOW VALUE ENGINEERING CAN INCREASE YOUR PROFITS

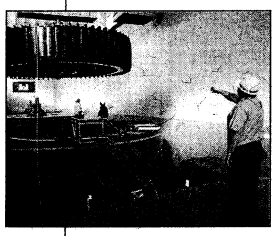
You will probably agree that competition among construction contractors has never been tougher than it is in today's economic environment. And, with more firms competing for coveted pieces of a shrinking pie, the general result is reduced profits for everyone. That is why we think you will find the VE contract clause especially attractive.



Together with your hands-on experience, technical competence and creativity, the ***VE Construction Clause*** in your contract opens the door to higher profitability. As a contractor who is on the job every day, you are actively involved in construction operations and make a point of keeping up with state-of-the-art advances in construction. Your direct work site involvement puts you in an ideal position to use your specialized knowledge and skills to devise new, more cost-effective ways of getting the job done.

The VE Program is, in essence, a bonus program. Under the VE Construction Clause, which is a part of every Corps construction contract over $100,000, ***your company can keep 55% of the savings you generate*** through a VE Change Proposal under a fixed price contract.

Your profit will never be reduced by reducing costs — it can only increase! The Corps has a long history of proven achievement in Value Engineering, realizing more than $2.6 billion dollars in in-house and contractor savings since 1967. We believe that, with increased emphasis on the program and participation by our many contractor partners, savings and profits will soar.



Frankly, we know of no better way to give a healthy boost to your bottom line.

THE VALUE ENGINEERING CHANGE PROPOSAL (VECP)

The way that you take advantage of the VE Construction Clause in your contract is to submit a VE Change Proposal (VECP). If the outcome of a study you conduct indicates that savings can be realized through project modification with no detrimental impact on quality, those modifications are formally presented in a VE Change Proposal.

Following submission, your VECP will be evaluated. If your proposal is approved, the contract will be modified accordingly. To date, the average acceptance rate of contractor-submitted VE Change Proposals has exceeded 60%! Under the Corps' current partnering philosophy, this percentage is expected to climb even higher.

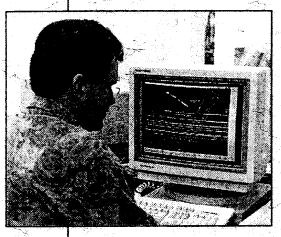
If your proposal is accepted, your profit will increase! ***Savings resulting from your approved VECP under a fixed price contract will be divided between you and the government on a 55% - 45% basis, the larger share going to you, the contractor. On supply contracts, the sharing ratio is 50%.***

The dollar amount of such savings is based on the net cost reduction — in most instances, gross savings less the contractor's cost for preparing the proposal. Normal government administrative costs for processing your proposal are not deducted before cost-sharing is computed. However, if the proposal necessitates expenditures to the government beyond normal administrative costs — for testing, operations, maintenance or logistic support, for example — such costs will be deducted before cost-sharing computations are performed.

The Corps does not become involved with contractor/subcontractor contractual issues but does encourage VECPs from your subcontractor (submitted through your contract). For subcontracts totalling $50,000 or more, the contractor is encouraged to include a VE Clause in the subcontractor's contract. For subcontracts of lesser value, such agreements are optional. In either circumstance, subcontractors are paid from the contractor's share of the savings. If managed effectively, involvement of subcontractors in VE plans can maximize savings, thus resulting in greater profits for contractors.

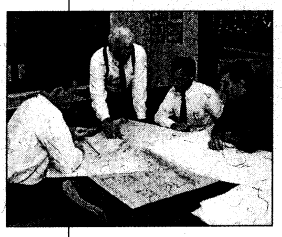
CONDUCTING
YOUR VE ANALYSIS

Although your good ideas usually occur as a result of your everyday activities, doing a *VE Analysis* can help form a foundation for your VE Change Proposal (VECP). Consequently, the effectiveness of your idea — and ultimately its acceptability to those with the authority to approve it — depends on the care with which you conduct your VE Analysis. Following the five recommended steps below will help assure a thorough and persuasive Change Proposal:



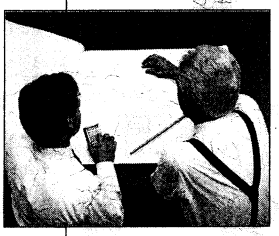
1. ***Identify potential areas for consideration.*** Carefully analyze project drawings and specifications to determine which design features offer potential to be accomplished at a lower cost without compromising essential functions or features. Ask: "Are there other good ways to perform this function?" Your particular background may help you view things differently.

2. ***Develop a priority list.*** Evaluate high-cost areas that seem to have a low value; then list the items in the order of their cost-reducing potential, beginning with the most promising.



3. ***Study each item in order of priority.*** Remember– working with a team of three or four qualified people is usually more efficient and productive than working alone. Analyze each item thoroughly, thinking in terms of what will be required to accomplish the function by the alternative you are proposing.

4. ***Select the most promising options and gather all pertinent data.*** Completeness is critical, and marked-up drawings and specifications clearly indicating any necessary changes are required. Your VECP will also require substantiation of the anticipated cost benefits.



5. ***After preparing your Change Proposal, review it carefully.*** It is important that your VECP be accurate, clear and complete.

PREPARING
YOUR CHANGE PROPOSAL

To reach an informed decision, the government evaluator must have all the facts and figures concerning the VE Change Proposal you are submitting. Therefore, you must make certain that your VECP is complete and accurate, as well as concise and easy to understand.

