DEPARTMENT OF THE ARMY
U.S. Army Corps of Engineers
Washington, DC 20314-1000

ER 11-1-321
Change 1

CECW-CE

Regulation
No. 11-1-321

01 January 2011

Army Programs
VALUE ENGINEERING

1. This Change 1 to ER 11-1-321, 28 February 2005,

a. Corrects VE study applicability for total project cost from $2M to $1M, Paragraph 2.

b. Changes Paragraph 5. Definitions. Glossary inserted in Appendices replaces Appendix B.

c. Changes General Requirements to Authorities, Paragraph 6.

d. Changes Procedural Requirements to Guidance Structure, Paragraph 7.

e. Changes VE Workshops or Studies to Waivers, Paragraph 8.

e. Changes Staffing to Value Methodology (Standard), Paragraph 9.

f. Changes Roles and Responsibilities to Staffing, Paragraph 10.

g. Changes Training to Performance Measurement, Paragraph 11.

h. Changes Quality Assurance to VE Certification, Paragraph 12.

i. Changes VE Lessons Learned Tool to Point of Contact, Paragraph 13.

j. Deletes Selection of District VE Officer and OVEST Members, Paragraph 14.

k. Changed Appendix A. References.

l. Changed Appendix B. Definitions to Appendix B VE COP Strategic Plan Overview.

m. Changed Appendix C Sample Content of VE Plan and Work Breakdown Structure to Appendix C Scheduling Requirements for VE Studies.

n. Changed Appendix D Scheduling for VE Studies to Glossary.

o. Deleted Appendix E. Metrics. Refer to Annual Execution Guidance, EC or Letter from Commander.

p. Deleted Appendix F Sample Annual Guidance Plan, Value Engineering Program, North Atlantic Division, USACE. Refer to VE Manual of Practice.

2. Substitue the attached as shown below:

Paragraph	Removed	Inserted
	Table of Contents	Table of Contents
2	Applicability	Applicability
5	Definitions	Definitions
6	General Requirements	Authorities
7	Procedural Requirements	Guidance Structure
8	VE Workshops or Studies	Waivers
9	Staffing	Value Methodology (Standard)
10	Roles and Responsibilities	Staffing
11	Training	Performance Measurement
12	Quality Assurance	VE Certification
13	VE Lessons Learned Tool	Point of Contract
14	Selection of the District VE Officer and OVEST Members	
Appendix		
A	References	References
B	Appendix B	VE COP Strategic Plan Overview
C	Appendix C	Scheduling Rqmts for VE Study
D	Appendix D	Glossary
E	Metrics	
F	Sample Annual Guidance Plan	

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

FOR THE COMMANDER:

DIONYSIOS ANNINOS
Colonel, Corps of Engineers
Chief of Staff

DEPARTMENT OF THE ARMY
U.S. Army Corps of Engineer
Washington, D.C. 20314-1000

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Army Programs
VALUE ENGINEERING

Supplementation to this regulation is prohibited except upon proponent's approval, USACE Commanders will submit their request for approval to HQUSACE (CECW-CE), Washington, DC 20314-1000, through chain of command channels.

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, managed, and/or executed 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 regardless of the number of phases/contracts to accomplish the project.

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

4. References. See Appendix A.

5. Definitions. See Glossary.

6. Authorities.

a. Under General Order 2002-03, The Chief of Engineers (COE) has Army Staff responsibilities for the formulation, implementation, management, and evaluation of engineering, construction, real property, and technical policy for the Army Staff and is responsible for establishing and maintaining a viable Value Engineering program per Public Law 104-106.

b. The Chief of Engineers (COE) and Commander, US Army Corps of Engineers is required, under OMB Circular A-131, to designate a qualified Agency "Senior Management Official Responsible for Value Engineering". This designation is assigned to the Chief, Office of the Value Engineer (OVE), HQ, U.S. Army Corps of Engineers for COE assigned mission areas to ensure compliance with applicable Public Laws and OMB directives.

c. 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 cost.

d. 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 shall require a review of the cost effectiveness of such design…" The Conference Committee Report states that this review is known as Value Engineering.

