

SUPPLEMENTAL DIRECTIVE

NNSA SD 413.3-5

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VALUE MANAGEMENT



NATIONAL NUCLEAR SECURITY ADMINISTRATION
Office of Acquisition and Project Management

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VALUE MANAGEMENT

1. PURPOSE. To establish requirements necessary for the implementation of Value Management (VM) on National Nuclear Security Administration (NNSA) programs and projects. This Supplemental Directive (SD) describes NNSA roles, responsibilities, and authorities as they relate to the implementation of VM in accordance with Department of Energy (DOE) Order (O) 413.3B, *Program and Project Management for the Acquisition of Capital Assets*, or successor (herein referred to as DOE O 413.3B) and subsequent direction from the Secretary of Energy.
2. AUTHORITY. DOE O 413.3B, *Program and Project Management for the Acquisition of Capital Assets*.
3. CANCELLATION. Business Operating Procedure (BOP) 413.1, *Value Management (VM)*, admin change, dated 01-06-2014.
4. APPLICABILITY.
 - a. Federal. Applies to all NNSA federal organizations.
 - b. Contractors. Does not apply to contractors.
 - c. Equivalencies/Exemptions:
 - (1) Equivalency: In accordance with the responsibilities and authorities assigned by Executive Order 12344, codified at 50 United States Code (U.S.C.) sections 2406 and 2511, and to ensure consistency throughout the joint Navy/DOE Naval Nuclear Propulsion Program, the Deputy Administrator for Naval Reactors (Director) will implement and oversee requirements and practices pertaining to this Directive for activities under the Director's cognizance, as deemed appropriate.
 - (2) Exemption: DOE O 413.3B, Paragraph 3.c., provides information regarding exemptions from specific requirements when certain criteria are met by a project. In each case, the project must petition the Project Management Risk Committee (PMRC) for an exemption. The final decision is made by either the appropriate Under Secretary or the Deputy Secretary, depending on the result of the PMRC review. DOE O 413.3B nuclear safety-related requirements, including DOE-STD-1189-2016, must be included and shall not be exempted. Further, exemptions do not apply to defense nuclear facilities. Details regarding exemptions from specific DOE O 413.3B requirements can be found in DOE O 413.3B, Paragraphs 3.c.(3, 4, 5). For projects under the DOE O 413.3B \$50M applicability threshold, projects must seek exemption approval from the Project Management Executive (PME).

2

5. SUMMARY OF CHANGES.

- a. Updated requirements to reflect the latest version of DOE 413.3B, including a change from \$20M to \$50M in the applicability threshold.
- b. Added new requirements reflected in the Administrator's July 18, 2019, correspondence for *Aligning the NNSA for Mission Success*, which outlines that the Office of Acquisition and Project Management (NA-APM) will implement NNSA's Project Delivery Model for Line-Item Capital Projects (LICPs). This measure ensures that project conceptual designs are managed by acquisition and project management professionals after PME approval of the Analysis of Alternatives (AoA).
- c. The information contained herein has been modified from BOP 413.1, *Value Management (VM)*, and has been converted into this SD.

6. BACKGROUND.

VM, which encompasses value analysis, value engineering (VE), value planning, and value control, is a methodology for analyzing functions of an item or process to determine the best value or the best relationship between worth and cost. VM is a systematic and structured approach for improving projects and processes directed toward analyzing the functions of systems, equipment, facilities, services, and supplies for the purpose of achieving the essential functions at the lowest life cycle cost consistent with required performance, reliability, quality, maintainability, environmental protection, and safety.

VM challenges the Program Manager (PM), the Federal Project Director (FPD), and organizations providing support to them to continually consider if they have properly identified the right need. Value is defined as the reliable performance of functions to meet customer needs at the lowest overall cost, which is calculated using the following formula:

- **Value = Function/Cost**
 - Function = what the product or service is supposed to do.
 - Cost = the expenditure needed to create it.

Implementation of a cost-effective VE process is required by 41 U.S.C. 1711 and outlined in the VE processes and requirements listed in DOE O 413.3B.

DOE has determined that DOE O 413.3B processes and requirements provide equivalency and satisfy the VE guidance and requirements previously referenced in DOE Notice (N) 413.2, DOE Policy 413.2 (cancelled by DOE N 251.94 on 12/13/2010), and OMB Circular A-131. DOE O 413.3B implements the

requirements of OMB Circular A-131, *Value Engineering*, which requires that all Federal agencies use VE as a management tool.

