DEPARTMENT OF ENERGY
Washington, DC 20585

June 19, 1995

Mr. George W. Cunningham
Technical Director
Defense Nuclear Facilities Safety Board
625 Indiana Avenue, N.W.
Suite 200
Washington, D.C. 20004

Dear Mr. Cunningham:

In response to Implementation Plan for Defense Nuclear Facilities Safety Board Recommendation 92-4, (commitment 3.7.c ref DOE/RL-94-115), the Office of the Associate Deputy Secretary for Field Management has reviewed the Department of Defense (DoD) Systems Engineering and Design Review Standards in MIL-STD-499B and Electronic Institutes Association Interim Standards EIA/IS-632 (which incorporates MIL-STD-499B) and compared those Standards to Department of Energy (DOE) practices and applications in similar areas. The report which describes the results of this study is found in Enclosure 1.

The report focuses primarily on the correlation between EIA/IS-632 and the DOE project and systems engineering guides now being developed. Applying systems and project management engineering principles, is often appropriate to the nature and scope of DOE activities and projects. These principles are currently in use within DOE in a graded manner and are being strengthened with the development of project management guides (Enclosure 2). A single, deterministic project and facility technical management standard is not universally applied within DOE since such an application would be ineffective and costly given the diverse nature of DOE's activities and projects. Although a single standard is not applied in DOE universally, project and facility life-cycle phasing and sequencing, decision requirements and technical planning/control logic correlate with the DoD and Electronic Institutes Association systems engineering standards. The DOE utilizes structured tools and techniques equivalent to the DoD Standards evaluated in this study. These tools and techniques are applied to the management process as appropriate to the DOE's diverse missions.

If there are any questions on this report, please contact Pete Devlin of my office on (202) 586-4905.

Antonio F. Tavares, Director
Office of Infrastructure Acquisition
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Enclosures

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DOE vs DoD System Engineering Application

Introduction

DOE-FM (Office of the Associate Deputy Secretary for Field Management) in support of DOE/RL-94-115, commitment 3.7.c, has reviewed Department of Defense (DoD) Systems Engineering and Design Review Standards; MIL-STD-499B and EIA/IS-632, cognizant that the latter interim standard supersedes the former MIL-STD. These standards have been compared with DOE practices and applications. The Department of Energy, hereafter referred to as the Department, incorporates equivalent structured tools and techniques as appropriate to the Department's diverse lines of business, into the management process. The Project Management Overview Guide (PMOG), currently under development, will be directly supported by numerous topical guides on specific areas including systems engineering subjects. The *Tank Waste Remediation System Systems Engineering Standard* (TWRS SES) is addressed in this report as an example of a Department systems engineering field application. This report is focused primarily on the correlation of EIA/IS-632 with project management processes that will be described in the Project Management Overview Guide and its supporting topical guideline documentation.

DOE Systems Engineering Applications

The DoD Systems Engineering Standards, including their structured approach for applying systems engineering tools and techniques are, in principle, consistent with the needs of the Department. However, the DoD Standards, appropriately oriented toward manufacturing operations, depart from meeting the diverse needs of the DOE. Environmental restoration, waste management, applied technology, and capital construction are primary DOE activities with manufacturing being one of the minor Department activities. Department activities often contain no repetitive operations as compared with DoD (manufacturing oriented) applications which usually involve many repetitive operations. As a result, various management control processes, tools, techniques, decision requirements, and project phasing apply differently in Department activities. Lessons learned for example, can be more readily and directly applied to the activities in which subject experiences occurred in the manufacturing environment, often achieving significant continuous improvement. A single sequence of activities such as a capital construction project cannot offer the same degree of optimization that repetitive operations and manufacturing can.

Application of the Graded Approach

Consistent with the Electronic Institutes Association Interim Standards (EIA/IS-632) that have been adopted by DoD, the Department applies a (risk based) graded approach to management ensuring that project and facilities management requirements are balanced and commensurate with objectives, complexity, and risk (probability for failure and associated probable consequences). The PMOG and supporting documentation now in development, especially the guide that will be entitled *Project Risk Management*, will clearly address this approach.

DoD/DOE Facility and Project Life Cycle Phasing

Project phases and intermediate reference points for generic DOE processes, and the specific DOE process described in the TWRS SES, are compared and contrasted with MIL-STD-499B and EIA/IS-632 in attachments I, II, III, IV, and V which are described in the Attachment List below:

Attachment List

Attch #	Title	Description
I	DOE vs MIL-STD-499B Facility Life-Cycle Phasing Summary Comparison	Contrast of generic DOE facility life-cycle phasing sequence with DoD phasing described in MIL-STD-499B, and both phasing sequences compared with a generic DoD process phasing sequence.
II	TWRS SES vs MIL-STD-499B vs EIA/IS-632 Comparison	Contrast of TWRS SES facility life-cycle phasing with that of MIL-STD-499B and EIA/IS-632 using a phasing diagram from the TWRS SES, adapted to this report.
III	EIA/IS-632 *FIGURE 4. Example of a System Life-Cycle*	EIA/IS-632 system life-cycle, numbered at various stages for correlation with the DOE facility life-cycle illustrated in Attachment V.
IV	MIL-STD-499B *FIGURE 4. Example of a System Life-*Cycle	MIL-STD-499B system life-cycle, numbered at various stages for correlation with the DOE facility life-cycle Illustrated in Attachment V.
V	DOE vs MIL-STD-499B vs EIA/IS-632 Facility Life-Cycle Phasing Comparison	Contrast of the DOE facility life-cycle phasing sequence with those of MIL-STD-499B and EIA/IS-632 using a detailed DOE process flow diagram.
VI	Typical DOE Project Phases	Contrast of various DOE business line facility life-cycle phase types and sequences.
VII	Typical Systems Engineering Process	Illustration of the analytical process that is applied on DOE projects.

Attachment VI contrasts the phasing requirements of the various major types of DOE projects, as described above, with each other and with a generalized systems engineering project cycle model. This attachment illustrates the fact that environmental restoration project phasing is significantly different from capital construction or applied technology development project phasing in both activity orientation and phase relationships. For example, The initial environmental restoration project phase is "Transition From Operations" rather than "Pre-conceptual Design". Also, the

subsequent Assessment and Interim Corrective Actions phase which transitions into the Remediation phase significantly departs from the design and construction phases of the other two project types both in activities and transition time.

A typical systems engineering process applicable to DOE operations is illustrated in Attachment VII.

Attachment V, is part of the Department's management approach to projects, and will be included in the PMOG (without the additional information that has been added for this report). The initial stages of the illustrated processes, the generic DOE process and MIL-STD-499-B-EIA/IS-632, directly correlate; these are oriented toward establishment and approval of mission need. Activities and processes in the second, "conceptual" phase are also consistent among the two standards, and are devoted to conceptual design and project baseline establishment. Alternative design concepts may be developed and considered in the Department's process, thus correlating with DoD Alternative System Review(ASR). The results of such alternative design studies would be included in the conceptual design documentation, which are approved prior to advancement to the next project phase. Approved conceptual design documentation is the Department's equivalent to DoD Operational Requirements Document (ORD) 1.

The third Department phase, "Project Execution", is generally consistent and is functionally equivalent to phasing in the DoD documents. Activities, sequencing, and decision processes correlate. As illustrated, DOE preliminary design completes with selection of the preferred alternative design. This is consistent with "reduced risk alternative" activities shown for the DoD Standards in Attachments III and IV. However, phase overlap and single to multiple phasing relationships exist. For example, the DOE Project Execution phase correlates directly with: MIL-STD-499B Demonstration & Validation, part of Engineering & Manufacturing Development, and part of Production & Deployment-Operational Support phases; and with EIA/IS-632 Concept Validation, partial Design & Verification, and partial Production and Deployment phases. The reason for the differences in terminal phase points is the manufacturing versus environmental restoration and waste management, applied technology development, or capital construction nature of DoD vs Department projects. Attachment I illustrates how different Department operations correlate with MIL-STD-499B, and the relationship between DOE non-manufacturing operations, and DoD manufacturing operations. DOE engineering and construction of facilities is equivalent to the MIL-STD-499B Engineering and Manufacturing Development phase. However, construction is not applicable to environmental restoration projects (Assessment & Interim Corrective Actions, the equivalent of engineering, transitions directly into a remediation phase). Therefore, the DoD Standard Production & Deployment-Operations & Support phase as applied to the Department could start at the end of remedial design for environmental restoration projects, at the close of the Department (construction) Acceptance phase for capital plant projects, or anywhere in-between for combined operation or certain applied technology development projects.