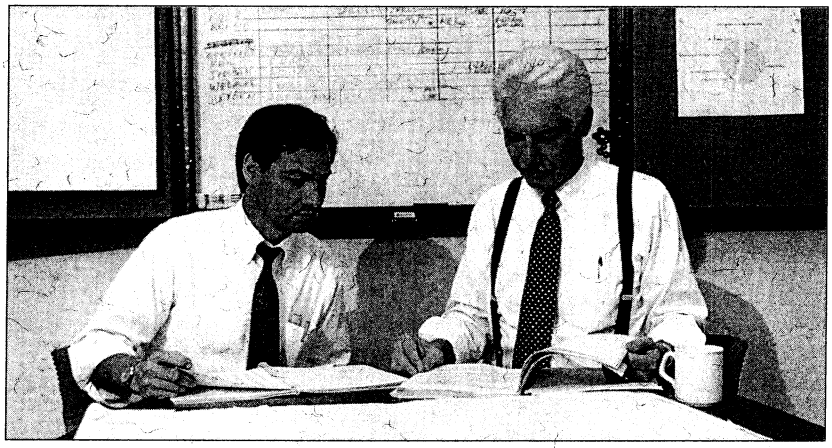
Your VECP *must* include:

- ✎ ***Pertinent backup information*** and all quantifiable data concerning the work to be performed;
- ✎ ***The materials*** to be used;
- ✎ ***The estimated*** savings.

Explain your proposed change in detail. Since the main objective is cost savings, your proposal must include reliable estimates of savings in order to be considered complete. To facilitate evaluation, it is also a good idea to include engineering calculations and sketches of your proposed change, if appropriate. Also be sure to indicate how your proposal will help produce a quality result.

After you have completed your proposal, submit it (together with an appropriate cover letter) to the Resident Engineer at the work site and forward a copy of this material to the Contracting Officer, in accordance with the VE Incentive Clause of your contract.

Each Corps division and district office has a Value Engineering officer who will be pleased to answer your questions and provide assistance, so do not hesitate to contact them.



Use the following checklist to help assure the completeness of your VECP:

Have you...

1. ***thoroughly described the differences between the original design*** and the modified design you are proposing, compared their relative advantages and disadvantages, and justified any alteration of the function or characteristics? (Explain your proposed changes in detail.[2])

2. ***itemized contract requirements that need to be changed,*** including detailed specifications of recommended revisions?

3. ***estimated net cost reductions and demonstrated the basis for your recommendations*** by thorough cost-comparisons?

4. ***estimated the cost to the government*** of implementing your proposed change, including test-and-evaluation and operating-and-support costs?

5. ***considered government costs for maintenance, operation and government-furnished property?*** (Although cost reductions in these areas are not subject to sharing under the VE Incentive Clause, their inclusion can help sell the change to decision makers.)

6. ***specified the date by which the change order must be issued*** for maximum benefit and included any effects on contract completion time?

7. ***briefly identified all of other, prior submissions of this VECP?***

8. ***verified your proposal*** for accuracy and reviewed it for completeness?

[2] *See FAR clause 52.248-3 (c) and (d).*

WE
WANT YOUR HELP

Now that you have a brief overview of the Value Engineering Construction Clause, we hope you will take advantage of its potential profit benefit. If you are reluctant to spend time and money on a less-than-certain VE Analysis and Change Proposal, talk it over first with the appropriate Resident or Area Engineer or the local Corps VE Officer. Just remember that any informal encouragement you may receive concerning your proposal is in no respect an official guarantee of acceptance and cannot serve as a legal basis for subsequent claims against the government. We look forward to receiving your VECP submittal!

WANT
FURTHER INFORMATION?

For more information concerning the Corps' Value Engineering Program, contact the Value Engineering officer in your Corps District.

Department of the Army, HQUSACE
ATTN: CEMP-EV (Chief, Value Engineering)
20 Massachusetts Ave., N.W
Washington, DC 20314-1000
Phone: (202) 272-8738
Fax: (202) 504-5515

CREATIVE
THINK SPACE

USE THIS SPACE TO DEVELOP AND RECORD YOUR IDEAS.

What is the function of the item?

What does it do? What must it actually do?

What else can be used to achieve the required function?

Are the plans and specifications too confining? How?

Can the item be made larger, lighter, etc.?

Can a different procedure be used instead of that specified?

Have I ever seen anyone do it a different way? Are there other good ways of doing this?

Pretend you are the item or procedure under consideration and ask yourself..."How can I best accomplish what is required of me?"

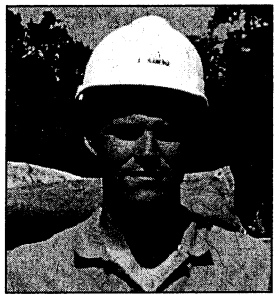
Break old paradigms! Think in a new way!

"I feel that the Value Engineering Program has saved the government a considerable amount of money and has provided the owner with a far superior end product. I am very pleased with the way our proposal was handled and will continue to participate in the Value Engineering Program in the future."

THOMAS H. STANTON
Project Engineer
Laidlaw Environmental Services

"Our Value Engineering proposal was able to be implemented and still meet project schedule requirements due to the communication and cooperation established by the Value Engineering and partnering concept."

KEVIN J. DULLE, P.E.
Director of Remedial Construction
Sverdrup Environmental, Inc.



"The Value Engineering Program is a great program. We have had a number of good proposals approved by the Kansas City District and we will submit other proposals at every opportunity."

KEN MAUS
DiCarlo
Construction Company

"The Value Engineering Program is a good deal. We get fast, responsive answers."

STEVE KOEGBOEHN
Neosho Construction Company, Inc.

EP 11-1-4
15 May 1995

VALUE
ENGINEERING

US Army Corps
of Engineers

This pamphlet supercedes EP 11-1-4, dated 1 April 1981.