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

7. Guidance Structure. This ER is one of four volumes supporting the VM/E Community of Practice. These four volumes comprise the policy and procedures for the execution of the VM/E program. Reference Appendix B, VE COP Strategic Plan Overview. These volumes are separated by function as follows:

a. ER 11-1-321, Army Programs- Value Engineering: Defines the policy for implementation of the Value Management/Engineering Program in response to Public Law, OMB Cir. A-131, and DoD requirements.

b. VM/E Community of Practice (COP) Program Management Plan (PgMP): This PgMP defines the structure for the organizational management and professional development of the COP.

c. Annual VM/E Execution Guidance: This document provides the initial goals for program execution, adjustments in policies/criteria, and specific actions required throughout the fiscal year.

d. Value Engineering Officer (VEO) Manual of Practice: This manual provides guidance for the VEO operating activities in executing the VM/E program.

8. Waiver(s). All projects, programs and procurements greater than $1 million shall have an appropriate VE study(ies) (Ref. Appendix D) or an approved waiver. OMB Circular A-131, 8.a(4) designates the "Senior Management Official Responsible for VE" as the Agency's waiver authority, in which, "on a case-by-case basis, may waive the requirement to conduct value engineering studies".

a. Waivers shall be kept to a minimum and requested only in unusual cases. Waiver request must be made at the very beginning of design action in order to be considered. Requests must contain comprehensive justification.

(1) *For Projects/Contracts >$1 Million, but <$10 Million*; Waiver Authority for this action is delegated by the Chief, OVE, HQUSACE to the MSC VE Program Manager's (VEPgM), who recommends disposition to the MSC/ Engineering Center Commander, for signature.

(2) *For Projects/Contracts >$10 Million*; Civil Works projects/contracts are NOT subject to waiver per PL 99-662 (33 U.S.C. § 2288); For Military Programs and others, waiver authority is the Chief, OVE, HQUSACE.

b. *Authority to Reject VE Proposals*. The rejection of any individual VE proposal, group of proposals, or VECP, that may potentially save over $1 Million according to the Value Engineering Study Report or the proposing contractor, requires the signed concurrence of the MSC / Engineering Center Commander and will be sent to the HQUSACE, Chief, OVE, for program reporting.

9. Value Methodology (Standard). VM/E studies shall, at a minimum, follow the six-step Job Plan as prescribed by ASTM and SAVE International standards; Information, Function Analysis, Creativity, Evaluation, Development, and Presentation. Studies shall include and document legitimate function analysis methodology (e.g. FAST diagrams) and generation of alternatives and not be simply project review sessions. The value methodology is commonly applied under the names Value Analysis (VA), Value Engineering (VE), and Value Management (VM). These terms can be used interchangeably. Other value improvement processes also qualify as value studies as long as they adhere to the Value Standard's Job Plan and perform Function Analysis as part of their total process. The US Army Corps of Engineers adheres to the SAVE International Value Standard, 2007 (or latest, http://www.value-eng.org/pdf_docs/monographs/vmstd.pdf).

a. *Value Standard.* Establishes the specific six-phase sequential Job Plan process and outlines the objectives of each of those phases. It does not standardize the specific activities that are used to accomplish each phase. It requires the workshop to be lead by a qualified VE Professional (i.e., CVS). USACE Policy allows an AVS to lead VE Studies but limited to the >$1 Million, but <$10 Million range, to gain experience towards full certification as a VE Technical Specialist.

b. *Value Study/Workshop.*The overarching objective of a value study is to improve the value of the project. The following are parameters to be used for preparation/planning of a VE study:

(1) Study Duration. Study duration of 3 to 5 days, dependent upon the complexity. This Study time is directly related to the Workshop, excluding Pre and Post workshop time (See Value Standard link above).

(2) Study Funding. Studies funded at an average of $65K plus, dependent upon the complexity. This funding includes direct project related costs for support office labor (ie, contracting for required CVS Team Leader), VEO direct project work (Setup/Logistics, QC, etc.), and Team Travel/Labor. VE Office budget is largely overhead funded, whereas VE studies are directly funded by individual project funds.

(3) Study Scheduling. Schedule studies as early in the process as possible (~35% Design or sooner). Civil project studies are required during alternative development and again during the Design Phase.

(4) Study Disposition. VE Cost Savings/ Cost Avoidance (CS/CA) may be claimed concurrently with construction placement of Project/Contract or separable element thereof; for a total of six years, but must be re-validated at the execution of each procurement action. (i.e., Projects or Program studies that include multiple contracts; CW—Dredging, MP—Standard Designs). This does not negate the requirement for individual project/contract VE studies, which provide a more detailed study of selected alternative(s), specifically in Paragraph 5c above. Project or Program study reports will be valid for no more than six years; if not awarded within this time, a new VE study is required.

