DEPARTMENT OF DEFENSE

CONTRACTOR'S GUIDE TO VALUE

ENGINEERING

Version 2.2

June 2010

"*Your efforts over the past 29 years have accounted for savings and cost avoidances of more than 40 billion dollars…. These significant savings are a result of your diligent efforts in driving innovation, speed and agility within the acquisition cycle. Your development of sound acquisition practices that identify and prioritize requirements, and provide tailored plans to streamline operations ensure cost-effectiveness and improve quality. These practices help guard against inefficiency and waste while helping our Warfighters remain competitive. This has been the goal of the Value Engineering Program since its inception."*

May 2010 Value Engineering Awards Ceremony, the Honorable Zachary Lemnios, Director, Defense Research and Engineering, Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics

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Section 1. What is VE?

Value Engineering (VE) is an effective technique for reducing costs, increasing productivity, and improving quality. It can be applied to hardware and software; development, production, and manufacturing; specifications, standards, contract requirements, and other acquisition program documentation; facilities design and construction. It may be successfully introduced at any point in the life-cycle of products, systems, or procedures. VE is a technique directed toward analyzing the functions of an item or process to determine "best value," or the best relationship between worth and cost. In other words, "best value" is represented by an item or process that consistently performs the required basic function and has the lowest life-cycle cost. In this context, the application of VE in facilities construction can yield a better value when construction is approached in a manner that incorporates environmentally-sound and energy-efficient practices and materials.

Because "costs" are measurable, "cost reduction" is often thought of as the sole criterion for a VE application, and indeed, cost reduction is primarily addressed in this document. However, the real objective of VE is "value improvement," and that may not result in an *immediate* cost reduction.

VE originated in the industrial community, and spread to the Federal Government due to its potential for yielding a large return on investment. VE has long been recognized as an effective technique to lower the Government's cost while maintaining necessary quality levels. Its most extensive use has been in Federal acquisition programs. The Federal Government's application of VE to projects, processes, and products has demonstrated success. Annually the Department of Defense (DoD) reports savings of approximately $1 billion.

VE is a management tool that can be used alone or with other management techniques and methodologies to improve operations and reduce costs. For example, the acquisition reform efforts, the emphasis on performance-based specifications, the design-build project delivery process, and the use of Integrated Product/Project/Process Teams (IPT) can include VE and other cost-reduction techniques, such as life-cycle costing, cost as an independent variable, concurrent engineering, and design-to-cost approaches. These techniques are effective as analytical tools in process and product improvement. VE can be used with lean six sigma processes to challenge requirements and identify functions that cost more than they are worth.

The DoD VE program has two distinct components:

- An in-house effort where VE is performed by DoD military and civilian personnel and
- An external effort where VE is performed by DoD contractors and applied to contracts after DoD approval.

This latter component is the principal subject of this document. With few exceptions, it is mandatory (since June 1962) to include VE provisions in most DoD contracts to encourage contractor participation and thereby realize the full benefits from cost reduction opportunities and innovations. These contract provisions provide the basis for the contractor to obtain a share of the savings that result from an approved VB effort. Before this development, submitting a cost-reduction change led to a commensurate decrease in the size of the contract and usually reduced profit by a proportional amount. The VE provisions changed this paradigm by providing the contractor with an incentive to submit Value Engineering Change Proposals (VECPs) to reduce cost.

Section 2. Potential VE Applications

Many items in the DoD inventory are regularly procured in large quantities in accordance with Government-developed specifications. Due to advances in technology, materials, and processes, the applicable

specifications may be outdated, and "technological regression" by a contractor may be needed to produce to the existing specifications. Items in this category are good candidates for a VE project. However, costly, non-value added contract requirements not directly related to the specifications should not be over looked. Packaging, shipping requirements, management reports, etc. may represent a target of opportunity which will require minimal, or no, investment by the contractor to achieve a reduced cost of performance under the contract.

Another area that offers potential for VE is where an item was designed and developed on a stringent schedule to meet urgent requirements. Under these conditions, the designers often incorporate "old, reliable" components or subsystems into the design simply because time will not permit qualification of an improved substitute. However, a newer, less expensive, and more reliable alternative may have been developed and proven since the original system development. When this situation arises, submission of a VECP to incorporate the improved item or subsystem should be considered. Diminishing manufacturing sources and material shortages (DMSMS) provide significant and potentially funded opportunities for VE. DoD Components are beginning to program resources to mitigate these very serious problems. Such resources could be a source of funding for non-recurring costs associated with a VE project. In addition, DMSMS may I also be established as a life-cycle cost element for categorizing and identifying cost savings.

