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U.S. Army Corps of Engineer
Washington, D.C. 20314-1000

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28 February 2005

ARMY PROGRAMS
VALUE ENGINEERING

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ARMY PROGRAMS
VALUE ENGINEERING
(USACE)

1. Purpose. This regulation provides general policy, procedures, and a framework for the execution of the Value Engineering (VE) elements within the Project Management Business Process (PMBP) of the U.S. Army Corps of Engineers (USACE). Value Management (VM) shall be made by implementing the Value Management Plan (REF8023G) from the U.S. Army Corps of Engineers Business Process Manual.

2. Applicability. This regulation applies to all VE activities of the Corps of Engineers. The VE program applies to all procurement acquisitions that are Federally funded and managed by the Corps of Engineers including, but not limited to, Civil Works and Military construction projects, Environmental, Hazardous, Toxic and Radioactive Waste (HTRW) and Military Munitions Response Program (MMRP) projects, Support For Others (SFO), Formerly Used Defense Site (FUDS), Formerly Utilized Sites Remedial Action Program (FUSRAP) and any other Federal funded programs with a total project cost of $1 million or more ($2 million for construction projects (CCE)) regardless of the number of phases to accomplish the project.

3. Distribution Statement. Approved for public release, distribution is unlimited.

4. References. See Appendix A.

5. Definitions. See Appendix B.

6. General Requirements. VE is mandated by federal law and by Office of Management and Budget (OMB) policy as follows:

a. The Office of Federal Procurement Policy Act, as amended by Public Law 104-106, Section 4306, dated February 10, 1996, requires each executive agency to establish and maintain a Value Engineering program. Specifically Section 36, sub-paragraph (b) states the following:

"IN GENERAL - Each executive agency shall establish and maintain cost effective value engineering procedures and processes..."

b. Office of Management and Budget (OMB) Circular No. A-131, dated May 21, 1993 "... requires federal departments and agencies to use Value Engineering (VE) as a management tool ... to reduce program and acquisition costs..." The OMB Circular currently requires VE application on all federal projects/programs over $1,000,000 total costs. Office of Management & Budget has allowed this amount to be $2 million for Corps of Engineers construction projects/programs.

c. Public Law 99-662, Water Resources Development Act of 1986. Section 911, Review of Cost Effectiveness of Design, states the following:

"During the design of each water resources project which has a total cost of $10,000,000, which is authorized before, on, or after the date of enactment of this Act and undertaken by the Secretary, and on which construction has not been initiated by the date of enactment of this Act, the Secretary shall require a review of the cost effectiveness of such design . . ." The Conference Committee Report states that this review is known as Value Engineering.

d. While VE is required for programs/projects, its use to improve non-procurement items, such as internal business processes, is also encouraged.

e. For Environmental Laws, see Appendix A, references 15 and 16. The Project Delivery Team (PDT) shall include VE requirements in the Project Management Plan (PMP) for all environmental projects, such as HTRW, MMRP, and other environmental mitigation projects for Defense Environmental Restoration Program (DERP), Base Realignment and Closure (BRAC), SFO, FUSRAP with a total project cost of two million dollars or more, regardless of the number of phases to accomplish the work. The two million dollar threshold to perform VE studies for environmental projects shall be the estimated cost for the actual remediation and removal phase of the clean-up action for the operable unit. The performance of the Technical Project Planning (TPP) does not constitute completion of the VE requirement.

7. Procedural Requirements.

a. Planning and Scheduling. Project Management Plans (PMPs) shall contain a Value Management (VM) Plan (Ref. Appendices B and D). The PDT shall develop the VM Plan to ensure that VE activities are properly scheduled and resourced (Ref. Appendix D). VE activities (start and completion of VE study, presentation, and implementation response) should also be included in the Network Analysis System (NAS) in the Project Management Automated Information Systems (PM-AIS) (e.g., P2, etc.) as a critical milestone at the district level. Full achievement of the VE task(s) includes documenting the disposition of all study proposals.

b. VE Study Requirements. All projects, programs and procurements greater than $1 million ($2 million for construction and environmental) shall have an appropriate VE study(ies) (Ref. Appendix D) or approved waiver as indicated in the following paragraphs.

(1) Civil Works Construction or Civil Works Operation and Maintenance. VE studies shall not be waived for any project over $10,000,000 construction costs. The Corps of Engineers Major Subordinate Command (MSC) and Engineering Center Commanders may waive a VE study on projects less than $10,000,000 if sufficient justification is provided. For example, waivers are occasionally granted for repetitive type projects for which a VE study was previously conducted, and where previous recommendations have been implemented into those designs. Waivers are not required for projects less than $1 million ($2 million for construction and environmental). Requests for waivers from conducting a study shall be staffed by the Project Manager (PM) over the signature of the Field Operating Activity (FOA) (District) Commander.