ORD 2, the DoD point at which the reduced risk alternative is selected following System Requirements Reviews and System Functional Reviews correlates directly with the "Select Alternative" decision point labeled "3" on Attachment V.

In a similar manner to the variable relationship between the DOE Execution phase and the DOD Standard discussed above, ORD 3, which is the point of "facility" acceptance after System Verification Review (SVR) and prior to the Physical Configuration Audit (PCA) labeled "4" on Attachments IV and V, can occur anywhere from Detailed Design Acceptance to Final Acceptance (of completed facilities). The equivalent point at which ORD 3 occurs depends on the type of Department project, as illustrated in Attachment V. However, final facility acceptance is not part of the DOE operations phase. Therefore, the Department Acceptance and Operations phases generally correlate to part of the DoD standard Production & Deployment and Operations & Support phases. For the Department, the completion of as-built drawings is equivalent to ORD 4, labeled "5" on attachments III, IV, and IV.

EIA/IS-632 Detailed Requirements and Related DOE Topical Good Practice Guides

Table 1, *Detailed Requirements vs Applicability and Guide Development* lists EIA/IS-632, section 4, Detailed Requirements, and addresses whether they apply to Departments activities and projects. This table also notes whether or not an individual guide may be developed for each topic, and provides associated comments. Topical guides will contain more detail than the EIA/IS-632, and are being developed to provide practical support to field project managers in implementation of good practices on various types of projects. Each topical guide will define the subject topic and describe circumstances under which the topic applies, and application methods, specific to each of the various Department activities and projects where appropriate.

Many topics that are not listed in the Detailed Requirements section of EIA/IS-632, and therefore not listed in Table 1, are intrinsic to DOE operations. Such topics, some of which are listed in the Interim Standard under *General Requirements*, will be the subjects of additional Good Practice Guide material being developed. Table 2, *Project Managers Guides Currently under Development*, and the associated "Attachment 2-1" *Project Management Good Practices Guides TOP 10 PRIORITIES* list the 10 major topical guides that are currently under development. Table 3, *Proposed Project Managers Guide Topics*, lists additional topics that are under consideration for guide development.

Decision Points and Review Requirements

Attachment V, the DOE Project and Facility Management System and Flow Diagram illustrates the following project decision points and review requirement logical relationships. Critical Decisions are formal decisions required for project continuation.

Decision Points:

-Approve Mission Need (Critical Decision)

-Approve Baseline (Critical Decision)
-Select Alternative (preliminary) Design
-Start Construction (Critical Decision)
-Completion / Acceptance (of facility) (Critical Decision)
-Operations Phase Decision

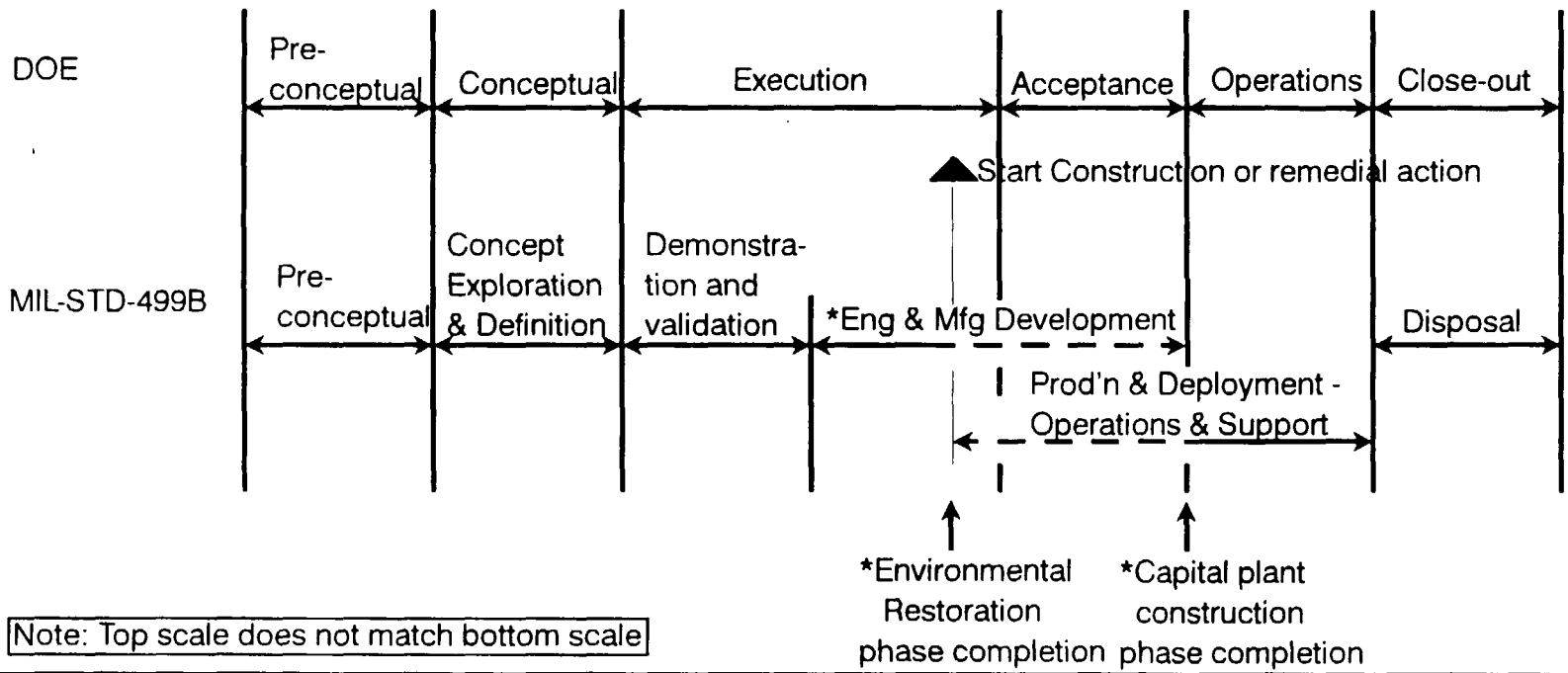
Reviews:
-Design Review (preliminary design)
-Design Review (detailed design)

The technical review requirement level of detail that is addressed in EIA/IS-632 is addressed in the TWRS Systems Engineering Standard, and will be addressed in the PMOG and supporting System Engineering Process Requirements guides. Table 4, *EIA IS-632 Technical Review Requirements Applicable to DOE* addresses the DOE documentation of technical review applications.

Conclusion

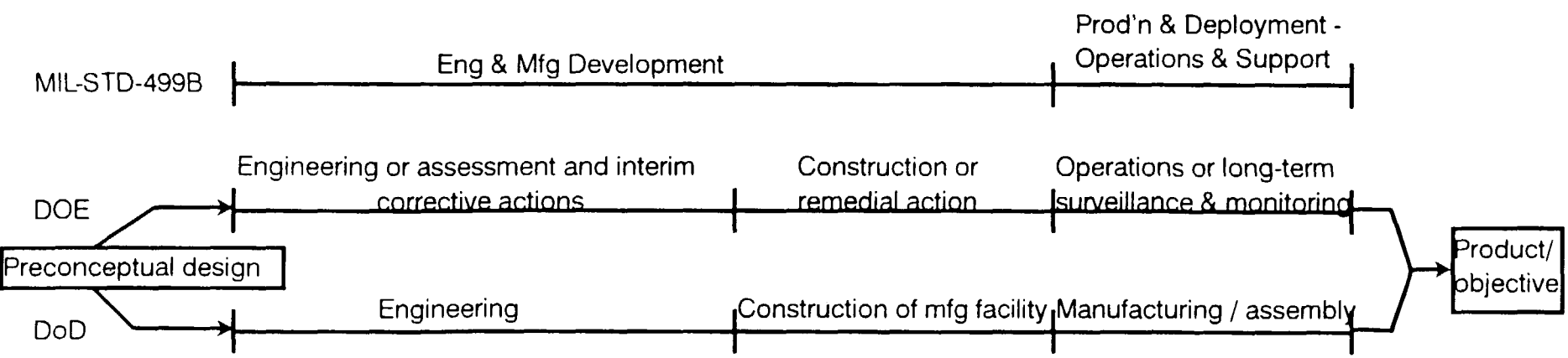
Systems engineering principles, analogous to those conveyed in MIL-STD-499B and EIA/IS-632 when judiciously applied are appropriate to the nature and scope of Department activities and projects. A single, rigid, facility and project technical management standard is not universally applied because such application would be ineffective and costly give the diverse nature of the Department's activities and projects. Although such a universal standard is not applied within the Department, project and facility life-cycle phasing and sequencing, decision requirements, and technical approach logic correlate with DoD and EIA systems engineering standards.