Typical opportunities for VE projects will be derived from a known problem, a cost driver study, or anything that indicates a product or a process should be improved. In the early stages ofVE application within an organization, sophisticated project-selection I criteria are not usually needed. umerous opportunities are frequently available for VE to offer substantial benefits such as eliminating high cost drivers; improving performance, reliability, or producibility; or resolving executive management interest issues.

Potential for VE may be found in almost any aspect of a contract or program. A general I listing of these aspects (not all-inclusive) follows:

- Construction
- Design or equipment modifications
- Equipment and logistics support
- Facilities and hardware
- Manufacturing processes
- Materiel handling and transportation
- Packaging/packing and preservation
- Procurement and re-procurement
- Publications, manuals, procedures, and reports
- Quality assurance and reliability
- Parts obsolescence
- Salvage, rejected, or excess material
- Site preparation and adaptation
- Software (computer) programs and flow charts
- Software architecture development
- Specifications/drawings
- Technical and logistics data
- Testing, test equipment, and procedures
- Tooling
- Training

While value engineering is applicable at any point in the life cycle, the savings potential decreases as the program

ages. VE should be applied as early as possible in the life cycle. Early VE tends to produce greater savings (or cost avoidance) because that is where most of the costs are committed--opportunities for change are greater and the changes cost less to implement.

However, if early opportunities are missed, VE can still be applied. VE late in a program is precluded only in those rare instances where the cost of the VE effort and subsequent implementation would be greater than the savings potential. Many systems remain in inventory for a substantial amount of time, often longer than originally planned. While later VE normally adds implementation costs and affects smaller quantities, such deterrents are typically offset by improved performance and reliability through (1) advances in technology and (2) savings generated from increased product life. Usually, some opportunities offer net savings at any stage of a program.

Section 3. What Is a VECP?

A VECP is a proposal submitted to the Government by the contractor in accordance with the VE clause in the contract. It proposes a change that, if accepted and implemented, provides an eventual, overall cost savings to the Government. A VECP may update an existing design to the current state-of-the-art technology, simplify complex material by modifying or eliminating components, update specifications/drawings providing improved data for future procurements, or reduce Contract Data Requirements List (CDRL) items, to name a few examples. Although termed "value engineering," no engineering effort is required; *only* a proposal that reduces the cost of performance under the contract and requires a contract change for implementation. The VE provisions in a contract prescribe that the contractor receives a substantial share in the savings accrued as a result of implementation of the change.

A VECP does not require a change in a specification; it requires only a change in the contract. In order to qualify as a VECP and to ensure that savings can be shared, the proposed change must be submitted under a current contract and must meet two primary requirements:

1) It must require a change to the contract under which it is submitted.

2) It must provide an overall cost savings to the Government after being accepted and implemented.

Note that a VECP could result in increased hardware cost but reduced Operations and Support (O&S) cost, resulting in an overall savings to the Department of Defense. A VECP can be submitted at any time under an active contract with a VE clause.

DoD has established a knowledge-based community of practice (CoP), initially focused on VECPs, to help practitioners share and learn from one another, face-to-face and virtually. The CoP will help navigate the VECP process, improve the probability of successful VECP evaluations, provide assistance and answers to technical questions, and serve as a forum for disseminating the latest information. The CoP can be accessed by going to the Defense Acquisition University's Acquisition Community Connection Web site at https://acc.dau.mil/vecp .

Section 4. Types of VE Provisions in Contracts

The basic VE provision is the VE incentive (VEl) clause in the FAR. The VEl clause is included in most

supply/service contracts when the contract price exceeds $100,000. It is also included in most spares/repair kit contracts over $25,000 if the contract is not for standard commercial parts. The VEl clause may be included in contracts under $100,000 if the contracting officer sees a potential for significant savings. If the VEl clause is in the contract, contractor participation is voluntary. However, when contractors do participate in the VE program by originating, preparing, and submitting VECPs, they will be rewarded for their (and any of their subcontractors') ideas if the ideas are adopted by the procuring activity. The sharing rate (percentage of the savings) received by the contractor is specified in the FAR.

In addition to the basic VEl clause, the FAR contains alternative provisions that can be incorporated into a contract that requires a mandatory VE effort by the contractor. This is known as the VE Program Requirement (VEPR) clause, and may be included in initial production solicitations and contracts for major programs if the contracting officer determines that significant savings may result from a sustained, specified VE effort. Typically, solicitations and contracts employing a VEPR include a Statement of Work, a Contractor Data Requirements List (CDRL) requirement for submittal ofVECPs, and a separate Contract Line Item. The use ofthe VEPR has declined in the Department of Defense due to the extensive amount of Government preparation and oversight required to manage it.

