



The project execution plan (PEP) is the Department's core document for management of capital asset projects which are subject to DOE Order 413.3B.



Project Execution Plans DOE G 413.3-15A

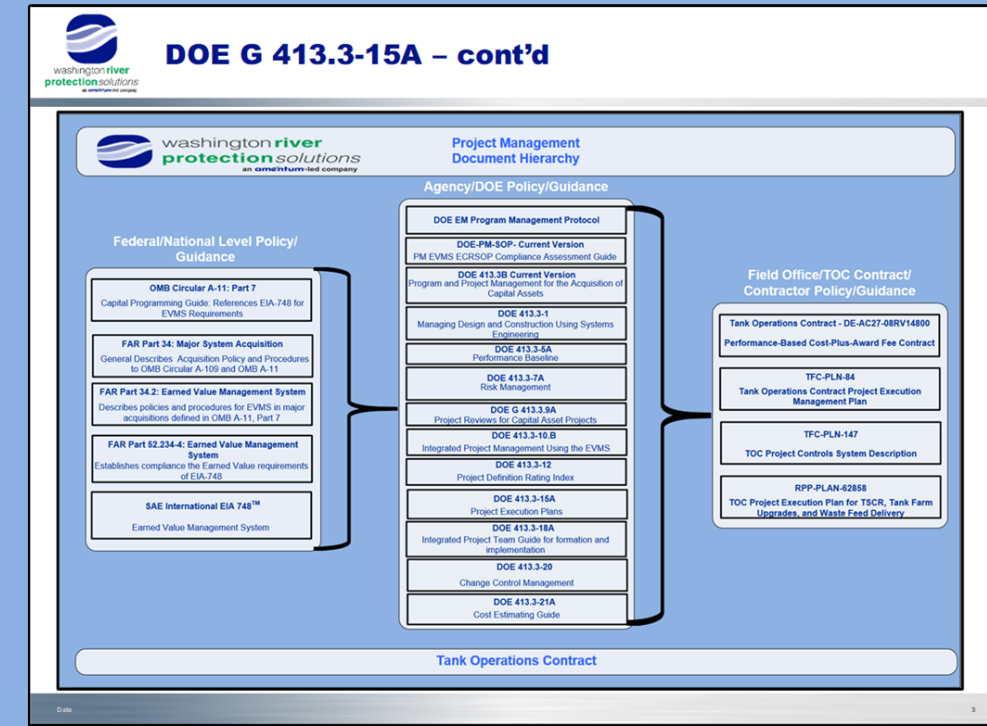
Project Management Programs

December 2022




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The PEP serves as the main communication vehicle to ensure stakeholders are aware of project objectives and how they will be accomplished.



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Forward

This Department of Energy guide is **for use by all Department of Energy (DOE) elements and provides acceptable, but not mandatory, approaches for implementing the project execution plan requirements in DOE Order 413.3B.** DOE Guides, part of the DOE Directives System, provide non-mandatory means for complying with requirements in DOE Directives or Technical Standards **but do not introduce requirements.** Send citations of errors, omissions, ambiguities, and contradictions found in this guide to PMpolicy@hq.doe.gov.



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INTRODUCTION

The project execution plan (PEP) is the Department's core document for management of capital asset projects which are subject to DOE Order 413.3B. It is a **living document** that **establishes:**

- **the policies and**
- **procedures to be followed in order to manage and control project planning,**
- **initiation,**
- **definition,**
- **execution, and transition/closeout,** and integrates outcomes and outputs from all project planning processes into a formally approved document.

The PEP includes a high-level summary of how the project is to be accomplished and defines:

- **the roles and responsibilities,**
- **resource requirements, staffing, standards, performance baseline, technical considerations, schedule, cost, risk management,** and
- **other management and oversight processes.**



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- The PEP serves as the main communication vehicle **to ensure stakeholders are aware of project objectives and how they will be accomplished.**
- It is also a **resource document** after project completion **for historical purposes.**
- **It is the primary agreement between the project management executive (PME), the project owner, and the federal project director (FPD) for managing and completing the project to accomplish mission objectives.**
- Accordingly, the **PEP is a federal document. While a contractor may contribute to developing the PEP, the final document is a federal product.**
- **The PEP is closely linked and is often an attachment to the contract management plan (CMP),** which is the key document guiding the coordinated efforts of the contract management team (project managers, program managers, attorneys, financial and procurement officials, etc.) throughout the term of the contract.
- **The PEP may serve as a summary document** with references to more detailed documents.