Attachment I: DOE vs MIL-STD-499-B Facility Life-Cycle Phasing Summary Comparison



Note: Top scale does not match bottom scale

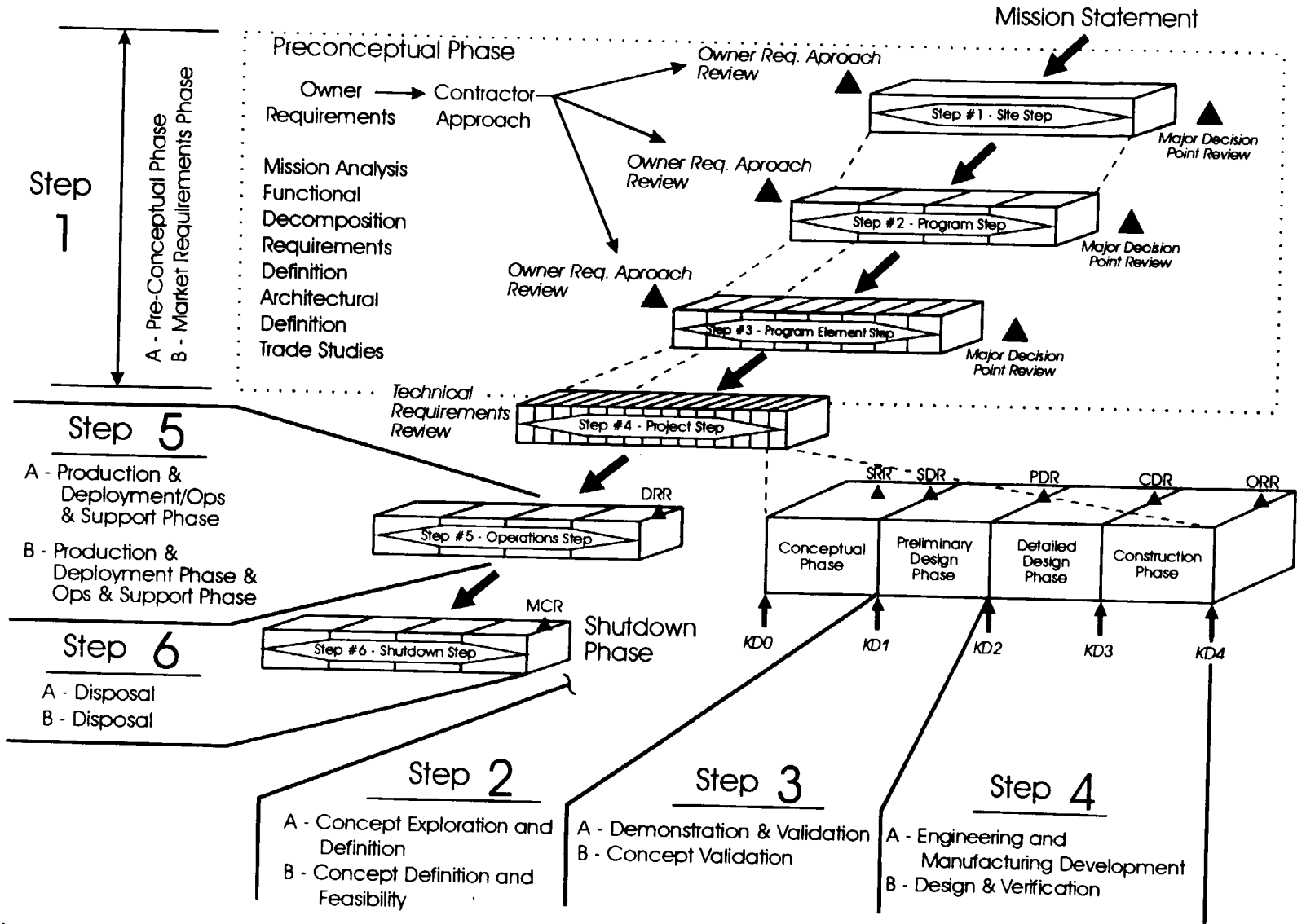
MIL-STD-499B Application to DoD (Mfg) vs DOE (environmental restoration, applied technology, capital construction, etc.)



See Attachment VI, *Typical DOE Project Phases*

Attachment II

LIFE CYCLE OF A DOE ACTIVITY
Comparison of MIL-STD 499B and EIA/IS-632 to Tank Waste Remediation System



Legend:

A - MIL-STD 499B

B - EIA/IS-632

Attachment III

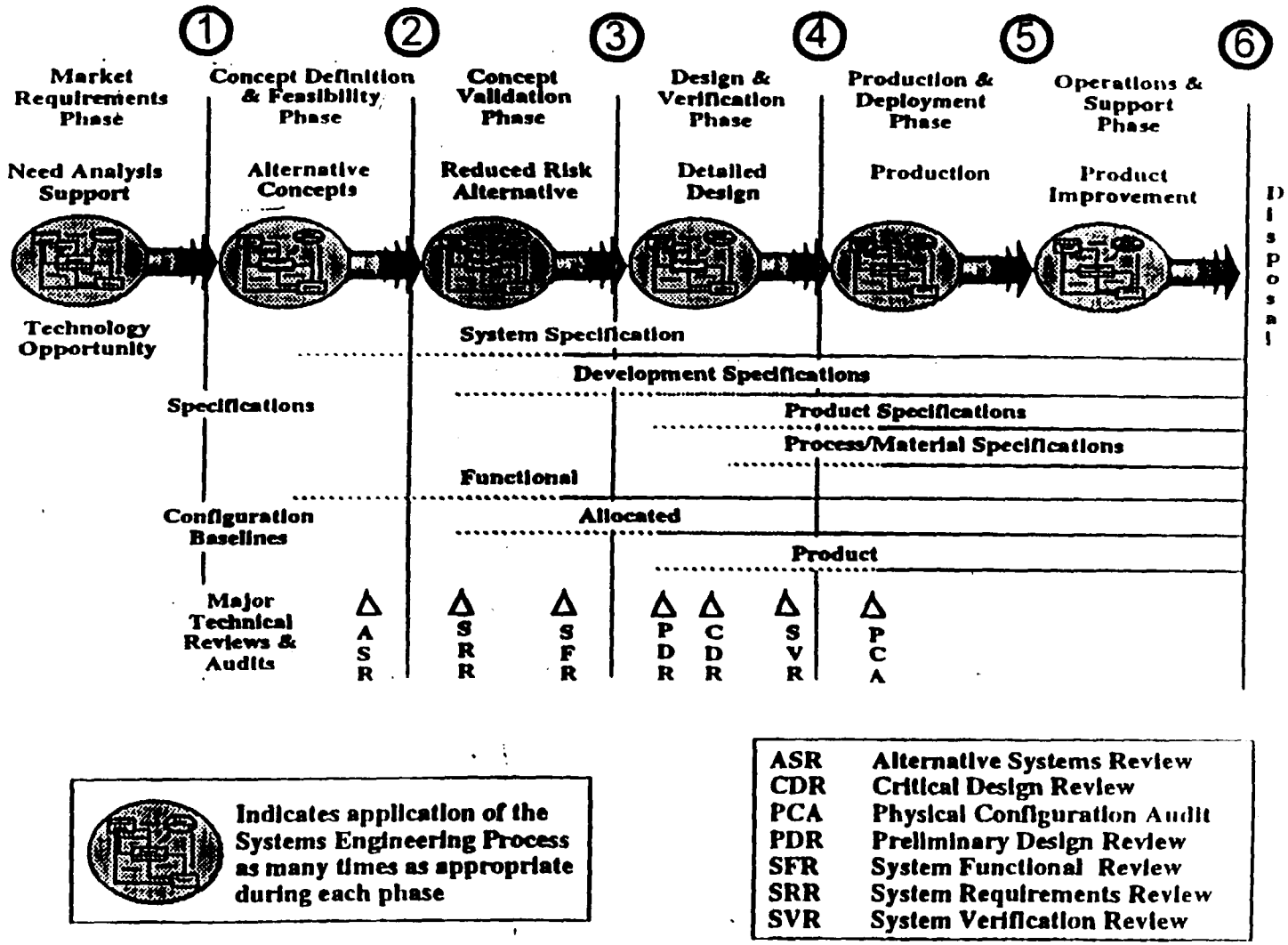


FIGURE 4. Example of a System Life Cycle

Numbering corresponds to detail 499-B/EIA-IS-632/4700 Phasing Network Diagram

Attachment IV

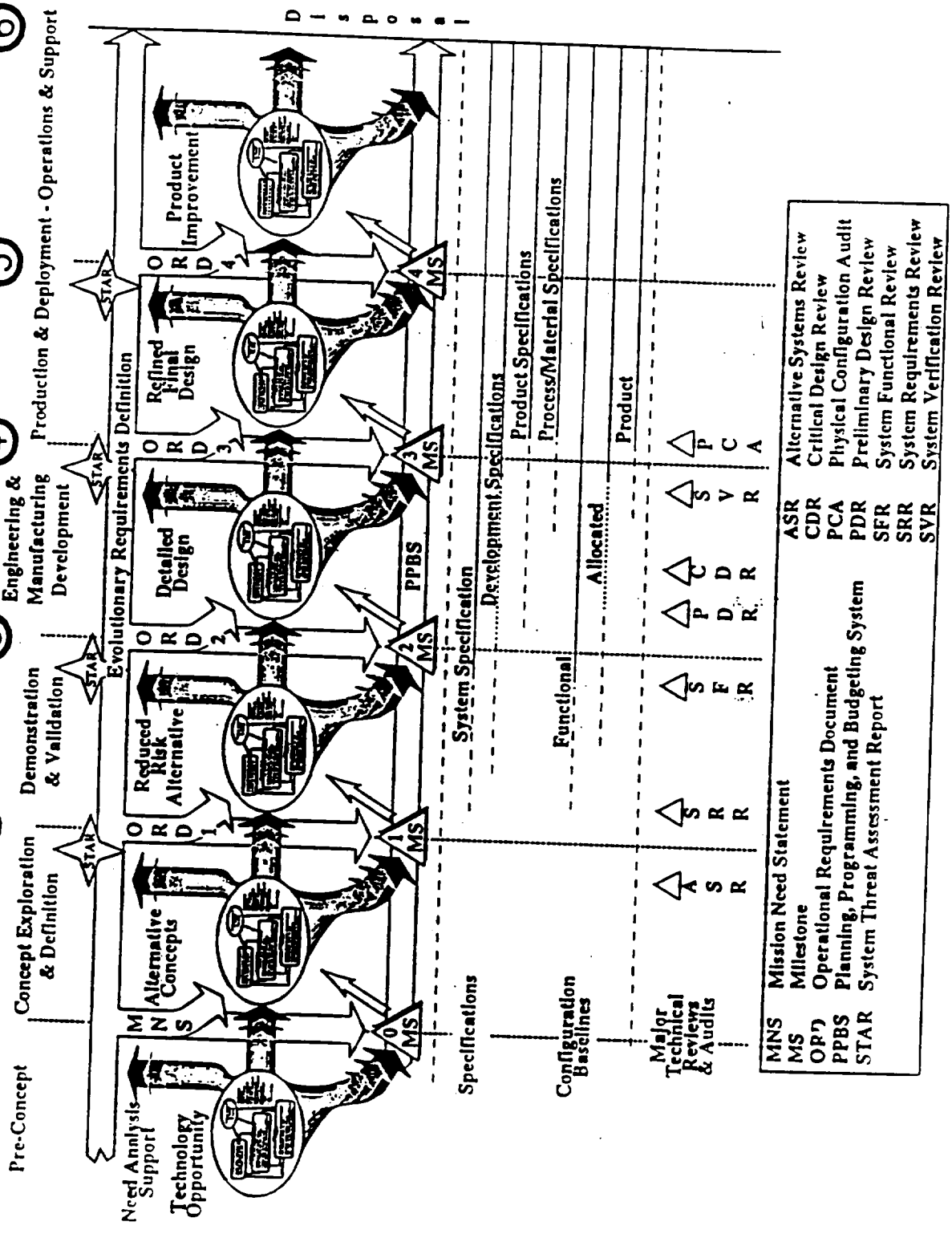
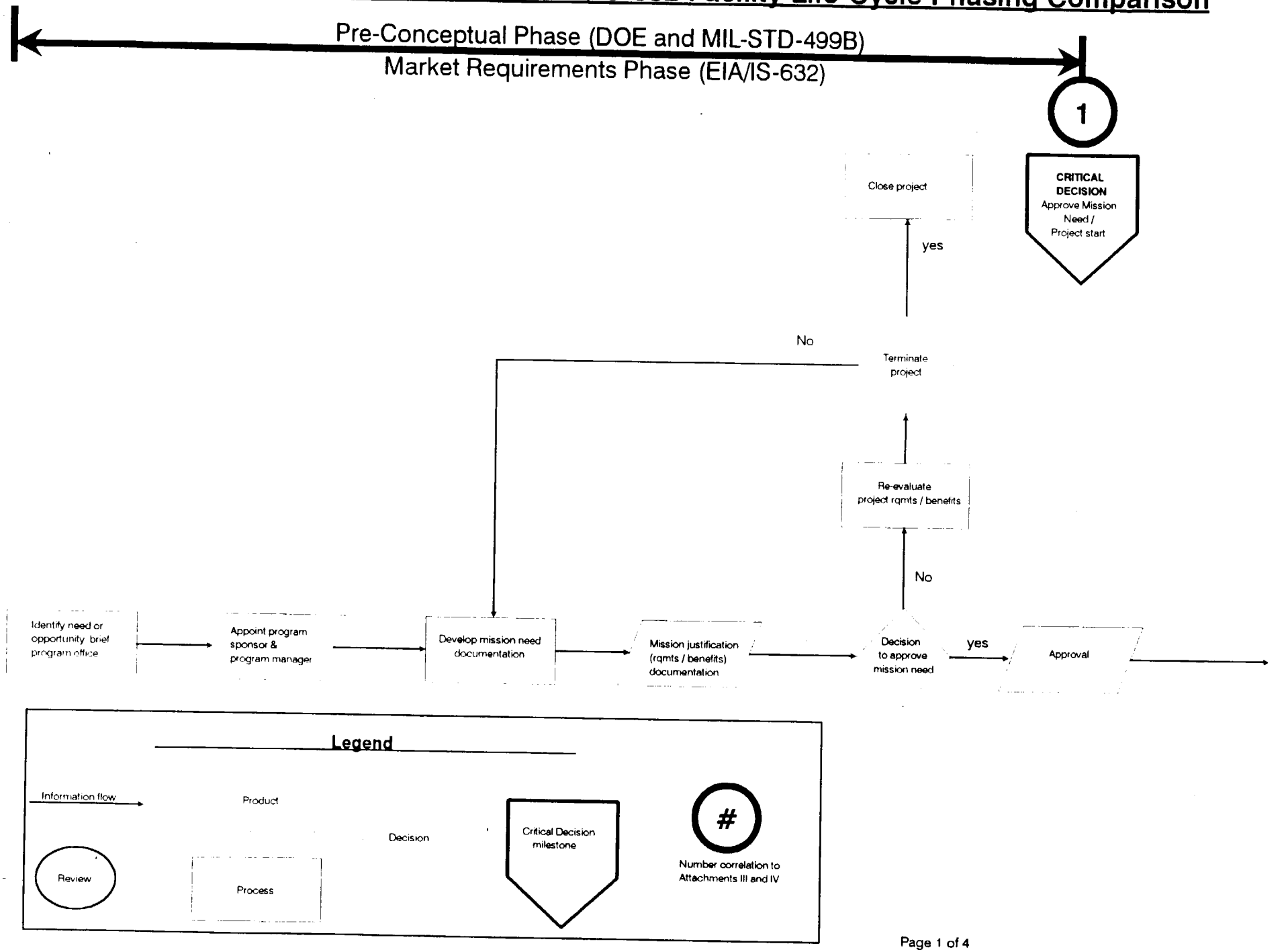