Projects under the \$50M applicability threshold for DOE O 413.3B are required to implement VM using a tailored approach.

VM and VE techniques, as appropriate, must be used to ensure that the most effective life-cycle solutions are implemented.

7. REQUIREMENTS.

a. Line-Item Capital Projects.

- (1) NA-APM must implement NNSA's Project Delivery Model for other Line-Item Capital Projects. This model involves an integrated team of acquisition, design, and construction management professionals. NA-APM's management of the project must begin at the start of Conceptual Design.
- (2) VM must apply whenever there appears to be potential for program or project lifecycle improvement at a cost commensurate with the value to be added, i.e., where the value to be added exceeds the cost of conducting the VM activity and effecting related changes to the program or project.

b. Laws and Contracting.

- (1) VM must comply with all applicable laws, regulations, and implementing guidelines for application and use of VE as defined per 41 U.S.C. 1711. Agencies must provide contractors with a substantial financial incentive to develop and submit a Value Engineering Change Proposal (VECP).
- (2) NNSA contracting activities must include VE provisions in appropriate supply, service, architect-engineer, and construction contracts as prescribed by FAR 48.201 and FAR 48.202, except where exemptions are granted on a case-by-case basis, or for specific classes of contracts, by the agency head. See FAR 48.102 and FAR 52, including FAR 52.248-1, for more additional information.

c. Studies.

- (1) VM studies must use a tailored, verifiable process that achieves the essential functions of a project or program at the best value for the Government, consistent with the needed performance, safety, security, reliability, and maintainability (see Appendix A).
- (2) The study must follow SAVE International's® (the international society devoted to advancing and promoting VM) standard job plan, which consists of six phases (See Appendix C).

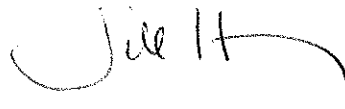
- (3) After completion of a VM study and internal approval, the study must be included with the permanent program/project files. An NNSA Value Management Report Summary (see Appendix B) must be furnished to the PME, the Federal PM, the Associate Administrator for Acquisition and Project Management, and the contracting officer.

8. RESPONSIBILITIES.

- a. Associate Administrator for Acquisition and Project Management (NA-APM).
Establishes, coordinates, maintains, and documents a viable VM process that includes the application of value management/engineering-related laws, regulations, policies, and orders.
- b. Deputy Administrators and Associate Administrators of Sponsoring Programs.
 - (1) Implement this policy within their organizations.
 - (2) Ensure timely requests for reports from the FPD (see format in Appendix B) on applied use of VM studies.
- c. Program Manager (PM) and Field Office Manager.
 - (1) Support the FPD in the implementation of VM requirements throughout the project lifecycle.
 - (2) Prior to the assignment of the FPD, the Headquarters Project Manager (acting in the role of the FPD) will consult with the PM on all VM-related requirements and objectives.
 - (3) Coordinate and consult with the Program and Field Office Manager, once the FPD is assigned, to monitor the implementation of VM objectives and review reports containing documentation of VM activities.
 - (4) Organize and account for the budget of any VM program study.
 - (5) Apply VM whenever there appears to be potential for program or project lifecycle improvement at a cost commensurate with the value to be added, i.e., where the value to be added exceeds the cost of conducting the VM activity and effecting related changes to the program or project.
- d. Federal Project Director (FPD).
 - (1) Implements VM in their projects, documenting the results of performed VM activities, and submitting reports documenting results to the Associate Administrator for Acquisition and Project Management.

- (2) In consultation with the Program and Field Office Managers, assumes VM responsibilities for the project post AoA.
 - e. Headquarters Project Manager (HQPM). Coordinates and consults with the PM in implementing and meeting the VM requirements for the project, prior to the nomination of the FPD. After the appointment of the FPD, the FPD assumes VM responsibilities for the project.
 - f. Contracting Officer (CO).
 - (1) Inserts a VM clause in contracts when the contract amount is expected to exceed the simplified acquisition threshold, pursuant to FAR 48.201 and FAR 48.202.
 - (2) Inserts Department of Energy Acquisition Regulation (DEAR) clause 970.5215-4, *Cost Reduction NNSA Class Deviation*, in contracts.
 - (3) Reviews, approves, or authorizes VE Change Proposals submitted by the contractor and any related contract changes to scope, cost, or schedule.
 - g. Project Management Executive (PME).
 - (1) Assists with the development of supplemental policies for the use of VE, pursuant to FAR 48.102.
 - (2) Reviews the recommended VM alternatives contained in the report and selects the alternatives to be incorporated into the design through the change control process in the preliminary project execution plan.
9. CONTACT. Office of Enterprise Project Management (NA-APM-20), 202-586-6567.