4.1 What To Do if There Are No VE Provisions in the Contract

A contractor could have an idea for a VECP but has a contract containing no VE provisions. In this case, the contractor should notify the procuring contracting officer (PCO) that it has an idea and would like to submit a VECP. The contractor should request that a contract modification be issued as soon as possible to incorporate applicable FAR provisions. Normally, VEl provisions will suffice. However, ifthe I contractor's idea will require significant initial funding and the marketing/pre-sell efforts have indicated that the Government is interested, the contractor may request the VEPR provision.

4.2 Subcontractor VE

The FAR requires prime contractors to extend VE provisions to their subcontractors on contracts of $1 00,000 or greater. VE provisions should also be extended to subcontractors on contracts of lesser value unless the nature of the work precludes VE benefits. A subcontractor must submit its VECP to the prime contractor who, in turn, submits it to the Government. (See also Subsection 7.3.)

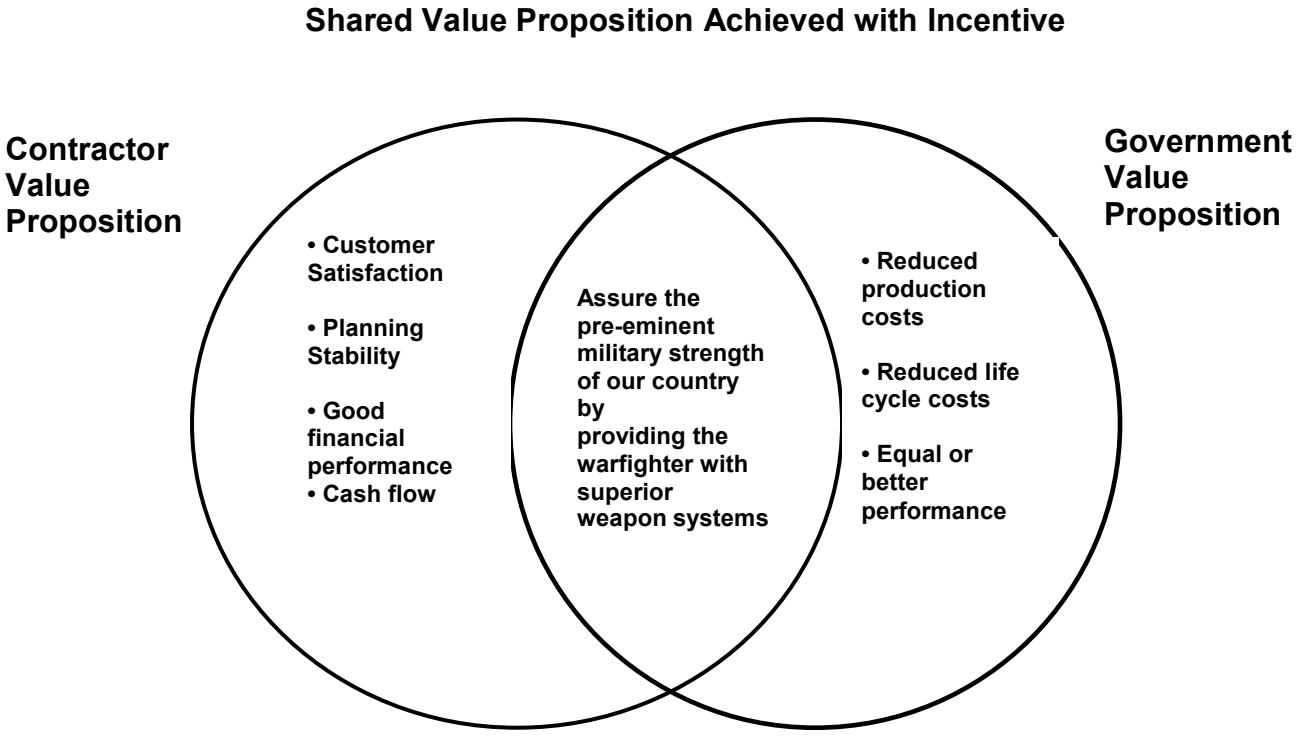
4.3 VE and Performance-Based Contracts

Recent changes to promote acquisition excellence have mandated the increased use of performance-based contracts. The belief was that performance-based contracting would eliminate the contractor's incentive to submit VECPs because, under a performance based contract, contractors could make changes without Government approval and keep all the savings. However, a contractor would submit a VECP and share the savings with the Government for several reasons. In situations where there are high development and I implementation costs, new/risky technologies, changes that require Government test facilities, or changes that impact the acceptance of products, it is mutually beneficial for contractors to submit (and the Government to accept) VECPs. Without VECPs, the contractor would most likely refrain from any investment because of the risks involved. In addition, even in a performance-based contract, some areas that remain under Government control may have VECPs submitted for them. Finally, in a contract where cost and pricing data may be collected, it often is beneficial for a contractor to submit a VECP to secure a share of future savings that otherwise would typically be negotiated away as general efficiencies.