10. Staffing. The VM/E organization consists of the HQUSACE Chief, Office of the Value Engineer, Value Engineering Advisory Committee (VEAC), MSC VE Program Managers (VE PgMs), and District/Engineering Center VE Officers (VEO).

a. *HQUSACE, Chief, Office of the Value Engineer (OVE)*, is the Chief of Engineers, Senior Management Official for Value Engineering, and has sole responsibility for insuring program meets the intent of statutory and regulatory requirements.

b. *Value Engineering Advisory Council (VEAC)*. The VEAC is the MSC VE advisory council for the HQ, Chief, OVE, and is comprised of the appointed MSC VE PgM from each Division/Center, and other selected representatives.

c. *MSC VE PgM*. Each MSC will select one (1) qualified, full-time staff (VE PgM) at each MSC to manage the Regional VE Program. At a minimum, within the first year of duty, the MSC VE PgM is required to attend the VE Mod-I training, and attain the Associate Value Specialist (AVS) certification by SAVE International.

d. *District/Engineering Center VEOs*. A minimum of one (1) qualified, full-time staff (VEO) for each District/Engineering Center will be selected/ appointed as the VEO to perform coordinating and operating activities. At a minimum, within the first year of duty, the VEO is required to attend the VE Mod-I training, and attain certification as an Associate Value Specialist (AVS) by SAVE International; with the ultimate goal of obtaining the Certified Value Specialist (CVS) certification within four (4) years of assignment as VEO. Intent is that all VEO's will strive to be Technical Specialists in Value Engineering. The VEO shall serve as a "Special Assistant to the Commander" for VM/E program execution and is considered a critical part of the Commander's District Staff.

11. Performance Measurement. Compliance with the above VE Standard requires the following to be actively performed and reported:

a. *Compliance.*

(1) It is critical that Project Managers adhere to the PMBP requirements for scheduling, funding, and reporting of major project & VE milestones (i.e., PMBP Manual, 8023G). The PDT shall develop the VM Plan to ensure that VE activities are properly scheduled and resourced (Ref. Appendix C).

(2) Accurate and complete project P2 data is critical in order to measure compliance with statutory requirements.

(3) District VEOs must adhere to the Value Standard, and perform Quality Control over all studies executed within their AOR.

(4) MSC /Engineering Center VEPgM's must ensure compliance with statutory and regulatory requirements, and perform Quality Assurance checks on studies within their AOR.

(5) KOs must ensure that compliance with VE statutory and regulatory requirements have been met prior to advertising or awarding any project/contract.

b. *Performance*.

(1) Department of Defense (DOD) VE Goals and Metrics are issued through the Annual VE Execution Guidance (i.e. ECB 2010-01) or other HQ issued policy document.

(2) Critical Milestone Performance is reported quarterly at the Directorate Management Review (DMR) and Command Management Reviews (CMR).

(3) Annual USACE VE Performance is distributed to MSC / Engineering Center Commanders by the COE by the end of the first quarter, in the following FY.

(4) Annual VE Report Cards are forwarded from the COE to OMB and OSD by the end of the first quarter, in the following FY. Civil works report card is forwarded to the ASA(CW) for submittal to OMB by the end of the first quarter, in the following FY.

(5) Internal Review (or others officially designated this responsibility), shall perform regularly scheduled program/project audits periodically throughout the FY to insure compliance with statutory and regulatory requirements or as requested/needed by the HQUSACE, Chief, OVE.

12. VE Certification. In order to ensure compliance with applicable statutory requirements this regulation requires that each project/contract, prior to award contain the PM certification as follows:

a. *Civil Works Decision Documents.* All feasibility reports, post authorization change reports, general reevaluation reports, reauthorization letter reports and the equivalent shall contain a review and approval statement (see 10b.statement below) 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 Million, impacting plan formulation, have been resolved.

b. *Biddibility, Constructibility, Operability and Environmental (BCOE).* The statement that appropriate VE actions have been completed shall accompany the BCOE document for ALL procurement actions with a CWE over $1 Million. The statement shall read:

*"I, **(the PM**), certify that this procurement action has completed the Value Engineering process as required by ER 11-1-321, Army Programs Value Engineering. Specifically, I certify compliance with Public Law 99-662 (33 USC 2288) and OMB Circular A-131. A VE study was **(completed/waived)** on **(date)** by the appropriate authority. All VE proposals indicating potential savings over $1,000,000 have been resolved with approval of the MSC/ Engineering Center Commander."*