BY ORDER OF THE ADMINISTRATOR:



Jill Hruby
Administrator

Appendixes:

- A: Value Management Process Guidelines
- B: NNSA Value Management Report Summary
- C: SAVE International – Six Phases
- D: Acronyms/Abbreviations
- E: Definitions
- F: References

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APPENDIX A: VALUE MANAGEMENT PROCESS GUIDELINES

1. BACKGROUND. Value management (VM) is an organized analysis of a program or project to determine essential program/project scope, baseline schedule, or cost consistent with the required program/project performance. Value analysis, value control, value improvement, and value engineering are tools included within VM for the purposes of this policy. VM uses a professionally applied, function-oriented, systematic team approach to analyze and improve value in products, facilities, systems, or services. It is a powerful decision-making process for solving problems while improving performance and quality.
2. PROCESS.
 - a. At the onset of any National Nuclear Security Administration (NNSA) program or project, VM should be applied to defining the desired scope, schedule, and cost.
 - b. For ongoing Capital Acquisition projects:
 - (1) The Federal Project Director (FPD), in consultation with the Program and Field Office Manager, can determine if a potential for project lifecycle improvements exists. Improvements include determination or modification of project scope, determination or modification of project schedule, or determination or modification of project costs.
 - (2) If so, the FPD, in consultation with the Program Manager (PM) and contracting officer (CO), can decide, at any time during the project, to conduct a facilitated, project-enhancing study that adds value to scope, schedule, or costs. VM studies or other project enhancing investigations that increase project value will be included in the project files.
 - (3) Decisions to perform VM or other project enhancing investigations must be reviewed and approved by the Project Management Executive (PME) in consultation with the PM.
 - c. For other, ongoing programs and projects:
 - (1) The appropriate Deputy or Associate Administrator, interim manager, Federal Program Manager (FPM), or FPD can determine if a potential for project lifecycle improvements exists.
 - (2) If so, they can decide at any time during the program/project, in coordination with the CO and others, to conduct a VM study to add value to the scope, schedule, or cost of the program/project.

- d. If it is determined that the potential for lifecycle improvement exists, performance of a VM study should be considered. The study scope could vary from a facilitated program-wide study with a large team down to one or two analysts examining one specific aspect of the program. Such a VM study must, at a minimum, include:
 - (1) A definition of the function being reviewed.
 - (2) Method of information gathering.
 - (3) Analysis of alternatives (AoA).
 - (4) Evaluation of the best alternatives.
 - (5) A report of the findings.
- e. No format or scope is specified for an NNSA VM study. Rather, a VM study can be any well-documented investigation of a project that increases value to the Government.
- f. The VM study report, at a minimum, should contain:
 - (1) An Executive Summary.
 - (2) A one-page NNSA Value Management Summary Report.
 - (3) A detailed description of analysis methodology, alternatives analysis, evaluation of best alternatives, project lifecycle results, recommendations, team members, and applicable project documentation.
 - (4) Value Engineering Change Proposals submitted by the contractor must be in accordance with Department of Energy Acquisition Regulation (DEAR) 970.5215-4, *NNSA Class Deviation*.
- g. Once a cost estimate for the VM study or VM activities has been determined, the FPD, in consultation with the PM, determines if the cost-effectiveness of VM activities will result in improved performance, reliability, quality, safety, or lifecycle costs for the project.
- h. If a VM study is deemed to not be cost-effective, this decision, with the supporting documentation, is to be included in the program/project files. Some cost-effective options for VM studies include:
 - (1) Completed alternative studies that address alternatives to the scope, schedule, risk, or cost of the project (alternative analyses).

