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Policies and Procedures

Title: Value Engineering

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This P&P implements the policy and procedural requirements of OMB Circular No. A-131, Value Engineering, in ARS. It requires the application of value engineering in new construction/major modernization projects and in the acquisition of supplies and services.

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1. Introduction

This P&P provides policy and guidance in the use of value engineering (VE) techniques, where appropriate, to reduce cost and improve and maintain optimum quality of ARS construction and acquisition program functions.

On January 26, 1988, the Office of Management and Budget (OMB) issued OMB Circular No. A-131 requiring all Federal agencies to establish and improve the use of VE programs to identify and reduce nonessential procurement and program costs.

On July 12, 1989, USDA issued a Departmental Regulation 5048-1 to implement the policy and procedural requirements of OMB Circular No. A-131 within the Department.

In an August 1991 audit of VE in the Federal Government by the President's Council on Integrity and Efficiency, it was concluded that more can and should be done by Federal agencies to realize the benefits of VE. Reports issued by the General Accounting Office and agency Inspectors General have also consistently concluded that greater use of VE techniques would result in additional savings to the Government.

On May 21, 1993, a revised OMB Circular No. A-131 was issued to establish new Federal policy on VE. The Circular mandated agencies to:

- establish VE programs and to use VE techniques, where appropriate, to reduce nonessential procurement and program costs;
- apply VE in agency projects/programs when the cost of a project/program is $1 million or more;
- emphasize, through training and other means, the potential of VE to reduce unnecessary costs;
- establish a focal point within each agency to monitor, manage, and maintain data on agency VE programs;
- establish criteria and guidelines for screening agency projects/programs which might benefit from the application of VE;
- adhere to the acquisition requirements of the Federal Acquisition Regulations (FAR), including the use of VE clauses set forth in Parts 48 and 52;
- develop annual plans for using VE in the agency; and
- report annually to OMB on agency’s VE activities.

2. Policy

The policy of ARS is to utilize VE as a management tool, where appropriate, to reduce the life cycle cost of the Agency's construction and acquisition programs/projects while achieving the essential functions consistent with the required performance, quality, reliability, and safety. To the extent practicable, VE shall be applied in new construction and major modernization projects and in the acquisition of supplies and services.

- VE clauses of FAR, Parts 48 and 52, shall be incorporated in appropriate solicitations or contracts for supplies, services, Architect-Engineer (A-E), and construction projects.

- VE studies shall be performed on new construction and major modernization projects when the estimated cost of construction is $1 million or more.

3. Value Engineering Application in Facility Construction

The regulatory basis for the application of VE in design and construction projects is the FAR Part 48. The standard clauses for participation of A-E's and construction contractors are in Part 52; Clause 52.248-2 addresses design, and Clause 52.248-3 deals with construction.

When VE is introduced early in the design of a project, the savings potential is greater than if applied later in the construction phase. If VE savings are identified, the project budget may be reduced or the money may be reallocated, if justifiable, for features that would lend greater life cycle value to the building. Also, early review of design allows a change of design direction, if appropriate, without affecting project delivery schedules.

In the design phase, a VE study of the design documents is performed by a team of Government or contract personnel who are trained in VE techniques. The discipline and expertise of the individuals performing VE shall match that required by the project. The study evaluates design alternatives that could increase the functional value of the facility at completion while reducing construction or the operation and maintenance cost.

In the construction phase, the Government relies on the contractor's initiative to propose a value engineering change in accordance with the VE incentive clause included in the contract. When the contractor submits a VE change proposal (VECP) to construction requirements, materials, or methods, the contractor shares in the savings. The proposed changes are evaluated by the Government and, if approved, modifies the contract and makes an incentive payment to the contractor. The FAR Part 48 provides guidance for processing of VECP's.

ARS employs the services of A-E's to perform VE services during early stages of design for specific projects. The services include evaluation and review of design documents immediately

following completion of the 35 percent design stage, conduction of VE workshop in accordance with the guidelines of the Society of American Value Engineers (SAVE), and preparation of the preliminary and final VE reports.

Five Phases of VE Process During Design Phase

Information Phase - During this phase, the VE team gathers as much information as possible about the program requirements, project design, background, constraints, and estimated/projected costs. The team performs functional analysis of systems and subsystems to identify high cost areas. The project designer provides additional design data and participates in the initial VE team conference.