Project objectives are derived from the mission need statement, and an integrated project team assists in development of the PEP.



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This guide is for the benefit of the FPD, who is designated by the PME to manage the project and incorporate contractor input, as appropriate.

Integrated project teams, program managers (if applicable), program offices, PMEs, and contractor project managers **may also benefit from the suggestions in this guide.**



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PLAN DEVELOPMENT

Project objectives are derived from the mission need statement, and an integrated project team assists in development of the PEP. Updates are common as a project moves through Critical Decision (CD) stages and typically follow implementation of significant changes. **The CE or PME approves a version of the plan known as a preliminary project execution plan (PPEP) at CD-1.** The CE or PME approves a more complete and mature version of the PPEP at CD-2 referred to as the PEP.

Prior to CD-1. The **preliminary PEP is a critical part of the CD-1 approval package.** Depending upon the type of project and team experience, the level of detail in the PEP may vary from greater **detail for current or near term activities** (i.e., the design phase systems, processes, procedures and personnel) to less detail for future activities concerning procurement and construction activities to even **less detail regarding testing, start-up and operational transition.**



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Prior to CD-2 or Baseline Change Proposal (BCP). **Update the PEP as part of the CD-2 or BCP approval package resulting from a performance baseline deviation.** At this point, the plan should contain greater depth and breadth of information, **detailed enough to bound the systems, processes, procedures and personnel and to support a well-defined scope, resource loaded schedule, definitive cost estimate, and defined key performance parameters for project execution.** If any systems, processes, procedures and personnel requirements are yet to be fully defined (e.g., testing, start-up, or operation transition), **update the plan to clearly identify relevant assumptions/constraints and associated risks.**

PEP Updates. The plan is a living document. **Update it to describe changes to current and future project systems, processes and procedures (e.g. integrating safety into the design process), personnel, approved performance baseline, or to include changes resulting from a post-construction contract award.** Define the process for PEP configuration control, including definitions of minor/major revisions and their associated approval authorities. **Make each PEP update available to all project stakeholders.**

Include life cycle costs and assumed durations for each major lifecycle phase of the capital assets associated with the project.



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SUGGESTED PLAN CONTENT

The following sections provide a recommended format and suggested minimum content of the PEP. **Align definitions for terminology used in the PEP with the acquisition and project management Glossary of Terms Handbook.** Additionally, **write the PEP to stand on its own** and summarize supporting or reference documents only to the extent required to make it complete and readable. **Provide references for citation of source and refer to or summarize, rather than attach,** constituent management plans.

Cover Page and Signature Page

Include on the cover page the **title of the document, document control number, project name, project number, Project Assessment & Reporting System (PARS) number, Department of Energy program, site name, document date, restrictions or classification (as applicable), and any appropriate disclaimers.** The cover pages provide critical reference information on the project.

Include on the signature page the project name and number; site name; date; document control number; restrictions or classification; signature blocks for FPD, PME, project owner, and HQ program officers; signature block for any other reviewers and concurrences; and program office point of contact. **The signature page documents approval of the PEP.** Re-accomplish the signature page **with each revision of the PEP.**



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Revisions Page

Capture all revision numbers and associated dates along with the date the document was approved and a description of the changes. **Assign a single individual responsible for version control,** and mark each revision with a unique identifier such as a document control number.

Table of Contents

Include lists of tables and figures.

Acronyms List

Include acronyms used in the PEP and their definitions.

Introduction

State the purpose and organization of the plan. Include major sections to describe project background, justification of mission need, background on selecting the alternative, and project description.



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Project Background

Provide a brief history/background of the project **identifying important chronological events and key drivers, including external drivers** such as Congressional or Presidential mandates. State the project's purpose and major objectives and include a clear, concise statement of what the project will accomplish and the **time frame required.**


Mission Need Justification

Summarize the mission need statement.