FIGURE 4. Example of a System Life Cycle

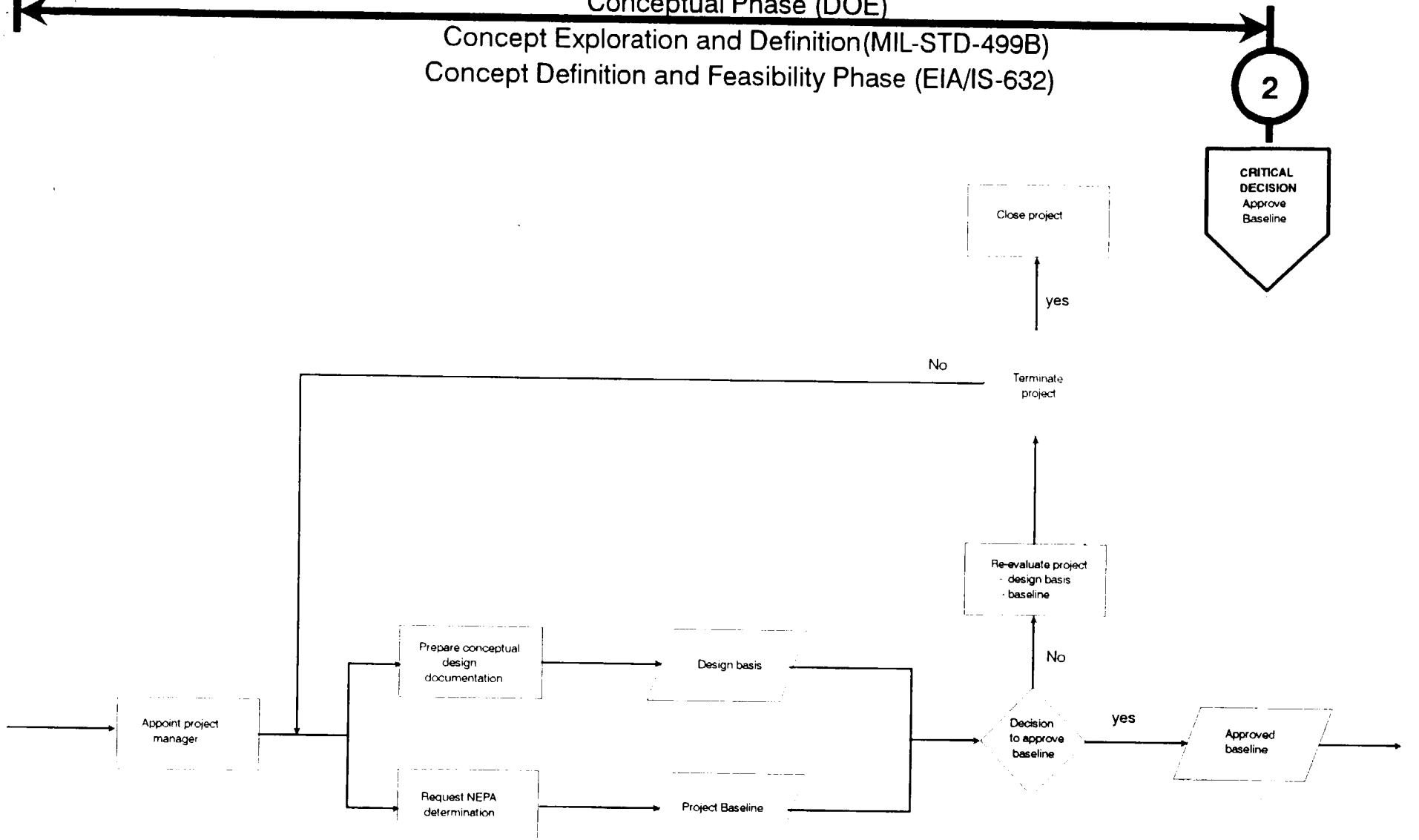
Attachment V: DOE vs MIL-STD-499B vs EIA/IS-632 Facility Life-Cycle Phasing Comparison