Signature--PM
Signature--VEO Concurrence

NOTE: If requirement is waived, a copy of the APPROVED Waiver by the appropriate authority, and signed by MSC Commander, will be attached to the PM Certification above.

c. *Ready to Advertise (RTA) Validation.* KO shall validate that this certification is present and accurate prior to advertising or awarding the project. **Compliance with Public Law is critical.**

13. Point of Contact. If you have any questions or need additional information please contact your District Value Engineering Officer or Mr. Jeffery T. Hooghouse, HQUSACE, Chief, Office of the Value Engineer at 202-761-5533.

FOR THE COMMANDER:

4 Appendices
(See Table of Contents)

DIONYSIOS ANNINOS
Colonel, Corps of Engineers
Chief of Staff

APPENDIX A

References

A-1. Office of Federal Procurement Policy Act, as amended February 10, 1996 by Public Law 104-106.

A-2. Office of Management and Budget (OMB) Circular No. A-131, dated May 21, 1993.

A-3. Public Law 99-662, Water Resources Development Act of 1986. Section 911.

A-4. FAR PART 48, Federal Acquisition Regulations.

A-5. FAR PART 52, Federal Acquisition Regulations.

A-6. AR 5-4 Department of the Army Productivity Improvement Program.

A-7. ER 5-1-11, US Army Corps of Engineers Business Process.

A-8. ER 11-1-321, Army Programs- Value Engineering

A-9. ER 37-2-10, Accounting and Reporting - Civil Works Activities.

A-10. ER 37-345-10, Accounting and Reporting – Military Activities.

A-11. ER 1110-2-1150, Engineering and Design for Civil Works Projects.

A-12. ASTM E 1699-95, Standard Practice for Performing Value Analysis (VA) of Buildings and Building Systems.

A-13. ASTM E 2013-99, Standard Practice for Constructing FAST Diagrams and Performing Functional Analysis During Value Analysis Study

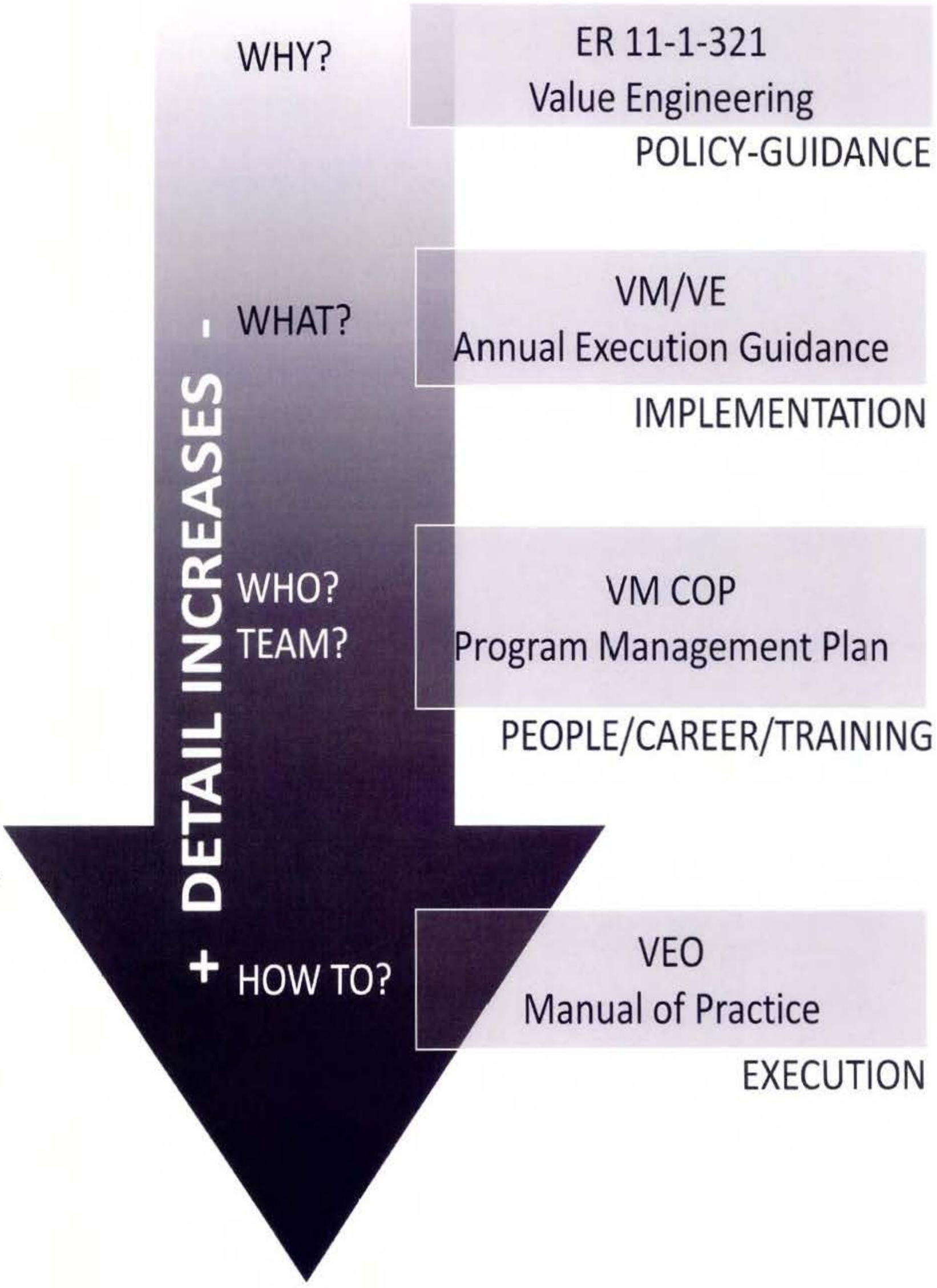
A-14. ER 1110-345-100, Design Policy for Military Construction