Section 5. Benefits of Submitting VECPs

As depicted in Figure 1, the Government and its contractors depend upon each other to improve their joint value proposition. While the value propositions are different, there is overlap; actions that benefit one can benefit the other. Typically, incentives are used in the contract so that the contractor behaves in a way that will enhance both value propositions. VE provides and is based on a shared value concept through incentives for the Government, incentives for the contractor, and the equally shared incentive of providing the best possible warfighting capability and systems to the military within the context of a successful business relationship. VE incentivizes industry to use its best engineering talent in a way that helps solve problems that are important to the Government.

Figure 1: Joint Government Industry Value Proposition



Source: Adapted from Lean Aerospace Initiative economic incentives research

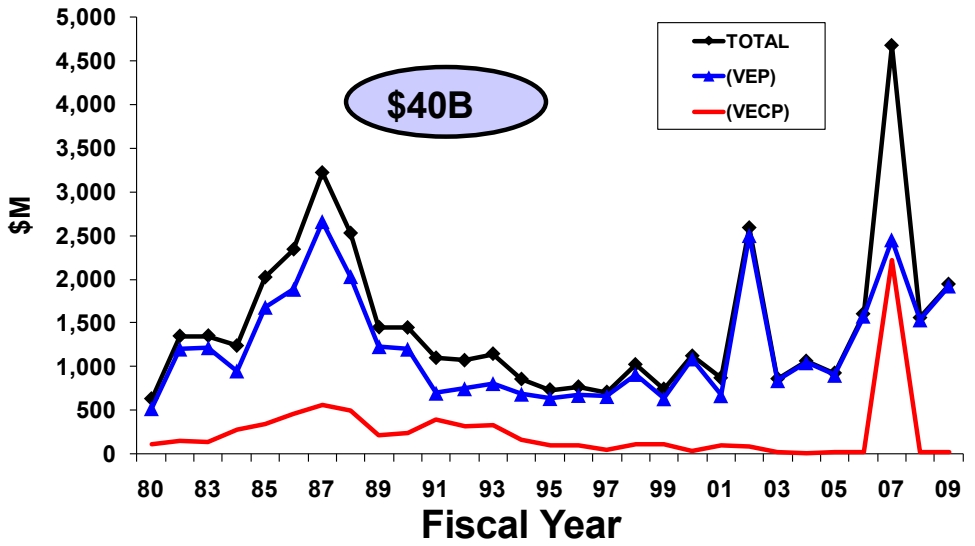
5.1 Benefits to the Department of Defense

In today's market, VE has proven to be a sound economic venture. Its overall record of performance (where it has been intelligently applied, discreetly managed, and honestly reported) is impressive. From 2000 through 2005, the average ROI within the Department of Defense was 7.6 to I. Figure 2 shows DoD VE savings and cost avoidance since fiscal year 1981. Cumulatively, more than 530 billion has been saved, with an average of about $1 billion annually.

Equally important is how the savings are used. The dollar savings/assets made available through VE successes may be reapplied within the program, command, or component to finance approved but previously unfunded requirements.

From a qualitative perspective, Value Engineering creates opportunities for the Department of Defense to achieve long-term benefits in cost reduction, communications, procedures, waste reduction, performance, efficiency, reliability, producibility, quality, effectiveness, readiness, war-fighting capability, cycle time, and so on.

Figure 2: DoD VE Savings and Cost Avoidance



5.2 Benefits to Contractors

From the contractor's perspective, the benefits of using Value Engineering are also substantial. The contractor:

- Shares in the savings that accrue from implementation, in that VECPs provide a source of profit not available under other provisions of the contract and excluded from profit limitations on government contracts;
- May increase the work to be performed on the contract if the Government share is placed back on the contract for previously unfunded efforts;
- May secure a price advantage during system re-procurement after implementing a successful VECP on a previously completed system/item;
- Establishes a reputation as a cost-conscious supplier (the Department of Defense presents VE Achievement Awards to contractors);

- Improves communication with the customer;
- Receives reimbursement of development cost on approved VECPs;
- May obtain usable technology for other product lines; and
- Enhances the retention and growth of corporate technical expertise through advanced technology insertion and fostering a positive working environment.