- (2) Lessons learned from similar projects that had VM studies or value enhancing investigations performed, and the improvements have been used in this program's/project's design and baseline.
 - (3) The technology is proven or previously subjected to one or more VM studies or value enhancing investigations; structure, system, and component costs are low; or technology has little impact to program/project scope or schedule.
 - (4) The estimated cost of the program/project is at, or below standard cost as determined by using national or other comparative measures.
 - (5) The technology is advanced and is undergoing other development or feasibility studies and a VM study would add no value.
 - (6) A capital acquisition project is in the construction phase, on schedule and within budget, and it is determined that a study or investigation would add little value.
- i. A VM study or other program/project enhancing investigation can be conducted at any time during the development of a program/project. However, to achieve the maximum benefits, VM studies, analyses, and investigations must be initiated as early as possible in the project lifecycle, but no later than completion of conceptual design. Based on experience on other line-item capital projects, the optimal point to perform VM efforts is at the conclusion of the conceptual design, when the project scope is clearly described and understood, and the project cost range has been refined.
 - j. The VM study team must use a structured process to identify target program/project activities and determine the best approach for achieving the best value for the Government.
 - k. The selection of the study team members is important for the success of the VM study. The composition of the team will vary according to the organization and function(s) of the program/project. An effective facilitator and subject matter experts for specific program/project technology and integrated disciplines, who have not been previously directly involved with the program/project, are preferred team members.
 - l. Although initial cost and schedule savings are important, the overall program/project scope, baseline schedule, and lifecycle cost, which includes reliability, availability, maintainability, and inspectability (RAMI) are the prime considerations in a VM study.
 - m. VM studies are to be conducted using Society of American Value Engineers (SAVE) analysis techniques and led by a Certified Value Specialist (CVS) who is trained in facilitation methodologies, functional analysis, or value management.

- n. Once completed, the study must be provided to the Program and Field Office Managers and the Associate Administrator for Acquisition and Project Management for review.
- o. After appropriate review of a value management study, the FPD sends the one-page NNSA Value Management Summary Report to the PME and the Associate Administrator for Acquisition and Project Management. Reports must be provided as soon as available.
- p. The VM study or other actions to address VM are to be maintained as part of the permanent program/project documentation.

APPENDIX B: NNSA VALUE MANAGEMENT REPORT SUMMARY TEMPLATE

I. Program/Project Name and Period of Performance:

(Enter the Value Management (VM) study title, location, program/project name, and study dates)

II. Sponsor/Program:

(Enter the sponsor and/or funding organization)

III. Statement of Problem and Objectives:

(Describe the pre-study problem and/or drivers and study objectives)

IV. Value Engineering (VE) Focus Areas:

(List focus areas for VE studies, include technical discipline and location)

V. Workshop Meeting Date(s) and Attendee List:

(Include details regarding the Workshop meeting schedule and Attendee List)

VI. Team Composition: # Total *(Enter total number of team members)*

Project Personnel: #:

Subject Matter Experts (SMEs): #:

Regulator/Stakeholders: #:

VE Facilitators/Leads: #: *(Indicate certification, as appropriate)*

(Identify the team composition breakdown in the four categories above)

VII. Results of Brainstorming:

(Table to list potential VE alternatives)

VIII. Screening Criteria & Screening Results:

(Table to list screening criteria/results)

IX. List of Viable VE Alternatives (with assigned priority groupings, if applicable):

(Table to list VE alternatives that survived screening)

X. Team Recommendations and Implementation Status:

(Summarize the team's recommendations/proposals, management's endorsement/approval, and implementation status)

XI. Estimated Savings/Avoidance:

- Cost:
- Schedule:
- Scope:
- Risk:

APPENDIX C: SAVE INTERNATIONAL – SIX PHASES

1. **Information:** Gather information to better understand the project.
2. **Function Analysis:** Analyze the project to understand and clarify the required functions. The Function Analysis System Technique (FAST) aids in thinking about the problem objectively and in identifying the scope of the project by showing the logical relationships between functions. The organization of the functions into a function-logic, FAST diagram enables participants to identify all of the required functions. The FAST diagram can be used to verify if, and illustrate how, a proposed solution achieves the needs of the project, and to identify unnecessary, duplicated, or missing functions.
3. **Creative:** Generate ideas on all the possible ways to accomplish the required functions.
4. **Evaluation:** Synthesize ideas and concepts and select those that are feasible for development into specific value improvements.
5. **Development:** Select and prepare the best alternative(s) for improving value.
6. **Presentation:** Present the value recommendation to the project stakeholders.