A-15. EP 11-1-4, Value Engineering: A Profitable Partnership

A-16. U.S. Code Title 10, Armed Forces, Subtitle A, General Military Law, Part IV, Service, Supply, And Procurement, Chapter 160, Environmental Restoration

A-17. U.S. Code Title 42, The Public Health And Welfare, Chapter 103, Comprehensive Environmental Response, Compensation, and Liability, Subchapter I,

A-18. PMBP REF8023G, Value Management Plan, A reference guide to the PMBP workbook.


WHY?
ER 11-1-321
Value Engineering
POLICY-GUIDANCE
WHAT?
VM/VE
Annual Execution Guidance
IMPLEMENTATION
WHO?
TEAM?
VM COP
Program Management Plan
PEOPLE/CAREER/TRAINING
+ HOW TO?
VEO
Manual of Practice
EXECUTION
DETAIL INCREASES

APPENDIX C

Scheduling Requirements for VE Studies

1. Value Management Plan. A VMP will be developed as part of the PMP in accordance with the USACE PMBP Manual (Ref: 8023G). VM/E shall be initiated early in the program and project development process and used as an integral part of project planning and design development.

2. Civil Works Program.

a. Construction programs or projects with potential Total Cost equal to or exceeding $10 million. Value Engineering study(ies) shall be performed in both planning (feasibility) and design phases of project development as follows:

(1) Pre-authorized (Feasibility Phase). At least one VE study oriented toward planning level issues shall be performed during the feasibility phase of the project, as part of the plan formulation process prior to the selection of final alternatives. This is preferably done during the latter part of "Identification of Measures" and the early part of "Formulation of Alternative Plans".

(2) Authorized (Design/Construction Phase). A VE study shall be performed on all authorized projects, project phases, or project features no later than at the 35% completion of the design (usually early in the Design Report or equivalent activity) and shall be in addition to any feasibility phase VE study noted above. In accordance with federal law (WRDA86), each water resources project with total cost in excess of $10 million requires a review of the cost effectiveness of the project design to insure the project is designed in the most cost effective way for the life of the project. Therefore, under no circumstances, shall a contract for a water resources project over $10 million be awarded prior to completion (including complete disposition of proposals) of a formal VE study of the project design.

b. Construction programs or projects with Total Authorized Cost equal to or exceeding $1 million but less than $10 million require a VE study to be conducted no later than 35% design completion; additionally, earlier VE studies should also be considered.

c. Post-Authorization Changes (PACs). For all PACs (e.g., LRRs, GRRs, PACRs) a VE study shall be performed during the PAC report development.

d. Operation and Maintenance Projects and Programs and All Other Procurements.