Each of these benefits is relatable to the elements of the contractor value proposition in Figure l--customer satisfaction, planning stability, good financial performance and cash flow.

Section 6. Preparing VECPs

VECP preparation encompasses marketing the idea, gaining informal Government approval, developing the required information, and making a formal submission.

6.1 VECP Marketing

VE clauses in DoD contracts are not enough. The clauses merely invite or require contractors to question the value of Government specifications, statements of work, and requirements that contribute nothing (except cost) to the contract tasks or items being acquired. Both parties (Government and contractor) must work together to capture the actual benefits of VE efforts.

As with any change to an active contract, communication between the contractor and the approving authority is critical because a VECP is a change to the contract and thus a change to the program. A program manager's primary concerns are schedule, performance, and cost. Any change that could impact any of these areas requires early discussion and general agreement from all parties involved, including the procuring contracting officer (PCO) and the administrative contracting officer (ACO) for the particular contract.

Because the cost ofpreparing a formal VECP is often extensive, it is important for the contractor to pre-sell the VE idea. Through clear communication with the procuring activity, pre-selling enables the contractor to get an indication from the Government of whether a potential idea should be pursued. The contractor should get to know the Government Point of Contact (pOC)/Government VE advocate who will have the responsibility for evaluating and accepting/approving the VECP. A potential VE idea should be presented as early as possible to the appropriate POC/advocate.

This informal submission may take the form of a presentation that details the technical aspects of the idea, its advantages and disadvantages, an estimate of the cost to implement, potential cost savings, and as many of the eight FAR 52.248-1 requirements as possible. A contractor is not required to make an informal submission, but such a submission is likely to improve the contractor's chances of success for acceptance of a formal VECP, especially if the development of the idea presents the possibility of significant risk to the contractor or the program. This presentation can help the Government determine whether the idea deserves additional consideration or should not be pursued. If the Government is receptive to the idea, the contractor can request the Government's views on qualification and testing requirements as well as other Government cost impacts. The Government's validation that the preliminary proposal has potential to be accepted as a VECP does not guarantee that the VECP will actually be accepted/approved nor does it guarantee ownership of the idea. Also, the Government's favorable response does not obligate the contractor to submit a VECP, nor does it obligate the Government to pay for effort already expended on the VE initiative.

While a preliminary informal submission does not eliminate all risk to the contractor, it reduces contractor risk by preventing a contractor's expenditure of significant funds and time on ideas that have little or no chance of being accepted/approved. In rare cases of concurrent competitive contract efforts, an independent formal submittal of a VECP from a competitor may pre-empt the favorable consideration of a preliminary proposal. The Government is prohibited from unilaterally "using" a contractor's VECP idea or sharing it with a competitor, but there is no prohibition on competitors independently pursuing similar efforts and making independent formal submittals. Submission of a preliminary presentation does not establish ownership of a VE idea or the right to share in any resultant savings. Ownership is established only after a fully documented formal VECP is submitted.

In summary, preliminary submission of an idea(s) for a VECP is advantageous to the contractor in the following ways:

- It establishes a "Date of Record" for contractor development costs incurred in preparation of the VECP
- It reduces the risk of expending time, effort, and funds on an idea that the Government does not deem worthy of pursuit.

6.2 Basic Requirements of the Formal VECP

When the contractor makes the decision to submit a VECP, the individual(s) responsible for preparing it should realize that the chance of the VECP being approved is proportional to the completeness of its preparation. Sufficient information must be presented so that the Government can conduct a thorough evaluation within a reasonable amount of time. Failure to provide adequate data will usually result in a request for additional data (which significantly delays the process) and could result in rejection of the VECP. The contractor should prepare a VECP using an approach similar to responding to a formal procurement solicitation. The following is the FAR description of the minimum information required for a VECP submission:

1) Describe the difference between the existing requirement (i.e., the basic contract, a specification, a drawing, or the Statement of Work) and the proposed change. List the comparative advantages and disadvantages of each alternative. Provide justification when a function or characteristic of an item is being altered. Describe the effect the proposed change will have on the performance of the end item. Include pertinent objective test data.
2) Make an analysis and itemization of each contractual requirement that must be changed if the VEep is accepted. Describe and price each contract change. Include any recommendations for changing specifications.
3) Identify the first unit (or item, task, etc.) that will be affected by the VECP.
4) Provide a detailed cost estimate for both the old and proposed methods. Make sure estimated contractor developmental and implementation costs are accounted for as well as any costs attributable to subcontractors. In many cases a rough order of magnitude estimate should be used to expedite VECP submittal. Updated cost data can be provided while the VECP is going through technical review.
5) Provide a description and estimate of costs the Government may incur in implementing the VECP, such as test and evaluation and/or 0&8 costs. 6) Predict, as close as possible, the collateral cost savings or increases that the Government will experience upon implementation of the VECP.
6) Predict, as close as possible, the collateral cost savings or increases that the Government will experience upon implementation of the VECP.

7) Identify the point in time that a contract modification implementing the VECP must be issued in order to maximize possible savings. Note any effect the contract modification will have on the delivery schedule or contract performance time.
8) Identify any previous submissions of the VECP giving the dates submitted, agencies involved, contract numbers, and previous actions by the Government, if known.

6.2.1 Format of the Formal VECP

The FAR clause does not specify a particular format to be followed in preparing a VECP. Most contractors use the standard Engineering Change Proposal (ECP) format with the "value" considerations added. Configuration management should be performed in accordance with the terms of the contract. Any questions should be directed to the Government contracting officer.

6.2.2 Where to Send VECPs

The FAR governs the distribution of VECPs. The clauses for supply/service contracts require that VECPs be submitted to the PCO and to the ACO when the contract is administered by other than the Defense customer (e.g., Defense Contract Management Agency). Copies should also be sent to the appropriate Program Office and to the Government VE Office/advocate.

The Government VE advocate should be made aware of the VECP to assist in expediting the evaluation and to support the accept/reject decision process by the PCO. The Government VE advocate monitors all VECPs received and, through close coordination with the PCO and Program Office, facilitates timely processing. The Government VE advocate can also serve as a point of contact from which the contractor may obtain the status of the VECP.

6.2.3 Transmittal Letter

Preparation of a transmittal letter forwarding the VECP is also important to achieving success. The transmittal letter should state that the VECP is being submitted pursuant to the VE provisions of the contract. The transmittal letter should also serve as a summary of the contents of the VECP and should briefly state the nature of the proposed change, provide estimated price changes, and refer to where complete details can be found in the proposal. The transmittal letter serves as a table of contents of the proposal and as a marketing document, bringing out the highlights of the proposal in both technical advantage and overall cost reduction to the Government.

6.2.4 Restricting Data

Normally, the Government has unlimited rights to use the data in a VECP. If a VECP contains information that the contractor wishes to restrict from use before Government approval, the contractor should include an appropriate legend on each page ofthe VECP. The FAR language for supply/service contracts for this legend is as follows:

> This data, furnished under the VE clause of Contract No. , shall not be disclosed outside the Government or duplicated, used, or disclosed, in whole or in part, for any purpose other than to evaluate a VECP submitted under the clause. This restriction does not limit the Government's right to use information contained in these data ifit has been obtained or is otherwise available from the contractor or from another source without limitations.

However, if the VECP is accepted, the Government normally has the right to use any and all data contained in the VECP and its supporting documents.

If the VECP contains proprietary data that the contractor wishes to restrict even after acceptance of the VECP, a statement to that effect must be included in the VECP. The proposal should be marked with the appropriate limited rights legend from the "Rights in Technical Data and Computer Software" clause of the DoD Federal Acquisition Regulation Supplement, and the contractor must explain in the proposal the basis for asserting limited rights. The contract modification implementing the VECP should specify the limited rights that the Government has accepted. The contractor should realize, however, that a VECP that results in a sole-source condition for future acquisitions might not be as readily accepted as one for which this restriction on sources is not imposed.

6.3 Additional VECP Guidelines

The following additional guidelines apply to submission of a VECP:

1. When a contractor submits a VECP for approval, the contractor should not initiate action to implement the change until the contractor receives a formal contract modification approval from the Government.
2. When a contractor submits a VECP, the contractor should identify other similar or related contracts to which the VECP may apply (if known). Identify the potential to use other program customers to participate in the VECP nonrecurring cost (e.g., foreign military sales customers).
3. When a contractor undertakes a VECP effort, the contractor must keep records of development costs and require that subcontractors do the same.
4. Contractors should be as accurate as possible in calculating implementation costs and insist that the Government provide accurate and complete data when calculating Government implementation costs.
5. When a VECP is incorporated into the contract, the contractor should maintain internal records identifying the first item delivered containing the VECP.