Alternatives Analysis and Selection

Briefly **summarize the alternative analyses** and selection associated with accomplishing the mission and associated key parameters. Describe how the alternative selected forms a cohesive project that addresses part of or the entire mission need. **Include life cycle costs** and assumed durations for each major lifecycle phase of the capital assets associated with the project (i.e., acquisition, operations, decommissioning, and disposition). **State key applicable assumptions.** DOE Guide 413.3-22, Analysis of Alternatives, provides guidance on this topic.


Describe the overall project management organization and summarize the main roles and responsibilities of key project team members.



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Project Description
Provide a summary-level description of the project, including but not limited to elements such as:


- Project vision (e.g., concept of operations);
- Major project deliverables or outcomes (e.g., system components and their functions);
- Major project assumptions and uncertainties;
- Project requirements and scope, such as gross square footage of main and ancillary facilities, building type, number of stories, and Anticipated Asset Information Module (AAIM) identifier in the Facilities Information Management System (FIMS) number, if applicable;
- Major interfaces with other projects, facilities, systems, or sites;
- Required site development, permits and licensing;
- Major environmental health and safety considerations, assumptions, and uncertainties related to safety;
- Major safeguards and security considerations, uncertainties, and assumptions; and
- Key stakeholders.



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Management Structure and Integrated Project Team
Describe the overall project management organization and summarize the main roles and responsibilities of key project team members. Identify the PME along with rationale for any delegations of PME duties. Include an organization chart that identifies interfaces and reporting relationships. Specifically, describe the roles, responsibilities and accountabilities between the project owner, the project's line management organizational elements, including the FPD and other members of the IPT, and support and staff organizations, as detailed in the introduction to DOE Order 413.3B, Appendix B. Reference or attach the IPT charter.

Funding Profile
Include the necessary resources to include funding profile, staffing and other major requirements. Outline time-phased funding profile over the course of the project. Projects may receive funding over multiple years in accordance with the Department's annual budget cycle with Congress. Ensure the cumulative time-phased budget requirements equal the total project cost (TPC). Include a project funding summary table by fiscal year and budget control point, if applicable, to reflect prior year and current year appropriations, budget year requests, and future year need. Include breakout of design funds and pre-CD-2 requirements for long-lead procurement, if applicable.




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Staffing
Provide a time-phased summary of the federal staffing requirement by area of technical specialty. Depending on the complexity of the project, a separate human resources and staffing plan may be appropriate. Refer to DOE Guide 413.3-19, Staffing Guide for Project Management, for additional details.

Identification of Standards
Using a template or a similar table, identify the DOE directive, handbook, standard, or consensus code the project intends to follow for each project management deliverable or process. Indicate when the IPT intends to or has developed its own procedure.

Tailoring Strategy
Document how the requirements of DOE Order 413.3B will be accomplished if the project team chooses to use a tailored application of project management and project controls. Tailoring is a flexible approach that allows appropriate levels of effort or analytical rigor to be used in fulfilling requirements of the Order. Tailoring does not mean waiving requirements, nor does it suggest the omission of essential elements in the acquisition process. Instead, tailoring means addressing requirements through equivalent means in order to prudently streamline project management practices and avoid unnecessary cost. The key to successful tailoring is good documentation of both the specific tailoring actions and the rationale for those actions.


Reviews may not be waived or omitted.



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Substituting Documents.
There may be cases where front end planning processes result in analysis or the development of decision documents that can reasonably substitute for required project documents. (e.g., a regulatory agreement may adequately define mission need) In these cases, the program office or PME may choose to substitute a document to satisfy an order requirement. If the substitution does not fully satisfy the order requirements, describe in the tailoring plan which additional documents will.


Graded Approach.
Nuclear safety requirements use a "graded approach" vs. tailoring to implement nuclear safety management requirements as prescribed in 10 CFR Part 830, Nuclear Safety Management. Similar to tailoring, a graded approach for nuclear safety requirements means that the level of effort or detail in safety basis requirements and documentation may be reduced while still satisfying requirements. For projects involving existing missions or assets, a graded approach may be more appropriate than for those involving new missions or capabilities. For example, substituting an equivalent document or addressing multiple requirements in a single document may be acceptable. For project reviews, a graded approach could involve fewer technical reviewers or reduced lines of inquiry. In any case, nuclear safety management requirements may not be graded to zero. Use of a graded approach to document nuclear facility construction is addressed by DOE Guide 413.3-2, Quality Assurance Guide for Project Management, and DOE STD 1189, Integration of Safety Into the Design Process.