(1) Projects or Procurements Exceeding $10 Million. A VE study shall be performed on all projects or procurements exceeding $10 million as described above.

(2) Projects or Procurements Exceeding $1 million up to $10 million. A VE study shall be performed on all projects and procurements in this cost range as described above. While it is fully realized that it may be impractical to study the vast number of District O&M projects/programs in this range, managers should consider utilizing VE studies on a combination of projects and/or program applications.

3. Military Construction. A VM/E study shall be performed on all projects/programs with a Programmed Amount (PA), CWE or program amount greater than $1 million, including Centers of Standardization Programs and Projects, and regardless of acquisition strategy.

4. Other Projects/Programs/Procurements. A Value Management Plan will be developed. A VM/E study shall be performed for any product, service, or procurement greater than $1 million. VM/E should be performed early in the planning/design/acquisition process.

a. When USACE is the executing agency responsible for design and/or procurement of projects with an estimated construction cost greater than or equal to $1 million, a minimum of one VM/E study shall be performed early in the project/program development process.

b. When USACE is the executing agency responsible for project construction, VM/E shall be implemented in accordance with FAR part 48 and 52.

GLOSSARY

Abbreviations and Terms
(Replaces Appendix B of ER 11-1-321)

A-E. Architect-Engineering firm.

AVS. Associate Value Specialist. A mid-level of certification for practicing Value specialists.

BCOE. Biddibility, Constructibility, Operability and Environmental Review. Required to be performed and certified before a construction contract can be advertised.

Customer. The owner, client, user, or other similar beneficiary of a product having a vested interest in the product. Customers may be multiple entities with conflicting priorities and values.

CVS. Certified Value Specialist. The highest level of certification for practicing Value specialists.

Contributed Funds. These funds are non-federal funds that are used to support the requirements of the PCA.

CCE. Current Construction Estimate. The total cost for construction of a particular project, including the escalation. The CCE is usually compared to the contractor's bid proposal.

CWE. Current Working Estimate. The total cost of a particular project including the construction and design contingencies and the Army Corps of Engineers construction administration fee (SIOH). The CWE is usually compared to the initial programming amount (PA).

Decision Documents. A decision document is any report prepared for the purpose of obtaining project/program authorization or modification, commitment of federal funds for project implementation, and approval to spend/receive funds as a result of entering into agreements with other agencies or organizations including those to obtain congressional authorization.

Engineering Center. Designated USACE activity with specific engineering and/or research/development or training function (Huntsville). The Engineering Center supports very specialized missions that require unique technical expertise in programs that are generally national or very broad in scope.

Executing Agency. In the context of those Agencies which perform "work for others", inside and outside of DOD, the "Executing Agency" is responsible for statutory and regulatory compliance with respect to VE. The "Executing Agency" carries waiver authority, not the "Funding Agency".

FMS. Foreign Military Sales.

FOA. Field Operating Activity. i.e. Corps of Engineers District Office.

FUDS. Formerly Used Defense Site.

FUSRAP. Formerly Utilized Sites Remedial Action Program.

HQUSACE. Headquarters United States Army Corps of Engineers.

HTRW. Hazardous, Toxic and Radioactive Waste.

ITR. Independent Technical Review. A technical review by a qualified person or team, not affiliated with the development of a project, for the purpose of confirming the proper application of clearly established criteria, regulations, laws, codes, principles, and professional procedures.

MSC. Major Subordinate Command, Example: U.S. Army Corps of Engineers Division.

MMRP. Military Munitions Response Program: A program category of the Defense Environmental Restoration Program for response actions to address military munitions and explosives of concern and munitions constituents.

Operable Unit. A discreet action that comprises an incremental step toward comprehensively addressing site problems. This discreet portion of a remedial response manages migration and/or eliminates or mitigates a release or pathway of exposure. The cleanup of a site, i.e., an installation or property, can be divided into a number of operable units, depending on the complexity of the problems associated with the site.

P2. P2 is the Automated Information System (AIS) that supports the doctrine of ER 5-1-11 and enables compliance with the PMBP Business Process Manual, and the culture of a learning organization.

PDT. Project Delivery Team. An interdisciplinary group formed to develop a product.