Section 7. Sharing of VECP Savings

The Department of Defense has been encouraging submission of VECPs since the VE policy was first established in the Federal Acquisition Regulation (FAR). Many changes have occurred over the years that have clarified the FAR language and increased the contractor's share of savings.

Acquisition and collateral savings are two basic types of savings that can be shared when a VECP is approved and implemented under a supply/service contract. Subsections 7.1 and 7.2 describe the sharing arrangements for firm fixed price contracts with VEl provisions, and Subsection 7.3 discusses sharing arrangements with subcontractors. Sharing arrangements vary with other types of contracts. FAR Part 48 and 52.248-1 provide the definitions of terms used in VE, the criteria for VECP acceptance, and approved sharing rates. In addition, incentive contracts may contain special provisions that ensure no adjustments are made to targets or ceilings when an approved VECP results in instant contract VECP savings are rewarded under the overall contract cost incentive. Whatever the type of contract, it is the Government's intent to offer a full range of motivational VE options to contractors while precluding duplication of incentives.

7.1 Acquisition Savings

The FAR defines "acquisition savings" as "...savings resulting from the application of a VECP to contracts awarded by the same contracting office or its successor for essentially the same unit." Acquisition savings may include savings obtained on the instant contract, concurrent contracts, and future contracts.

The instant contract is the contract under which the VECP is submitted. If the VECP is accepted and implemented on items delivered under this contract, the contractor will receive a percentage share of the net savings that accrue as a result of the VECP. The contractor's costs (and subcontractor's, if applicable) for development and implementation of the VECP and the Government's costs for implementation are all considered when calculating savings. A contractor's development costs are those costs incurred in developing, testing, preparing, and submitting the VECP. Development costs materialize after it has been determined that a VECP will be prepared and before acceptance of the VECP by the Government. Implementation costs are those costs resulting from contractual changes required as a result of Government acceptance of the VECP. Implementation costs materialize after the VECP has been approved. It shall include any subcontractor's allowable development and implementation costs and any value engineering incentive payments to a subcontractor that clearly result from a VECP accepted by the Government under this contract. The contractor may choose any arrangement for subcontractor value engineering incentive payments provided that the payments shall not reduce the Government's share of concurrent or future contract savings or collateral savings. The arrangements negotiated for the instant contract are continued in future contracts, including any negative instant contract savings for the contractor submitting the VECP to the Government.

Concurrent contracts are those contracts that the VECP originator (referred to as Contractor A) and other contractors (Contractors B, C, etc.) have for essentially the same item. If the Government directs that contractor A's VECP be incorporated into Contractor B or C's contract, then Contractor A will receive a share of the net savings that are obtained from Contracts B or C (any contract affected by contractor A's VECP). Contractor A's instant contract total price will then be increased by that amount.

Acquisition savings can be shared in one of three ways. If the Government can predict with some degree of certainty the number of affected items to be procured within the share period (and this number is not classified), the "lump-sum" method of settlement can be used if the contractor and the contracting officer so agree. The contract modification incorporating the VECP will specify the anticipated future procurement quantity. The cost savings per unit are then multiplied by the anticipated share period quantity, and the instant contract price is increased by the contractor's share of that amount.

The primary way of sharing future savings is where the contractor receives a portion of the per-unit savings that occur either as contracts incorporating the VECP are awarded or as VECP-affected units are delivered. This sharing applies to items scheduled for delivery within the determined share period (as described in the FAR), which begins upon acceptance of the first item affected by the VECP. In the case of multi-year contracts, sharing applies only to quantities that (1) are fully funded at the time of VECP acceptance and (2) fall within the determined share period. It is the contractor's responsibility to maintain records from the time the first VECP-affected unit is accepted until the determined VECP share period ends. Whenever the Government issues a new contract during this share period for essentially the same item, and the contractor's VECP has been incorporated into the contract documents, the contractor is entitled to a portion of any per-unit savings occurring during the share period. Payment will be made via the instant contract when savings are realized. Normally, the savings per unit that were calculated for the original contract will be multiplied by the number of units scheduled for delivery prior to expiration of the share period. Also, in design or low rate initial production contracts, the Government may modify the usual VE clause to improve contractor incentives. If the clause is so modified, the sharing formula is expressed in terms of a specific quantity and not in time. This quantity is the number of units affected by the VECP that are scheduled to be delivered over a period of between 36 and 60 consecutive months (set at the discretion of the contracting officer for each VECP as described in the FAR) that span the highest planned production, based on planning and programming or production documentation existing at the time the VECP is accepted.