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Portfolio of Projects to Facilitate a Single CD or AS.
In addition to consolidating or phasing CDs, program offices may choose to bundle projects to streamline the process for complying with DOE O 413.3B requirements. Program offices can create a portfolio of projects to streamline the process for preparing preliminary project documents and eliminate redundancy. Describe in the tailoring strategy section of the individual PEPs how the project fits into the portfolio, which documents and processes it will share with other projects in the portfolio, and any interdependencies between the projects that would impact adherence to DOE O 413.3B requirements.

Adjusting the Scope of IPRs and EIRs.
The project team may propose adjustments to the review schedule outlined in DOE O 413.3B to reduce redundant reviews or optimize timing of reviews. Reviews may not be waived or omitted, however the content of the reviews may be developed using a combination of analysis efforts or site visits that help streamline the review process. Tailoring of reviews must be coordinated with the reviewing authorities and documented in advance in the tailoring strategy. The intent of tailoring of reviews is not to minimize reviews in execution, but to thoughtfully plan and schedule required reviews to optimize scheduling and review cost. Reflect the tailored review schedule in the project Integrated Master Schedule and the tailoring plan.

Provide a high level summary of the project's performance baseline technical scope (i.e. requirements), key performance parameters, cost, and schedule.

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Delegation of PME Authority.
Tailoring may include delegating PME authority at various points in the project in accordance with Table 1 of DOE Order 413.3B. When PME authority is planned to be delegated below the thresholds in Table 1, describe the timing, new thresholds, and rationale in the tailoring strategy. If a decision to delegate PME authority is made during project execution, document by updating the tailoring strategy in the PEP.

Acquisition Approach
 Describe the acquisition approach that will be used to execute the project scope, including contract type(s), planned long lead procurements, expected acquisition timelines, and contract management strategies. Discuss long lead procurements, providing a justification for and description of the scope of the long lead procurement, and an estimate for when the project intends to receive CD-3A, if applicable.

Performance Baseline
Provide a high level summary of the project's performance baseline to include technical scope (i.e. requirements), key performance parameters, cost, and schedule. The project performance baseline evolves throughout the life cycle of the project, so the baseline elements will be refined as front end planning and design progress. DOE Guide 413.3-5A, Performance Baseline provides specific detail on developing a performance baseline throughout the planning and design portion of the project lifecycle.

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The PEP may be the definitive documentation of the integrated performance baseline. Alternatively, at a minimum, summarize the elements of the baseline and refer to more detailed documents for each component (i.e. technical scope, key performance parameters, cost, and schedule). In either case, place the documents that formally establish the project baseline under configuration control after the baseline is established and approved at CD-2. Clearly state which documents formally establish the performance baseline along with their version numbers and/or dates of publication.

Provide estimates for cost and schedule risk and uncertainty and describe how they were determined for the baseline. When appropriate, include a risk and uncertainty analysis with results displayed as a range of potential costs and CD-4 dates or as a point estimate with the confidence levels used to determine them. Clearly delineate federal contingency as the portion of the budget that is set aside to mitigate risks within the project scope but outside the performance measurement baseline (PMB). Contingency may be included both within the total estimated and other project costs.

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Scope Baseline
Summarize the scope baseline to provide a documented description of the scope, to include technical and programmatic descriptions, normally derived from requirements and other technical documents. Include performance parameters and deliverables and define key features of the project, including details of the system for process facilities. When appropriate, describe changes from the previous scope baseline. Refer to the PM Statement of Work and Key Performance Parameters Handbook and DOE Guide 413.3-5A, Performance Baseline Guide for additional information.