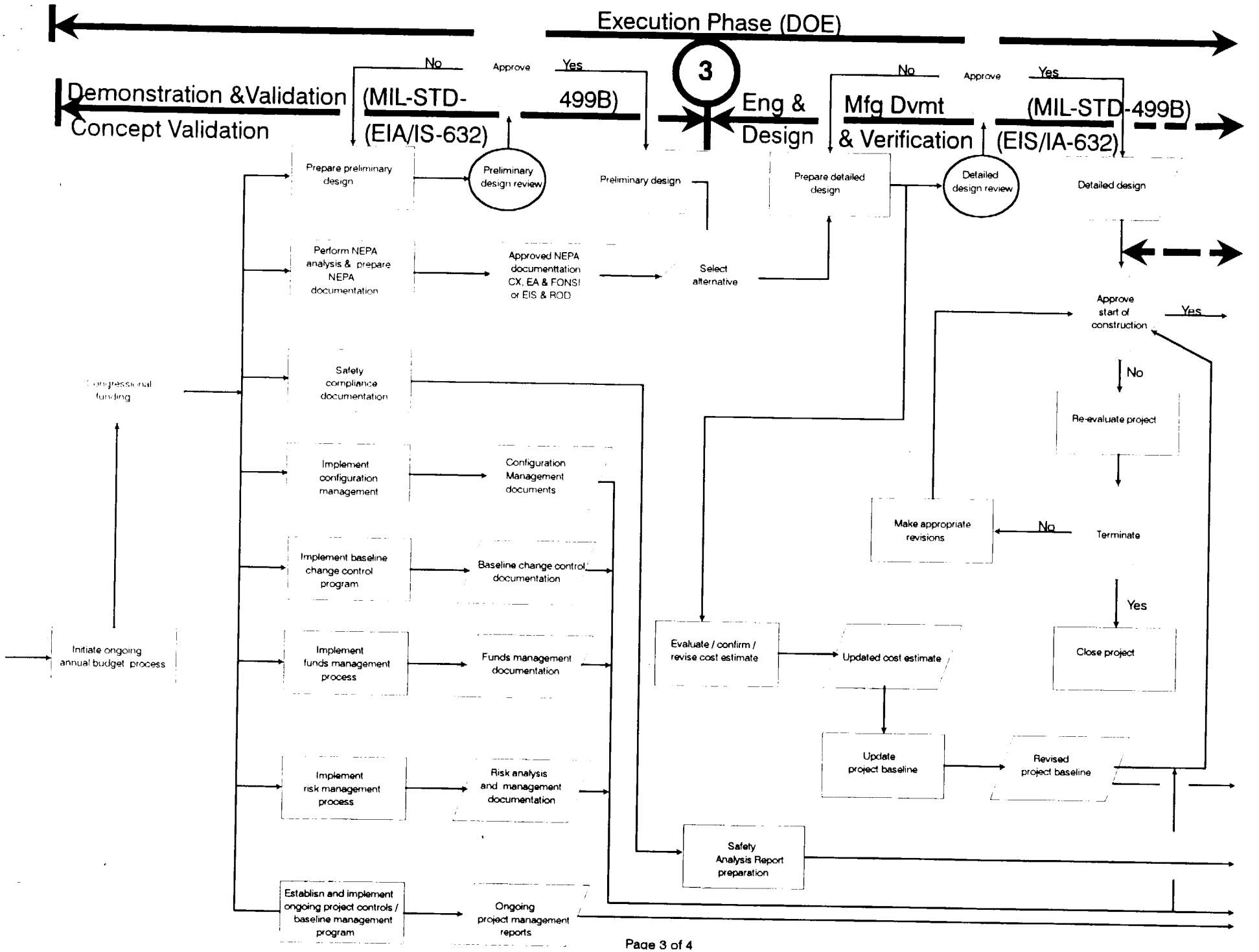


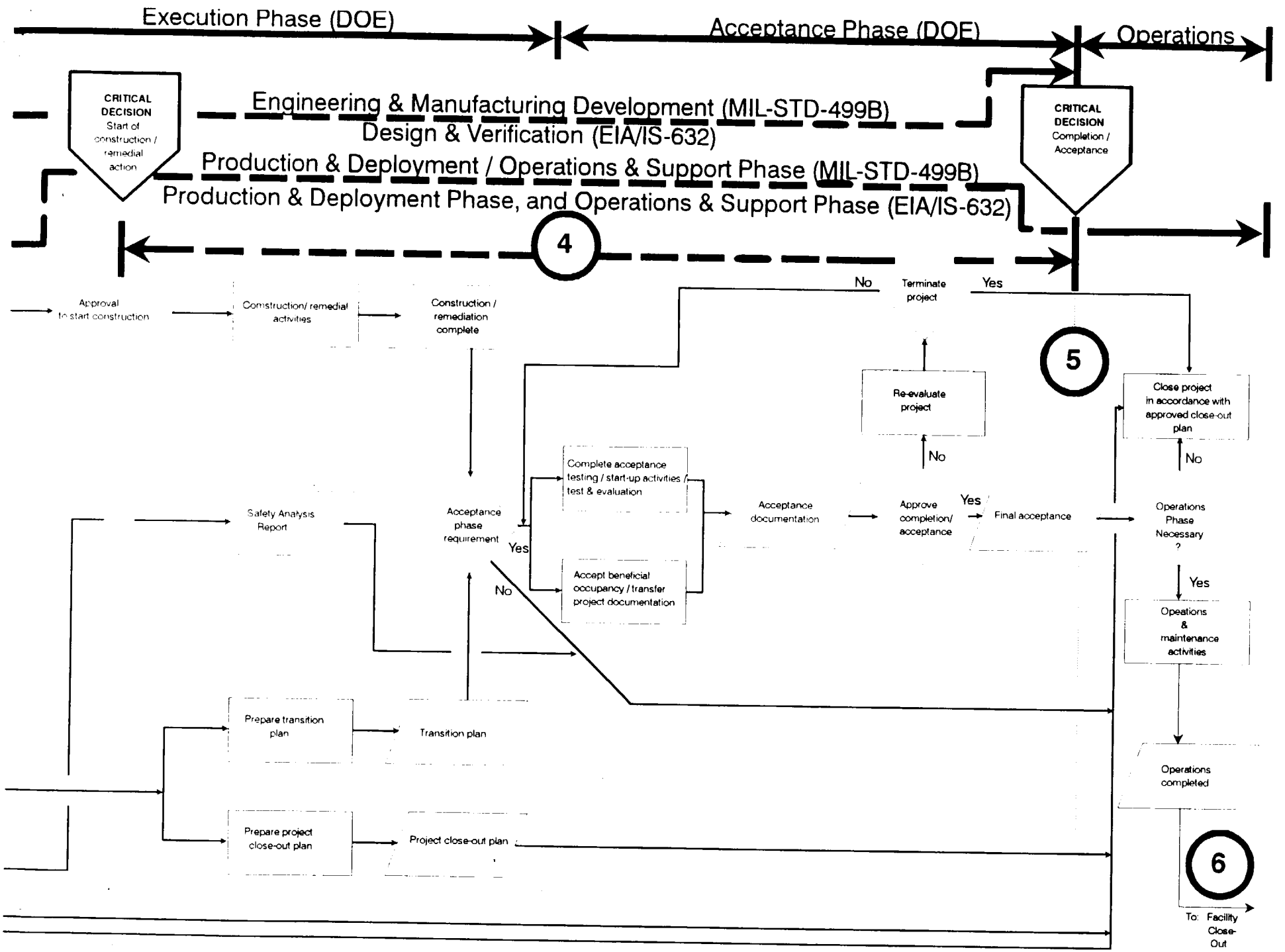
Conceptual Phase (DOE)

Concept Exploration and Definition(MIL-STD-499B)

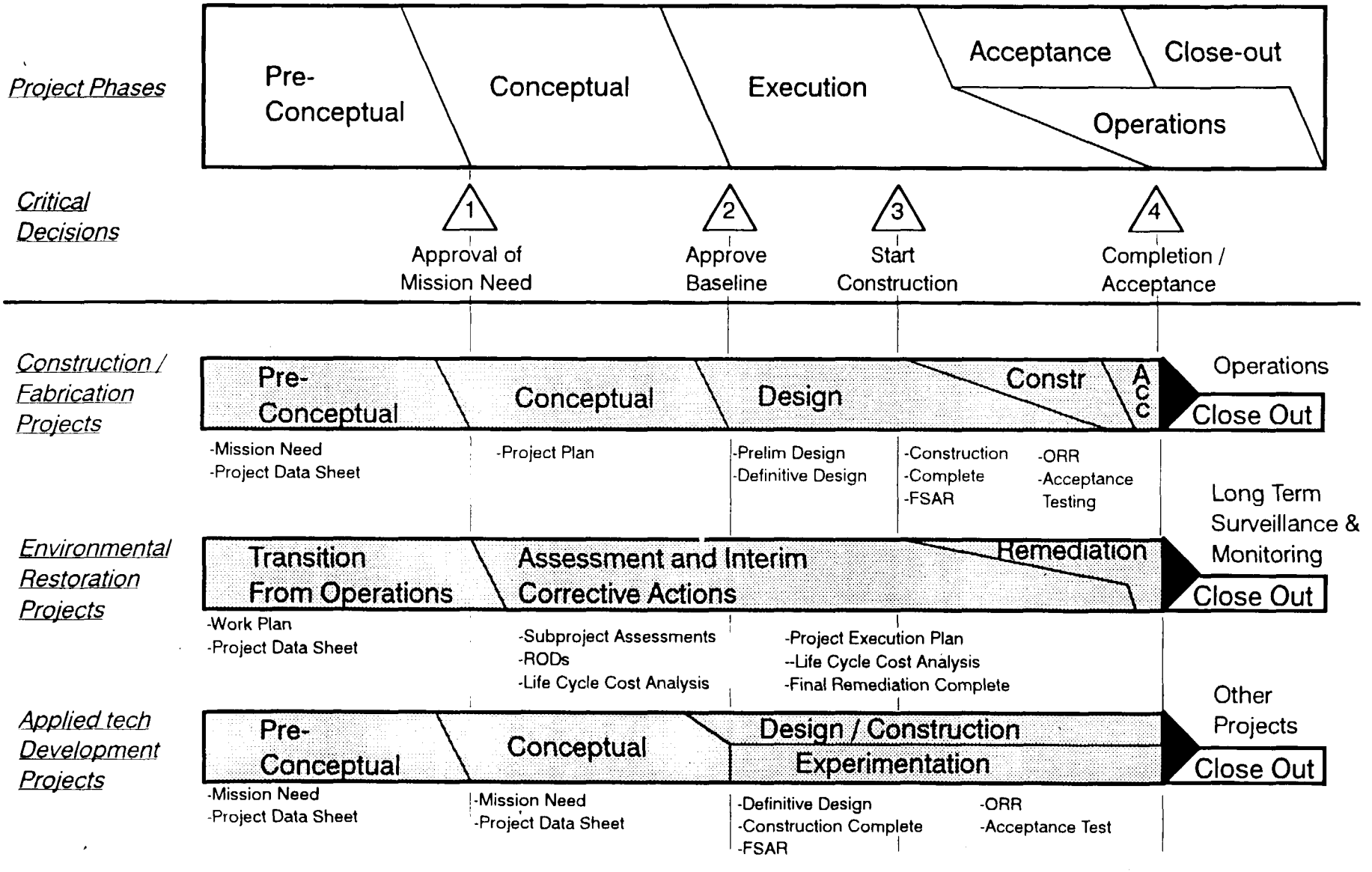
Concept Definition and Feasibility Phase (EIA/IS-632)