The third way of sharing savings with the contractor is the "no-cost modification" method. Under this method, the contractor keeps all savings from the instant contract and concurrent contracts. The Government keeps all savings from future contracts and concurrent contracts with other sources as well as all collateral savings. This method, if agreed upon by both the Government and the contractor, can minimize the administrative costs of determining and negotiating savings. It should be noted that if the "lump-sum" method or the "no-cost settlement" method cannot be mutually agreed upon, then the future per-unit-savings method will be used.

7.2 Collateral Savings

Collateral savings are those measurable net reductions in cost of operation, maintenance, logistics support, shipping, or Government-furnished equipment that result from an accepted VECP. In some situations, a VECP might increase the acquisition cost of an item but result in substantial collateral savings. For collateral savings, the contractor is entitled to 20 percent to 100 percent (determined by the contracting officer as described in the FAR) of the savings that the Government estimates will be realized during an average one-year period. However, the contractor's share shall not exceed $100,000 or the value of the instant contract, whichever is greater. The Government determines the amount of collateral savings. Some contractors have had several VECPs approved and implemented with substantial collateral savings. However, determining and verifying measurable net reductions can be difficult and, in some instances, the Government may exclude the collateral savings program.

7.3 Sharing Savings with Subcontractors

As discussed above, the prime contractor's allowable development and implementation costs shall include any subcontractor's allowable development and implementation costs and any VE incentive payments to a subcontractor that clearly result from a VECP accepted by the Government under this contract. The contractor may choose any arrangement for subcontractor VE incentive payments provided that the payments will not reduce the Government's share of concurrent or future contract savings or collateral savings.

Prime-to-subcontractor VE arrangements can be made by the prime contractor extending to the subcontractor any or all of the instant contract savings or a percentage of whatever amount the prime contractor receives as its share of concurrent contract share, collateral share, and future acquisition share. For example, a simple paragraph could be included in a subcontract that might provide a 50-percent share of whatever dollar amount the prime contractor receives in the four areas of sharing on a successful VECP.

The sharing between prime contractor and subcontractor can be a matter of negotiation between them and should provide motivation for the subcontractor to submit VECPs to the prime contractor. It should also provide a fair share to the prime contractor who is The sharing between prime contractor and subcontractor can be a matter of negotiation between them and should provide motivation for the subcontractor to submit VECPs to the prime contractor. It should also provide a fair share to the prime contractor who is responsible for putting a subcontractor's VECP into proper format and for "selling" it to the Government. Any development and implementation costs incurred by the subcontractor, and the share of instant contract savings extended to the subcontractor, are considered to be a part of the prime contractor's development and implementation costs.

Section 8. Contractor's Guide for Effective VE

The following questions can help the contractor determine some of the internal management attitudes and disciplines needed to have a viable, effective VE program:

1. Does the company establish VECP goals?
2. Do VECP goals flow down throughout the corporate structure?

3. Are contractor management personnel involved in VECP decisions and approve VE operating goals and budgets?
4. Do contractor management personnel consult with key Government personnel on the use of VECPs as a cost-reduction tool and gain Government agreement on the need to apply the VE methodology to the system being acquired?
5. How do contractor personnel benefit from contributions to approved VECPs? Are special awards or recognition given?
6. Do contract negotiators understand the FAR VE provisions?
7. Are VE sharing provisions in subcontracts company policy?
8. Does the company's accounting department identify VECP income separately so that: a) management personnel can recognize the monetary benefit of VE? b) Management can be kept informed of expenditures and receipts resulting from the VE effort?
9. Are resources assigned specifically for the development of VECPs? Does the company work to minimize the time to: a) Develop a VECP? b) Obtain internal approval prior to submission of a VECP to the Government?
10. Does the company conduct formal VE workshops to expand in-house capabilities?
11. Is there a VE training and indoctrination program? Is there coordination between Government Contract Administration and the company's marketing efforts with respect to VECPs?

APPENDIX A-Points of Contact

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APPENDIX B-Abbreviations

ACO	Administrative Contracting Officer
CCB	Configuration Control board
CDRL	Contractor Data Requirements List
CoP	Community of Practice
DoD	Department of Defense
ECP	Engineering Change Proposal
FAR	Federal Acquisition Regulation
IDA	Institute for Defense Analyses
O&S	Operations and Support
PCO	Procuring Contracting Officer
POC	Point of Contact
ROI	Return On Investment
VE	Value Engineering
VECP	Value Engineering Change Proposal
VEl	Value Engineering Incentive
VEPR	Value Engineering Program Requirement