Speculative/Creative Phase - The team uses a group interaction process to identify alternative ideas for accomplishing the function of a system or subsystem.

Evaluation/Analytical Phase - The ideas generated during the speculative/creative phase are screened and evaluated by the team. The ideas showing the greatest potential for cost savings and project improvement are selected for further study.

Development/Recommendation Phase - The team researches the selected ideas and prepares descriptions, sketches, and life cycle cost estimates to support the VE proposal (VEP) recommendations.

Report Phase - The team presents the VEP's to the Government during an oral presentation at the conclusion of the workshop. Shortly after the completion of the VE workshop, a preliminary VE report encompassing the entire VE effort is prepared by the VE team leader and submitted to the Government.

The preliminary VE report addresses any and all pertinent data or information that resulted from the study. Information typically will include, but is not limited to, an executive summary, a list of items or process examined, alternatives, functional and life cycle cost analyses, VEP's and supporting information such as a description of the difference between existing and proposed design, advantages, and disadvantages; a list and analysis of design criteria or specifications that must be changed if the VEP's are accepted by the Government; and the cost and schedule impact of the VEP's if implemented by the Government.

After the preliminary VE report is discussed with the project designer and the Government decisions are made, the VE team will prepare a final VE report to indicate those proposals that are accepted. In ARS, the decision to accept or reject VEP's is with the Research Program Representatives after consultation with the Engineering Project Manager and Contracting Officer for the project.

4. Annual Reporting to OMB

OMB Circular No. A-131 requires USDA to report annually to OMB on VE activities. The report is due to OMB by December 31 of the calendar year. The USDA's Office of Operations (OO) is responsible for preparation of the Department's submission. As a minimum, ARS will be expected to submit the following information to OO by November 1 of each calendar year.

- The name, address, and telephone number of the person responsible currently for the agency's VE program. The OO will furnish a consolidated listing to the OMB.

- A list of VE projects, the net life cycle cost savings, and description of quality or other non-quantifiable improvements (if any.)

5. Summary of Responsibilities

Facilities Division, AFM

- Manage and monitor VE and maintain data on the program. Managing and monitoring shall include information and training on VE and reviewing and analyzing VE activities.

- Incorporate in appropriate A-E and construction solicitations and/or contracts applicable VE clauses as required by FAR, Parts 48 and 52 (i.e., 52.248-2, Value Engineering - Architect-Engineer and 52.248-3, Value Engineering - Construction).

- Perform VE studies during the planning, design, or early phases of construction project development when the estimated construction amount is $1 million or more.

- Provide annual summary of VE program information relating to VE application in facilities design and construction.

- Prepare and coordinate submission of the agency's annual VE report to the Department.

Area Administrative Offices and Procurement and Property Division, AFM

- Incorporate applicable VE clauses of FAR, Parts 48 and 52, in appropriate supply and service contract solicitations and/or contracts.

- Provide annual summary of VE program information relating to VE application in acquisition.

6. Glossary

Architect-Engineer (A-E). A private contractor who provides professional services of an architectural and engineering nature associated with research, development, planning, design, construction, alteration, or repair of real property.

Life Cycle Cost. The total cost of a system, equipment, or other product over its useful life. It includes all relevant costs involved in acquiring, owning, operating, maintaining, and disposing of the system or product over a specified period of time.

Cost Savings. A reduction in actual expenditures below the projected level of costs to achieve a specific objective.

Cost Avoidance. An action taken in the immediate timeframe that will decrease costs in the future. For example, an engineering improvement that increases the mean time between failures and thereby decreased operation and maintenance costs is a cost avoidance action.

Value Engineering (VE). An organized effort directed by a person trained in VE techniques to analyze designed building features, systems, equipment, material selections, facilities, services and supplies for the purpose of achieving the essential functions at the lowest life cycle cost consistent with the required performance, quality, reliability, and safety.

VE Proposal (VEP). An in-house Agency developed proposal, or a proposal developed by a contractor under contract to the Agency to provide VE studies for a Government project/program.

VE Change Proposal (VECP). A change proposal submitted by a construction contractor under the VE incentive or program requirement clause included in the contract.

/s/

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