Schedule Baseline
Summarize the project schedule baseline to establish the framework for project planning and execution. Describe how the project will develop and maintain project schedules in accordance with the NDIA Planning & Scheduling Excellence Guide (PASEG), GAO Schedule Assessment Guide (GAO-16-89G), as well as DOE Guide 413.3-5A, Performance Baseline and DOE Guide 413.3-10A, Earned Value Management System. Include in the schedule baseline for a project submitted for approval at CD-2 an overall project summary level schedule. Contents may include but are not limited to the following:

- Key activities/milestones, including Critical Decision approval dates and other important milestones such as major reviews;
- All major project deliverables, reports, and studies;

Summarize the cost baseline to build to the TPC estimate developed from the technical, programmatic and schedule characteristics

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- Defense Nuclear Facilities Safety Board deliverables;
- Chief of Nuclear Safety (Department of Energy) or Chief Defense Nuclear Safety (NNSA) review and approval in the Level 1 milestone schedule;
- Major cleanup agreement milestones, regulatory milestones or actions and completion of projects and tasks on the critical path;
- Government-furnished equipment, information and materials; and,
- External dependencies.

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Cost Baseline
Summarize the cost baseline to build to the TPC estimate developed from the technical, programmatic and schedule characteristics described above. It is established at CD-2 and revised in accordance with the project's change control procedures. Include in the cost baseline all scope organized by a product oriented work breakdown structure (WBS) (refer to DOE-PM-HBK-02 2012, WBS Handbook), and an explanation of significant ground rules and assumptions for preparing the cost estimate. Clearly delineate in the cost baseline the TPC by phase (i.e. design, construction, turnover/closeout, etc.). Also clearly specify the amounts planned for management reserve and federal contingency. Include a cost summary table by fiscal year, WBS element, and fund source.

The cost baseline, typically synonymous with the TPC, is the sum of Total Estimated Cost (TEC) and Other Project Costs (OPC). Please refer to the DOE-PM-HBK-01-2014, Glossary of Terms, for the definitions of TPC, TEC, OPC and other applicable terms utilized.


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Baseline Change Control
Establish or reference the baseline change control framework, which includes applicable change management processes, threshold requirements, and change control board charter and the procedures to be followed. Include a summary table of baseline change control thresholds and approval authority for the scope, schedule, and cost for the Program Secretarial Officer, CE, PME, FPD, contractor project manager, and others as applicable. Refer to DOE Guide 413.3-20, Change Control Management, for more information.

Integration Management
Describe inputs and outputs from stakeholders, other projects, and project team members and reflect their interdependencies. This could start as a simple interface diagram at CD-1 and be developed into a more thorough interface management requirement document as the project matures. Provide the project team and the PME a mapping of potential focus areas during project execution to preclude failed handoff between interfaces.

Communication Management
Describe policies and practices for communication to the multiple stakeholders and interested parties. Address methods and frequency of communications to keep stakeholders informed on project performance and risk. Either refer to or include the project's communication management plan.

Include a description of major reviews that would occur during a project's life cycle and the results of those reviews.




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Project Reporting
Briefly describe the reporting process which includes both internal and external requirements and as appropriate, types, content, distributions, frequency of reporting, level of control, and review and approval requirements.

Project Reviews
Include a description of major reviews that would occur during a project's life cycle and the results of those reviews. Forecast design reviews, quarterly headquarters reviews, peer reviews, headquarters independent reviews, and governance reviews such as those by the Project Management Risk Committee (PMRC) and Energy Systems Acquisition Advisory Board (ESAAB). Refer to DOE Guide 413.3-9, Project Review Guide for Capital Asset Projects, and for nuclear facility projects DOE-STD-1104-2016, Review and Approval of Nuclear Facility Safety Basis and Safety Design Basis Document.


Risk Management
Describe the policies and practices for risk management and a summary of the results of an initial risk assessment and risk analysis if the project is approaching CD-2. Address risk management in the plan or include by reference and summarize the key project risks. Refer to DOE Guide 413.3-7A, Risk Management, for additional information. For projects involving Hazard Category 1, 2, or 3 nuclear facilities, refer to DOE-STD-1189-2016



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Environment, Health, Safety, and Security (EHSS)
Provide a reference or identify all documents that establish the EHSS plans for the project or establish requirements for the site as a whole. The PEP need not address EHSS work required for actual facility operations. However, for nuclear facility projects, describe how safety-in-design requirements of DOE-STD-1189 will be accomplished. Include the following: Environment
Provide a brief assessment of environmental considerations including, but not limited to:

- Discussion of environmental permitting;
- Status of plans for complying with all applicable environmental regulations;
- Description of environmental management documentation, such as the site's Environmental Management System (EMS) and/or project-specific waste management or pollution prevention plans; and
- Description of all safety documentation, such as the site Integrated Safety Management System and/or a project-specific safety management plan.