It is recommended that the PM discuss the pending VE waiver request with MSC Value Engineering representative prior to submission to the MSC for approval in order to streamline the process.

(2) Defense (Army, Navy, Air Force, etc.). VE studies may be waived for similar justification indicated in paragraph 6.b. (1). District requests for waivers will be through the Major Subordinate Command (MSC). Only the office that issues the Release Code to the Corps (normally the Programming/Budgeting Office for the project) may waive a Value Engineering Study. For Military Construction Army (MCA), this authority rests with Assistant Chief of Staff Installation Management (ACSIM); Military Construction Army Reserve (MCAR), ACSIM-AR; for Military Construction Air Force (MCAF), Major Air Force Command (MAJCOM); for Military Construction Air Force Reserve (MAFR), Headquarters Air Force Reserve Command (HQ AFRC); and for Department of Defense (DoD) projects authority rests with the DoD Programming/Budgeting Office, i.e., United States Special Operations Command (USSOCOM), Defense Finance and Accounting Service (DFAS), Defense Logistic Agency (DLA), etc. The $2 million threshold for performing Value Engineering studies refers to the Current Working Estimate (CWE). The $10 million threshold for performing mandatory VE studies also refers to the CWE.

(3) USACE Construction or services for other Federal Agencies. In cases where the Corps is performing the design and/or construction for other federal agencies, federally mandated VE requirements still apply (all procurements, including construction, greater than $1 million). The authority to waive the VE study lies with the funding agency. The Corps will perform VE studies unless the other federal agencies specifically request a wavier. The Corps' PM is responsible to ensure that appropriate written documentation from the other agency is contained in the project file where the funding agency waives (or has already performed) required VE studies. The Corps' PM shall verify that the individual with authority to make decisions on behalf of their programs has approved the waiver request. Once the Corps' PM receives written wavier documentation from another Federal Agency, the request should be sent to the MSC for approval. It is the responsibility of USACE to assure adherence to public law and administrative policy unless declined by other federal agencies. If any Corps program funds are utilized, the subject Corps VE regulation shall apply.

(4) USACE Construction or Other Services for Non-Federal Agencies. Design and/or construction activities that are totally funded from non-Federal agencies are exempt from VE requirements. Execution of VE studies should, however, be encouraged when appropriate.

(5) HTRW/MMRP Projects: The Program Management Plan (PMP) shall include a VM-plan. The Program Manager (PM) for the project shall ensure that the VE requirements are adequately resourced (including funding) as part of the project budget and properly scheduled. The USACE District or Engineering Center VE Officer or his/her designated representative shall be an integral member of the PDT. The VM Plan shall be the product of the PDT and shall have the PM's concurrence. The Performance of the Technical Project Planning (TPP) does not constitute the completion of the VE requirements.

(6) HTRW/MMRP Waivers: When executing reimbursable environmental projects, which utilize federal funds other then Army, the authority to waive VE lies with the customer. The USACE should budget and then encourage performance of the VE study as part of the business process to the customer. The PM is responsible to ensure that appropriate documentation is contained in the project file where the customer either performs or waives the VE studies to comply with the federally mandated VE requirements. For FUSRAP projects, the authority to waive VE requirements will be the Assistant Secretary of the Army for Civil Works; for FUDS, the Deputy Assistant Secretary of the Army for Environment, Safety and Occupational Health.

c. Rejection of VE proposals. The rejection of any individual VE proposal or group of proposals, on a single project feature that may potentially save over $1,000,000, requires the signed concurrence of the MSC and Engineering Center Commanders. Decisions to reject such major proposals should include independent technical review, as appropriate.

d. VE Certification.

(1) Civil Works Decision documents. All feasibility reports, post authorization change reports, general reevaluation reports, reauthorization letter reports and the equivalent will contain a review and approval statement from the PM indicating that required VE action has been completed, as appropriate, for that phase of the project. This statement will indicate that appropriate studies have been performed and that all proposals indicating savings greater than $1,000,000, impacting plan formulation, have been resolved.

(2) A statement that appropriate VE actions have been completed should accompany the Biddibility, Constructibility, Operability and Environmental (BCOE) document for all procurement actions with CWE over $1,000,000 ($2,000,000 for construction and environmental). The statement shall read:

"I, (the PM), certify that this procurement action has completed the Value Engineering process. A VE study was (completed/waived) on (date). All VE proposals indicating potential savings over $1,000,000 have been resolved with approval of the MSC and Engineering Center Commander."

e. Contract Clauses. The Value Engineering Change Proposal (VECP) clauses shall be included in contracts as prescribed by FAR PARTS 48 and 52. The District and Engineering Center VE Officer should ensure that appropriate procedures are in place for review, approval, and contractor notification for VECPs.

f. Plans, Reporting, Records, and Metrics

(1) MSCs and Engineering Centers should have an Annual Plan in place for Value Engineering activities by 30 Nov for associated fiscal year (FY). MSCs and Engineering Centers should submit their plan directly to HQUSACE. Appendix F to this regulation provides guidance for the Divisions in developing the annual plan.