Execution Phase (DOE)
Demonstration &Validation
Concept Validation
(MIL-STD-
(EIA/IS-632)
No
Approve
Yes
499B)
3
Eng &
Design
Mfg Dvmt
& Verification
No
Approve
Yes
(MIL-STD-499B)
(EIS/IA-632)
Prepare preliminary design
Preliminary design review
Preliminary design
Prepare detailed design
Detailed design review
Detailed design
Perform NEPA analysis & prepare NEPA documentation
Approved NEPA documenttation CX, EA & FONSI or EIS & ROD
Select alternative
Approve start of construction
Yes
No
Safety compliance documentation
Re-evaluate project
Implement configuration management
Configuration Management documents
Make appropriate revisions
No
Terminate
Implement baseline change control program
Baseline change control documentation
Yes
Evaluate / confirm / revise cost estimate
Updated cost estimate
Close project
Initiate ongoing annual budget process
Implement funds management process
Funds management documentation
Update project baseline
Revised project baseline
Implement risk management process
Risk analysis and management documentation
Safety Analysis Report preparation
Establisn and implement ongoing project controls / baseline management program
Ongoing project management reports

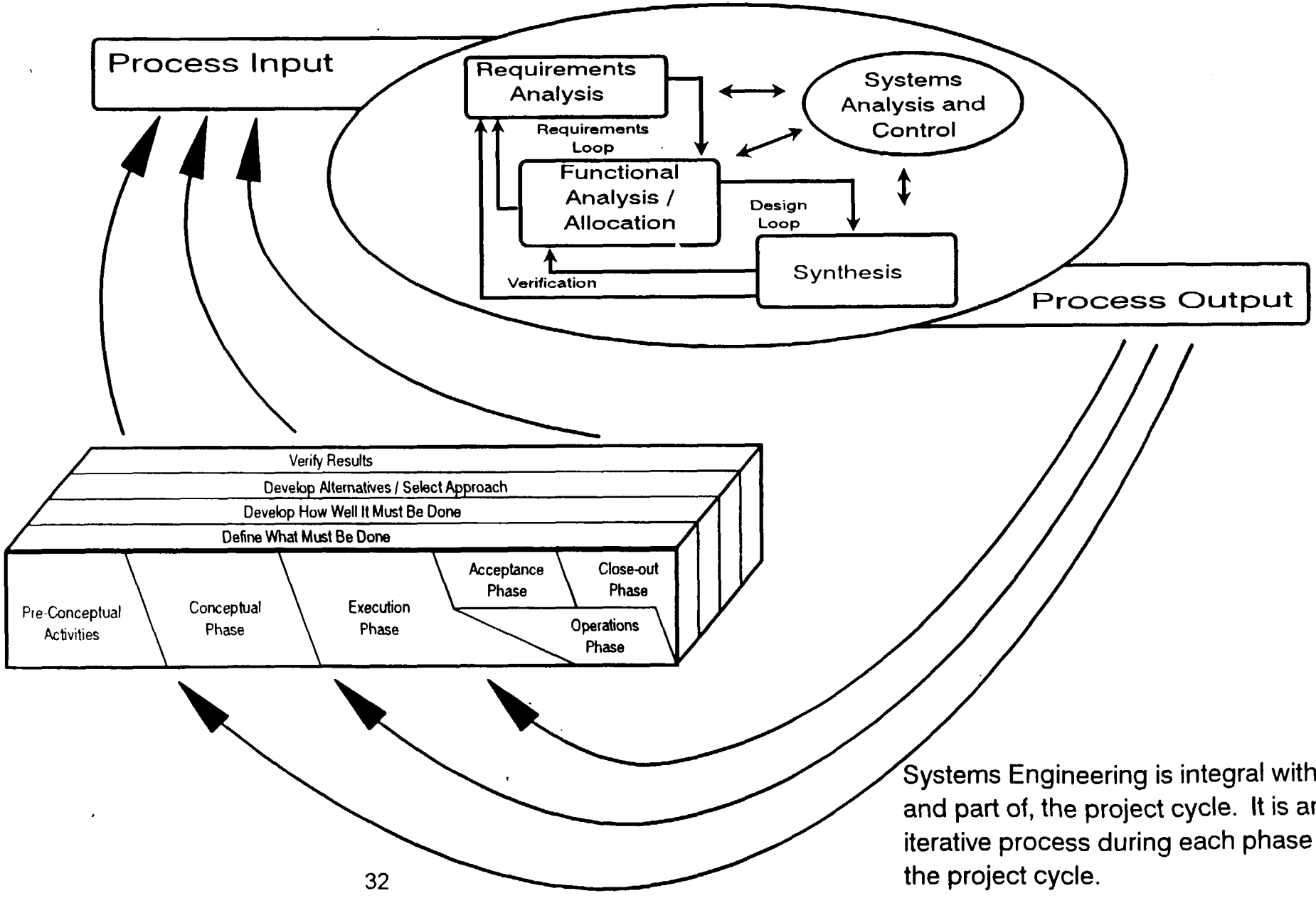

Execution Phase (DOE)
Acceptance Phase (DOE)
Operations
CRITICAL DECISION Start of construction / remedial action
CRITICAL DECISION Completion / Acceptance
Engineering & Manufacturing Development (MIL-STD-499B)
Design & Verification (EIA/IS-632)
Production & Deployment / Operations & Support Phase (MIL-STD-499B)
Production & Deployment Phase, and Operations & Support Phase (EIA/IS-632)
4
5
6
Approval to start construction
Construction/ remedial activities
Construction / remediation complete
No
Terminate project
Yes
Re-evaluate project
No
Close project in accordance with approved close-out plan
No
Complete acceptance testing / start-up activities / test & evaluation
Acceptance documentation
Approve completion/ acceptance
Yes
Final acceptance
Operations Phase Necessary ?
Yes
Safety Analysis Report
Acceptance phase requirement
Yes
No
Accept beneficial occupancy / transfer project documentation
Opeations & maintenance activities
Prepare transition plan
Transition plan
Operations completed
Prepare project close-out plan
Project close-out plan
To: Facility Close-Out

Attachment VI:TYPICAL DOE PROJECT PHASES



Notes: -The term "Construction" applies to physical execution processes beyond traditional construction operations
-No time scale is implied by this chart

Attachment VII: TYPICAL SYSTEMS ENGINEERING PROCESS



Systems Engineering is integral with, and part of, the project cycle. It is an iterative process during each phase of the project cycle.

Table 1
Detailed Requirements vs Applicability and Guide Development

Detailed Rqmt EIA/IS-632	DOE App ✓=Y,X=N	Guide Dev ✓=Y,X=N	Comments
Systems Engineering Planning			
Systems Engineering Management Plan	✓	✓	
Systems Engineering Master Schedule	✓	X	Addressed in guides covering project controls
System Engineering Detailed Schedule	✓	X	Addressed in guides covering project controls
Work Breakdown Structure	✓	X	Addressed in guides covering project controls
Functional Tasks			
Reliability and Maintainability	✓	✓	
Survivability	X	X	War time oriented hostile environment durability does not apply to DOE operations / products
Electromagnetic Compatibility and Radio Frequency Management	X	X	Sophisticated electronics and EMF interference have little if any application in DOE
Human Factors	✓	✓	
System Safety and Health Hazard	✓	✓	To be oriented toward various DOE applications such as DP, ER, R&D, and capital construction
System Security / Privacy	✓	✓	To be oriented toward various DOE applications such as DP, ER, R&D, and capital construction
Producibility	X	X	Manufacturing orientation has min DOE application

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Table 1
Detailed Requirements vs Applicability and Guide Development

Detailed Rqmt EIA/IS-632	DOE App ✓=Y,X=N	Guide Dev ✓=Y,X=N	Comments
Product support	✓	✓	To be oriented toward various DOE applications such as DP, ER, R&D, and capital construction
Test and Evaluation	✓	✓	To be oriented toward various DOE applications such as DP, ER, R&D, and capital construction
Integrated Diagnostics	✓	✓	
Transportability	✓	✓	
Infrastructure Support	✓	✓	
Other Functional Areas	✓	✓	
Leveraged Options			
Non-Developomental Items	✓	✓	
Open System Architecture	✓	✓	
Re-Use	X	X	The one-of-a-kind, non-manufactured nature of DOE products does not lend itself to re-use
Dual Use Technologies	X	X	The one-of-a-kind, non-manufactured nature of DOE products does not lend itself to re-use
Pervasive Development Considerations			
Computer resources	✓	✓	