PMBP. Project Management Business Process. A fundamental subset of the USACE business process used to deliver quality projects. It reflects the USACE corporate commitment to provide "customer service" that is inclusive, seamless; flexible, effective, and efficient. It embodies communication, leadership, systematic and coordinated management, teamwork, partnering, effective balancing of competing demands, and primary accountability for the life cycle of a project. For more information please visit the USACE PMBP portal at https://pmbp.usace.army.mill

Quality. Characteristic of a project that meets or exceeds customer needs; adheres to all applicable technical and policy requirements; is on schedule and within budget; and meets the Value Standard..

QA. Quality Assurance. The process of oversight and verification of the quality control processes to ensure their effectiveness in the production of quality products that meet the Value Standard. Function of the MSC VE PgM.

QC. Quality Control. The process employed to ensure the performance of a task meets or exceeds the agreed-upon requirements of the customer; the proper application of sound technical criteria and practices of the disciplines involved; appropriate laws, regulations, and policies on schedule and within budget. Function of the District VEO.

SAVE International. Formerly called the Society of American Value Engineers, International, this organization sets standards for Value Engineering/Value Management practices, requirements for professional certification and provides training opportunities for VE practitioners.

SFO. Support For Others. Otherwise known as IIS – International and Interagency Support. Projects that are performed by the Corps of Engineers on a reimbursable basis for the requesting organization.

Senior Management Official Responsible for VE. Per OMB Circular A-131, each Federal Agency/Department/Service/organization will assign a "Senior Management Official Responsible for VE" as the single source for all Agency VE matters. This person shall serve as the Subject Matter Expert (SME) for that organization with regard to Value Engineering.

Technical Products. All deliverables are referred to as technical products, including real estate, decision and implementation documents, PMPs and plans and specifications that include the integration of technical products from multiple functional elements. They include completed deliverables that are ready for transmission to other members of the design or study team outside of the element that performed the work.

Technical Review. Technical Review focuses on compliance with established policy, principles and procedures using clearly justified and valid assumptions. It includes the validation of assumptions, methods, procedures and material used in analyses based on the level of complexity of the analysis. It validates the alternatives evaluated, appropriateness of data used and level of data obtained, functionality of the product, and validates the reasonableness of the results including whether the product meets the customer's needs consistent with law and existing policy and engineering and scientific principles.

TPP. Technical Project Planning. The Technical Project Planning process is a comprehensive and systematic planning process for identifying long and short-term project objectives. Technical project planning is accomplished at the beginning of a project whereby all stakeholders provide input to the initial perimeters.
Value Engineering (VE) Methodology. A function oriented, systematic team approach to balance performance and cost, performed under the direction of an active District VE Officer or facilitator with qualifications equivalent to a Certified Value Specialist. The Value Engineering

methodology utilizes six basic steps (information, function analysis, creative, evaluation, development, and presentation) to perform an analysis of the functions of a program, project, system, project, item of equipment, building, facility, service or supply of an executive agency, for the purpose of improving performance, reliability, quality, safety and life cycle costs.

Value Engineering Study. A process of application of the Value Engineering Methodology, which uses a multi-discipline team of designers and stakeholders and the product delivery team to break down the project into functional performance elements. Cost and benefits are assigned to each element and evaluated. Creative options are then sought to improve functionality and/or cost-effectiveness. Results are documented in a published report. This study or workshop (studies or workshops as appropriate) is (are) a milestone(s) to be identified in the PMP and accomplished as part of the VE process.