(2) Quarterly Reports. The MSCs and Engineering Centers will report to HQUSACE.

within 7 calendar days of the end of the quarter. Reports are to be electronically transmitted in standard format as directed by HQUSACE.

(3) Records. Each District and Engineering Center VE Officer will maintain a copy of all VE reports, waivers, the expected and claimed savings, and all unresolved proposals in the project's file.

(4) Performance Metrics. Reports will contain descriptions of performance measured against metrics as defined in Appendix E.

8. VE Workshops or Studies. VE workshops or studies shall follow the general VE Job Plan format as prescribed by ASTM and SAVE International standards – the 5 step process (Information, Speculation, Analysis, Development and Presentation Phases). Studies shall include and document legitimate functional analysis methodology (FAST diagrams) and generation of alternatives and not be simply project review sessions. VE study team members should be independent of the project design team so as to encourage the maximum interface and development and acceptance of proposals.

9. Staffing.

a. Organization. The VE organization consists of the HQUSACE VE Officer, MSC and Engineering Center VE Officers, Value Engineering Advisory Committee (VEAC), District VE Officers, the Office of the Chief of Engineers Value Engineering Study Team (OVEST)-Center of Expertise for VE, PDT members, customer, contractors and multi-district personnel. The organization may also include district-level VE Committees as described below.

b. District and Engineering Center VE Officer. The District and Engineering Center VE Officer is the primary agent responsible for execution of the VE program. A person at each District or Engineering Center will be assigned VE as a primary duty. Commanders will ensure the position is located within the organization and provide sufficient visibility and resources to ensure proper VE execution.

10. Roles and Responsibilities.

a. Project Manager. PMs will include the VE Officer or his designated representative as an integral member of the PDT. The project manager will:

(1) Assure the PDT develops a VM Plan for the project.

(2) Ensure that a waiver request, containing a written justification for non-performance of a VE study is prepared for forwarding to the MSC or Engineering Center Commander.

(3) Ensure schedules are developed and adequate funds are budgeted for all VE activities, including proposal review by District and Engineering Centers, partners and customers.

(4) Ensure implementation of accepted VE study proposals.

(5) Ensure the rationale for not accepting proposals is valid and documented.

(6) Ensure a request for approval for non-implementation of all VE proposals, and/or group of proposals, with potential savings over $1,000,000, is made to the MSC or Engineering Center Commander.

b. District or Engineering Center VE Officer. The District or Engineering Center VE Officer (or his/her selected representative), will act as VE advisor on the PDT and as professional subject matter advisor to the PM and District and Engineering Center Commander. District and Engineering Center VE Officers duties include but are not limited to:

(1) Participate on PDTs to assist in developing the appropriate number and content of VM plans and VE studies, the scheduling and appropriate resources (OVEST, in-house or A-E contract) and funding for the VE stud(ies).

(2) Execute duties as the technical expert on the PDT to assure that VM plans and VE studies are accomplished in accordance with established guidance and procedures.

(3) Track and record all district VE costs and savings for reporting in the VE channels.

(4) Coordinate with the MSC and Engineering Center. Produce and forward the district's/center annual plan and quarterly reports to the MSC/HQUSACE. Report to the MSC/HQUSACE office the status of all rejected VE proposals with potential savings over $1,000,000.

(5) Provide necessary programmatic VE status reports including auditable savings/avoidance for reporting to the Office of Management and Budget (OMB).

(6) Ensure that VE cost savings and avoidances are considered for use on Sustainable Design project additions. These saving shall be supported by life cycle saving analysis performed in accordance with established procedures.

(7) Ensure procedures established for VECP review, approval, and contractor notification.

(8) Help assure/maintain/enhance Corps credibility, and cost effectiveness.

(9) Ensure studies and workshop reports are compiled in electronic format, and incorporated into appropriate VE lessons learned database. Districts submit to MSC.

(10) Ensure credible VE studies earlier in the project cycle.