APPENDIX D: ACRONYMS/ABBREVIATIONS

| | | |
|----|---------------|---|
| a. | <u>AoA</u> | Analysis of Alternatives |
| b. | <u>BOP</u> | Business Operating Procedure |
| c. | <u>CVS</u> | Certified Value Specialist |
| d. | <u>DEAR</u> | Department of Energy Acquisition Regulation |
| e. | <u>DOE</u> | Department of Energy |
| f. | <u>DOE G</u> | Department of Energy Guide |
| g. | <u>DOE O</u> | Department of Energy Order |
| h. | <u>DOE P</u> | Department of Energy Policy |
| i. | <u>FAR</u> | Federal Acquisition Regulation |
| j. | <u>FAST</u> | Function Analysis System Technique |
| k. | <u>FPD</u> | Federal Project Director |
| l. | <u>LICP</u> | Line-Item Capital Project |
| m. | <u>NA-APM</u> | NNSA – Office of Acquisition and Project Management |
| n. | <u>OMB</u> | Office of Management and Budget |
| o. | <u>PME</u> | Project Management Executive |
| p. | <u>PMRC</u> | Project Management Risk Committee |
| q. | <u>SAVE</u> | Society of American Value Engineers |
| r. | <u>SD</u> | Supplemental Directive |
| s. | <u>TPC</u> | Total Project Cost |
| t. | <u>U.S.C.</u> | United States Code |
| u. | <u>VE</u> | Value Engineering |
| v. | <u>VECP</u> | Value Engineering Change Proposal |
| w. | <u>VM</u> | Value Management |

APPENDIX E: DEFINITIONS

Any terms used in this SD coincide in meaning to terms defined by DOE O 413.3B. Additional terms used in this SD are defined below.

- a. **Life-Cycle Cost**. The total cost of a system, building, program, project, or other product, computed over its useful life. It includes all relevant costs involved in acquiring, owning, operating, maintaining, and disposing of the system, project, or product over a specified period of time, including environmental and energy costs.
- b. **Value Engineering (VE)**. A structured technique commonly used in project management to optimize the overall value of the project without sacrificing functionality or performance. Often, creative strategies will be employed in an attempt to achieve the lowest life-cycle cost available for the project. The VE effort is a planned, detailed review/evaluation of a project to identify alternative approaches to providing the needed assets.
- c. **Value Engineering Change Proposal (VECP)**. A proposal submitted by a contractor consistent with the VE clause(s) in the contract that, through a change in the contract, would lower the project's life-cycle cost to the Government without impairing essential functions, characteristics, or performance. The contract change requirement can be the addition of the VECP to the contract with attendant savings. VECPs are applicable to all contract types, including contracts with performance-based specifications.
- d. **Value Management (VM) Study**. The formal process of applying VE on an individual project or program. VE studies may be tailored to meet the individual needs of the project or program. For example, the level of effort for each phase of VE may be scaled (truncated, eliminated, etc.), as appropriate, based on factors such as the cost or complexity of the project, the stage of project planning or development, and project schedule.
- e. **Value Management (VM)**. An organized effort directed at analyzing the functions of systems, equipment, facilities, services, and supplies for achieving the essential functions at the lowest life-cycle cost that is consistent with required performance, quality, reliability and safety. VM encompasses VE.
- f. **Value = Function/Cost**
 - Function = what the product or service is supposed to do.
 - Cost = the expenditure needed to create it.

APPENDIX F: REFERENCES

- a. 41 United States Code (U.S.C.) 1711, *Value Engineering*
- b. OMB Circular A-131, *Value Engineering*
- c. Department of Energy (DOE) Order (O) 413.3B, *Program and Project Management for the Acquisition of Capital Assets*
- d. Federal Acquisition Regulation (FAR), Part 48, *Value Engineering*
- e. Federal Acquisition Regulation, Part 52, *Solicitation Provisions and Contract Clauses, Subpart 52.248, Value Engineering*
- f. DEAR 970.5215-4, *Cost Reduction NNSA Class Deviation*
- g. SAVE International, www.value-eng.org
- h. Federal Acquisition Regulation, Part 48.102, *Policies*