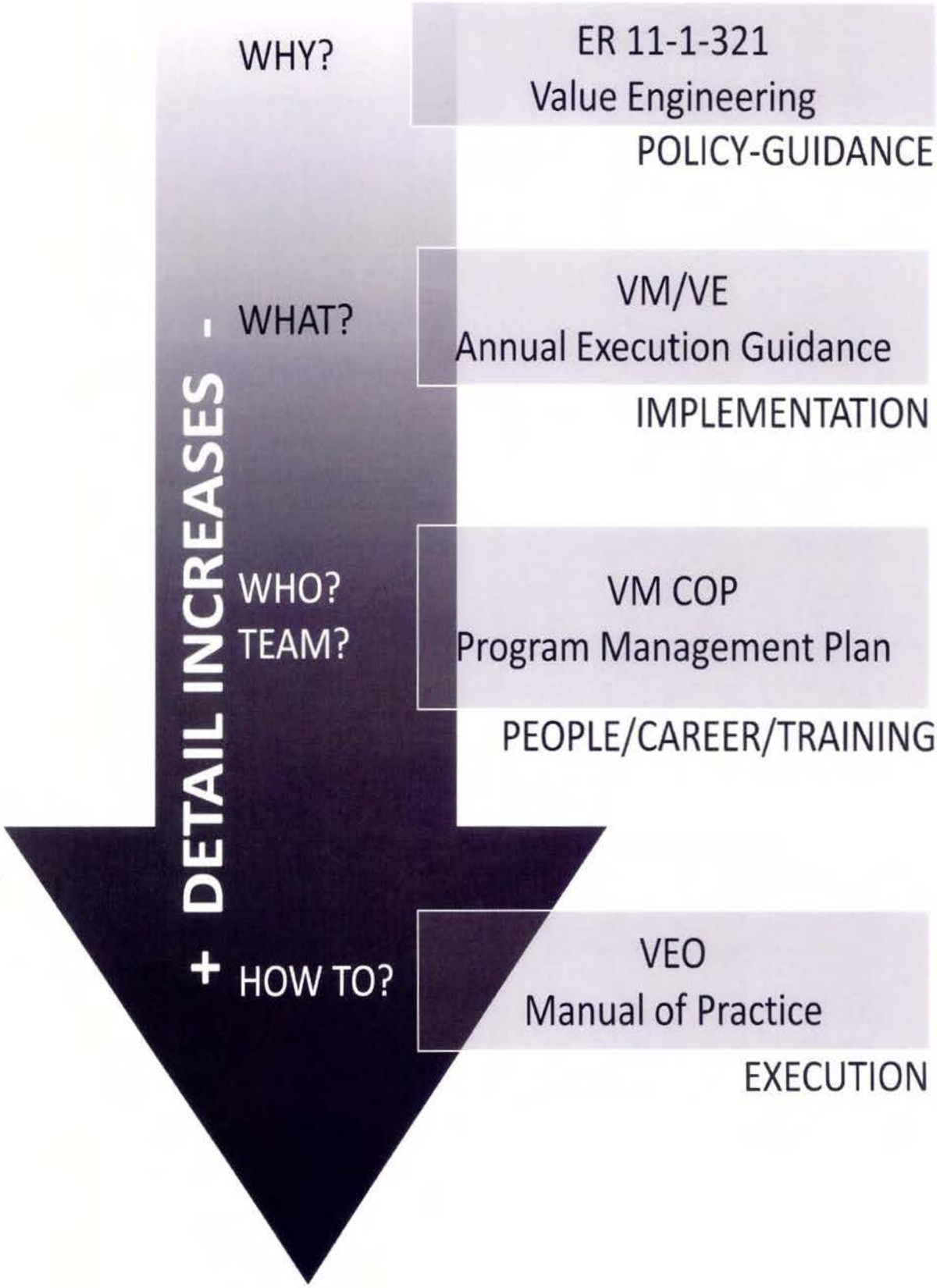
VEAC. Value Engineering Advisory Committee. Composed of HQ Chief, OVE, MSC VE Program Managers and/or their selected representatives, formed for the purpose of advising the HQ Chief, OVE, on matters of importance from their District and Division offices.

VECP. Value Engineering Change Proposal. A VE proposal submitted by the contractor after award with the savings being cost shared between the contractor and government.

VM. Value Management. The use of the Value Methodology at multiple points in a project, process, or program to discover, understand and consider the needs and values of all Project Delivery Team (PDT) members, customers, partners and stakeholders. When performed properly and professionally, Value Management Workshops help the project manager effectively balance scope, schedule, resources and quality of a project. The VE process emphasizes the use of multi-functional teams and their resulting synergy. It is a management tool that should be applied throughout the life cycle of projects and programs. Value Management seamlessly integrates into the PMBP and may be applied to all business processes phases.

VM Plan. Value Management Plan. A sub-element of the project management plan that describes how value methodology will be applied throughout the life of the project.

Value Methodology. The value methodology is a sysematic process that follows the Job Plan. The Job Plan consists of the following sequential phases: Information phase, Function Analysis Phase, Creative Phase, Evaluation Phase, Development Phase and Presentation Phase, as applied in a Value Management Workshop or Value Engineering Study.


WHY?
ER 11-1-321
Value Engineering
POLICY-GUIDANCE
WHAT?
VM/VE
Annual Execution Guidance
IMPLEMENTATION
WHO?
TEAM?
VM COP
Program Management Plan
PEOPLE/CAREER/TRAINING
HOW TO?
VEO
Manual of Practice
EXECUTION
- DETAIL INCREASES +