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Integrated Safety Management
Document that safety is integrated into daily work activities along with the use of appropriate standards (e.g., EMS requirements of ISO 14001:2015), which also address design with requirements to optimize worker and environmental controls and to consider pollution prevention and sustainable designs. Refer to the appropriate ISM documents, listed in the references section of this guide.

Industrial Safety and Occupational Health
Document or reference the means of implementing worker and public protection measures.

Nuclear Safety
Document or reference implementation of nuclear safety requirements and integration of safety into design.

Hazard Analysis
Reference a hazard analysis document or identify the hazards related to the project and discuss plans to eliminate or mitigate the hazards.

Briefly describe readiness of the project and plans to manage and control engineering and technology development and deployment.




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Safeguards and Security
Identify or develop safeguards and security systems, processes, procedures, and personnel to establish a baseline or minimal framework or both that will systematically integrate safeguards and security management into the project acquisition process. Include safeguards and security planning documents, supporting analyses, necessary approvals, and requirements including DOE Orders, federal regulations, and presidential directives. Refer to the project's safeguards and security plan, if applicable. Refer to DOE G 413.3-3, Safeguards and Security for Program and Project Management for more information.

Monitoring and Controlling
Configuration management, records management, quality assurance, and testing and evaluation assist project management personnel with monitoring and controlling their projects.

Configuration Management
Configuration management is used to identify and document the configuration of the end products and control changes to the configuration during the project's life cycle. Initiate a configuration management system early in the development of the project and ensure the delivery of complete as-built documents at the close of the project.




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Records Management and Document Control
Describe how records will be managed on the project in accordance with DOE directives.

Quality Assurance
Describe the quality assurance (QA) requirements for the project. Depending on the project size and complexity, a project's QA program may be based on a corporate QA plan or a project-specific plan. Also refer to regulatory and contract requirements for the QA program.

Testing and Evaluation
Provide a brief description of test and evaluation activities. For projects requiring more significant testing and evaluation, prepare and refer to a dedicated plan describing those efforts.

Project Controls
Describe the methods planned for and used by the project for project controls and performance evaluation. An earned value management system (EVMS) is required for all cost-plus projects with a TPC of \$50 million or greater. Projects with an approved exception, or cost-plus project under \$50 million will have alternative project controls. Discuss the specific systems, reports, and other tools used by the project team.



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Engineering and Technology Readiness
Briefly describe readiness of the project and plans to manage and control engineering and technology development and deployment. If a technology readiness assessment has been completed or a technology maturation plan has been developed, summarize them. For additional information, refer to DOE Guide 413.3-4A, Technology Readiness Assessment, and DOE Order 413.3B, Appendix C, Section 28 on technology readiness assessments.

Systems Engineering
Provide a summary of the project's systems engineering plan and documentation. The primary goal of the systems engineering process is to translate mission requirements into system architecture, performance parameters, and design details. The process begins with the definition of a need, progresses through the establishment of the baseline, and ends with verification that the need has been met. Refer to DOE Guide 413.3-1, Managing Design and Construction Using Systems Engineering, for more information.

Value Engineering and Management
Document value management performed early in a project life cycle.



Describe how the project team plans to capture and submit lessons learned to comply with DOE Order 413.3B lessons learned reporting requirements.



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Transition to Operations

Provide an overview of the project's plans for transition to operations. Refer to or include the project's transition to operations plan.

Project Closeout

Refer to or include the project's closeout plan, including plans for completion of initial and final closeout reports. Project closeout is initiated following achievement of the completion criteria when either (1) construction has been completed and the project facilities are fully operational and commissioned, or (2) in the case of cleanup projects, deactivation, decontamination, decommissioning, demolition, or disposition has completed. Provide the closeout criteria the project plans to use. DOE Order 413.3B, Appendix A, Table 2.5 lists requirements for project closeout.

Project Management Lessons Learned

Describe how the project team plans to capture and submit lessons learned to comply with DOE Order 413.3B lessons learned reporting requirements. Project teams are highly encouraged to submit lessons learned throughout the project life cycle utilizing the PARS Lessons Learned repository.