(11) Ensure seamless VE in accordance with PMBP intent.

c. MSC or Engineering Center VE Officer. The MSC or Engineering Center VE Officer is responsible for implementation of VE within the region. The MSC and Engineering Center

VE Officer will make staff visits as appropriate. The MSC and Engineering Center VE Officer will report quarterly to HQUSACE. The MSC and Engineering Center VE Officer will be, or as designated, a member of the VEAC and shall actively partake in its activities. The MSC and Engineering Center VE Officer will schedule an annual MSC VE Conference. The MSC and Engineering VE Officer will support the HQUSACE VE Officer as required or requested.

d. HQUSACE VE Officer. The HQUSACE VE Officer and/or representative will make staff visits to MSC and Engineering Center Offices. The HQUSACE VE Officer will report quarterly on VE to HQ directorates. The HQUSACE VE Officer shall provide appropriate reports for Army, the DoD, and the OMB. The HQUSACE VE Officer will obtain funding to support assigned VE Engineering Center and VEAC and to support special missions efforts as required.

e. Value Engineering Advisory Committee (VEAC). The VEAC comprises the HQ VE Officer, MSC and Engineering Center VE Officers, and/or their selected representatives, and an OVEST representative. The committee advises the HQ VE Officer on matters of importance from their District/Center and MSC offices.

f. Office of the Chief of Engineers Value Engineering Study Team (OVEST). A Full time VE Study Team formed by HQUSACE operating throughout the Corps and other Federal Agencies to produce and facilitate VE studies and related VE products on a reimbursable basis. OVEST is the Engineering Center of Expertise for VE in the Corps of Engineers. As Value Engineering Center of Expertise, assists HQUSACE and VEAC in administration of the VE program.

11. Training. VE Officers should provide annual recommendations to their organizations on VE training needs and encourage that these needs are incorporated in the Individual Development Plans (IDP).

a. VE Officer. At a minimum, the District, Engineering Centers and MSC VE Officers must complete (or have previously completed) VE Module 1 training within one year of appointment. Within three years of appointment, the District and Engineering Center Officer will complete the VE Module 2 training and become certified within the VE profession, i.e., Certified Value Specialist (CVS), Associate Value Specialist (AVS) or Value Methodology Practitioner (VMP). Further certifications such as Professional Engineer (P.E.), Registered Architect (R.A.), Professional Geologist (P.G.) and Project Management Professional (P.M.P.) are highly recommended.

b. Other Staff. VE Officers should encourage attendance at VE training workshops, seminars, etc., and monitor the number of personnel that attend. Corps Managers and Technical staff (branch and section chiefs of PM and Engineering Division PMs) should attend a VM and VE seminar, or preferably, a VE Module I workshop during the first 2 years of their appointment and at least every 5 years thereafter. The VE Officers should implement the training of Corps Managers, Team Leaders and Technical staff on the VM process and procedures.

c. VE mentors. The District VE Officers shall mentor new VEO of other Districts. During this period, the VEO shall introduce the functions of how to conduct a VE study, prepare a VE report and presentation and the overall process of the VE program.

d. New VE District Officers. The MSCs and Engineering Centers shall include, in the annual plan, a program to support and mentor new District VE officers that do not have formal background or experience in VE. The program shall consist of mentoring the new VE officer on conducting studies, attending studies and actively assisting in the management of the new VE officer's program. Assistance from other District VE Officers is required. This development program of new District VE officers shall be intensely managed for a minimum of one year.

12. Quality Assurance (QA). The District and Engineering Center VE Officer and the PDT will verify that a VE study report has been completed for every project studied, in approved format, and accurate in its presentation. VE study proposals should be considered as a matter of official record at the time of the VE study presentation. Proposals should be subsequently addressed as appropriate. The presentation, consideration and implementation of proposals are considered part of the QA.

VE study reports prepared by AE contractors will be reviewed by the District and Engineering Center VE Officer for completeness, content, and accuracy. The District and Engineering Center VE Officer will verify that study teams are appropriately staffed (VE Officer should verify that the team members are qualified by reviewing and approving the team member resumes prior to the actual study being conducted) and studies show appropriate level of effort. The MSC and Engineering Center VE Officer may take part in or audit VE studies in each District and is responsible for ensuring the quality of the VE process. Required reports and files should also be verified for accuracy and content.

13. VE Lessons Learned Tool. Personnel should use the appropriate lessons learned system or portal to keep up to date with the latest VE standards, store examples of well-developed studies, and exchange study templates. MSC and Engineering Centers should also use the VE Portal to collect district input for MSC/Centers Quarterly Report as well as for posting the consolidated report.

14. Selection of the District VE Officer and OVEST members. In the event that a selection of new District VE Officer or an OVEST member is to be made, a Division Value Engineering Officer or the HQ VE Officer should be on the selection committee as a voting member to provide input as to the best-suited individual for that position.

FOR THE COMMANDER:

6 Appendices
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JOHN R. McMAHON
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Chief of Staff