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Table 1
Detailed Requirements vs Applicability and Guide Development

Detailed Rqmt EIA/IS-632	DOE App ✓=Y,X=N	Guide Dev ✓=Y,X=N	Comments
Prototyping	X	X	The one-of-a-kind, non-manufactured nature of DOE products does not lend itself to prototyping
Simulation	✓	✓	
Automated Tools and Digital Data	✓	✓	
System and Cost Effectiveness			
Manufacturing Analysis and Assessment	✓	✓	To be orie ıted away from manufacturing, toward DOE business lines, and renamed "Production Analysis and Assessment"
Verification Analysis and Assessment	✓	✓	
Deployment Analysis and Assessment	✓	✓	
Operational Analysis and Assessment	✓	✓	
Supportability Analysis and Assessment	✓	✓	
Training Analysis and Assessment	✓	✓	
Disposal Analysis and Assessment	✓	✓	
Environmental Analysis and Impact Assessment	✓	✓	
Life Cycle Cost Analysis and Assessment	✓	✓	
Models	✓	✓	

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Table 2: Project Managers Guides Currently under Development

Nmbr	Proposed Guide	Guide Purpose
1	Project Management Overview	To describe the process, activities, and guiding principles for planning and executing DOE project for each major phase.
2	Critical Decisions Criteria	To explain the set of factors to be addressed before deciding to proceed to the next major phase on a DOE project.
3	Engineering Trade-off Studies	To describe a methodology for evaluating technical alternatives toward achieving a project objecitve. Requirements Analysis and Functional Analysis / Allocation processes will be described.
4	Reliability and Maintainability Planning and Control	To describe methodologies, tools, and techniques to effectively design, build, and operate facilities and engineered systems.
5	Test and Evaluation	To describe a technique for planning and managing the verification of attaining project objectives.
6	Performance Analysis and Reporting	To describe available data and information tools with associated descriptions and discussions of practical applicability for measurement of contract and overall project performance during project execution. Subtopics are; work scope, schedule, cost, funds, and contingency.
7	Project Risk Management	To describe a methodology for evaluating project factors that may impact the ability to execute a project baseline. Includes mitigating techniques correlated with project factors.
8	Baseline Development	To describe a methodology for planning and defining work methods and activities needed to accomplish project objectives during the project planning phase. A methodology for allocating and controlling needed resources. Subtopics are; work scope planning, scheduling, cost estimating, time phased budget, and contingency.
9	Baseline Management	To describe a methodology for maintaining baseline integrity during the project execution phase Including; managing the redefinition and replanning of project objectives and plans. Subtopics include; change control, work authorization, and cost collection.

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Table 2: Project Managers Guides Currently under Development

Nmbr	Proposed Guide	Guide Purpose
10	Project Execution and Engineering Management Planning	To describe a set of engineering and management planning considerations to be used for developing approaches to managing a project.

Table 3: Proposed Project Managers Guide Topics

Nmbr	Proposed Guide	Guide Purpose
1	Value Engineering	To describe methodologies and factors (ie. construction impacts, operations efficiencies, maintenance impacts, downtime costs, etc...) to consider in assessment of the value of alternative designs.
2	Configuration and Data Management	To describe physical configuration baseline maintenance and control elements, processes, factors, and management methods. Also, to define and classify the various data types and methods for effective management of each of the data types relative to purpose.
3	Interface Management	To describe methods and factors to consider for continuity and compatibility of design components within and external to each discipline area.
4	Program / Project Relationships	To describe program and project management functions and interfaces including a model MOU.
5	Project Reviews	To describe the relevance, purpose and definition of each of the various types of project reviews.
6	Baseline Development	To describe the various baseline development methods and related applications.
7	Quality Assurance / Quality Control (QA / QC)	To describe methods for applying quality assurance principles to ensure successful results.
8	Project Authorizations	To describe metjhods for effective release of work under changing conditions with discussion of balanced controls.
9	Budget Cycles / Planning Cycles	To facilitate effective fiscal year budget planning and management within overall project baselines.

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Table 3: Proposed Project Managers Guide Topics

Nmbr	Proposed Guide	Guide Purpose
10	Contracting Options / Acquisition Resource Planning / Application of Performance Measures	To describe contracting strategy and methods for selecting a contractor mix that considers scope division, interfaces between contracts, and contract types. This inlcudes development and utilization of Responsibility Assignment Matrices (RAM's). This guide also describes the benefits, pitfalls, factors to consider, alternative bonus / penalty fee strategies, and includes discussion of practical applications of incentive fee contracting in the context of effective applictaion of performance measures.
11	Environmental Interfaces	To describe environmental factors considerations and processes to integrate with project planning and execution.
12	Public Involvement	To describe the methods to effectively include the public in project planning and execution.
13	Safety Analysis	To describe methods and factors to consider in determination and minimization of safety hazards in facility design and project execution
14	Site Development Planning	To describe factors for consideration and methods that can be employed in defining and locating facilities, and implementing projects on a DOE site.
15	Waste Minimization / Pollution Prevention	To describe methods and factors to consider in identification and mitigation of excessive waste creation and pollution production.
16	Project Termination	To describe the factors to consider for closeout or early termination .
17	Human Factors Engineering	To describe the methods and factors to consider in the effective desing of human and non-human interfaces.
18	Automated Tools	To describe methods and factors to consider in determination of whether or not application of automated tools is appropriate, and types of tools to be applied.

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Table 3: Proposed Project Managers Guide Topics

Nmbr	Proposed Guide	Guide Purpose
19	Systems Analysis and Assessment	To describe methods and factors to consider in: 1) Production Analysis and Assessment; determination of production efficiency and identificaton of elements on which to focus for improvement, 2) Verification Analysis and Assessment; determination of the degree to which end-items have met their intended purposes, 3) Operational Analysis and Assessment; determination of operations efficiency and identificaton of elements on which to focus for improvement, 4) Disposal Analysis and Assessment; determination of the most appropriate methods for disposal of waste and obsolete products or facilities, and 5) Life Cycle Cost Analysis and Assessment; determination of facility costs from preliminmary design through closure and disposal.
20	Models and Simulation	To describe methods and factors to consider in determination of whether or not application of models is appropriate, and the types of models (ie. prototypes, bench tests, mach-ups, computer simulations, etc...) to be applied as design aids or for collection of information regarding degree to which design can be expected to meet performance requirements or for design impacts on and interactions with practical environment.

Table 4
EIA/IS-632 Technical Review Requirements Applicable to DOE

Tech Review Requirement in EIA/IS-632	Specifically addressed Mgmt Overview Guide ✓=Yes, X=No	Addressed In Future Guide(s) ✓=Yes, X=No	Comments
Technical Reviews			This topic will be a primary subject of focus in a proposed guide dedicated to project reviews. Specific suboordinate topics as listed below will be addressed under this topic.
Alternative System Review (ASR)	✓	✓	
System Requirements Review (SRR)	X	✓	
System Functional Review (SFR)	X	✓	
Preliminary Design Review (PDR)	✓	✓	
System Verification Review (SVR)	X	✓	
Physical Configuration Audit (PCA)	X	✓	
Subsystem Reviews	X	✓	This topic will be specifically addressed in a proposed guide dedicated to project reviews. The suboordinate topics below will be also be addressed in this section as general topics, and not under the "Subsystem" heading.
Software Specification Review (SSR)	X	✓	

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Table 4
EIA/IS-632 Technical Review Requirements Applicable to DOE

Tech Review Requirement in EIA/IS-632	Specifically addressed Mgmt Overview Guide ✓=Yes, X=No	Addressed In Future Guide(s) ✓=Yes, X=No	Comments
Preliminary Design Review (PDR)	✓	✓	
Critical Design Review (CDR)	✓	✓	
Test Readiness Review (TRR)	X	✓	
Functional Configuration Audit (FCA)	X	✓	
Physical Configuration Audit (PCA)	X	✓	
Functional Reviews	X	✓	Will be included in a proposed project reviews guide.
Interim System Reviews	X	✓	Will be included in the proposed project reviews guide.
Review Responsibilities	✓	X	Responsibilities will be addressed in a proposed project reviews guide and will not be the primary subject of any guideline document focus.

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Project Management Good Practices Guides
TOP 10 PRIORITIES