SUPPLEMENTAL DIRECTIVE

NNSA SD 413.3-7

Approved: 09-08-2023
Recertification Due: 09-08-2026

PROJECT MANAGEMENT FOR NON-NUCLEAR, NON-COMPLEX CAPITAL ASSET ACQUISITION

NATIONAL NUCLEAR SECURITY ADMINISTRATION

Office of Infrastructure

CONTROLLED DOCUMENT
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OFFICE OF PRIMARY INTEREST (OPI):
Office of Infrastructure

PROJECT MANAGEMENT FOR NON-NUCLEAR, NON-COMPLEX CAPITAL ASSET ACQUISITION

1. PURPOSE. Describe the National Nuclear Security Administration (NNSA) roles, responsibilities, and authorities as they relate to capital asset project management for non-nuclear, non-complex construction projects, as defined in Section 6.c of this Supplemental Directive (SD), with a Total Project Cost (TPC) less than $100 Million (M) and greater than the threshold for minor construction projects, defined in 50 United States Code (U.S.C.) 2741. This Supplemental Directive (SD) specifies mandatory tailoring of requirements established by Department of Energy (DOE) Order (O) 413.3B, *Program and Project Management for the Acquisition of Capital Assets,* (herein referred to as DOE O 413.3) unless the Head of NNSA Program or Field Element (Heads of NNSA Elements) requires that the project follow DOE O 413.3. It also specifies mandatory tailoring of requirements that apply to projects between the minor construction threshold and the DOE O 413.3 applicability threshold.

2. AUTHORITY. DOE O 413.3B, Chg. 7, *Program and Project Management for the Acquisition of Capital Assets*, dated 6/21/2023.

3. CANCELLATION. None.

4. APPLICABILITY.

   a. Federal. This SD applies to all NNSA federal organizations.

   b. Contractor. The Contractor Requirements Document (CRD) attached to this SD sets forth requirements that apply to contractors performing work on behalf of NNSA federal organizations. This CRD and Attachments shall be incorporated into contracts and subcontracts that involve the construction of non-complex capital assets as defined in Section 6.c. with a TPC less than $100M and greater than the minor construction threshold.

   c. Equivalency. In accordance with the responsibilities and authorities assigned by Executive Order 12344, codified at 50 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.

   d. This SD or elements of this SD may be applied to other capital asset acquisitions meeting the requirements as defined in Section 6.c that are greater than the DOE O 413.3 applicability threshold through the established DOE O 413.3 tailoring process. Tailoring must be documented and approved by the Project Management Executive (PME).

5. BACKGROUND. The NNSA Enhanced Minor Construction and Commercial (EMC^2) pilot established a streamlined process for non-nuclear, non-complex real property capital asset

construction. This SD was written based on the processes developed and used in the successful execution of projects under that pilot.

6. REQUIREMENTS.

a. This capital asset project management process must be followed for non-nuclear, non-complex projects as defined in Section 6.c. in conjunction with the requirements established by DOE O 413.3 using the tailoring specified herein. The project management principles, as set forth in DOE O 413.3, appendix C, paragraph 1.a.-k., apply to all capital asset projects.

b. An Integrated Project Team (IPT), led by a Federal Project Director (FPD), must be established after approval of the combined Mission Need Statement and Program Requirements Document (MNS/PRD).

c. This SD must be applied to projects meeting the following criteria.

(1) The project is not a new or major modification to a hazard category 1, 2, or 3 nuclear, as defined by 10 Code of Federal Regulations (CFR) 830, or radiological facility, as defined by DOE STD-1027-2018, *Hazard Categorization of DOE Nuclear Facilities*.

(2) The project has no hazards above those that can be addressed using 10 CFR 851.23 safety and health standards.

(3) The project does not include critical technology elements as defined in DOE Guide (G) 413.3-4A, *Technology Readiness Assessments Guide*, and NNSA Policy (NAP) 413.4, *Technology Readiness Assessments*.

(4) The project is not part of a phased set of projects as defined in DOE O 413.3 Appendix C, Section 27.b nor requires integration with other projects to provide a complete and usable product.

7. RESPONSIBILITIES.

a. Administrator. Designates a project owner before approval of the Preliminary Project Execution Plan (PPEP) by the PME.

b. Associate Administrator for the Office of Infrastructure.

(1) Determines the project applicability for this SD and approves deviations from this SD. This responsibility cannot be delegated.

(2) Assists the Heads of NNSA Elements in developing the combined MNS/PRD for projects executed using this tailored approach.

(3) Ensures NNSA follows the project management requirements specified herein for non-complex, non-nuclear projects as defined in Section 6.c. with a TPC less than $100M and greater than the minor construction project threshold.

(4) Provides overall direction, strategic guidance, and management with respect to the acquisition and management of non-nuclear, non-complex capital asset projects as defined in Section 6.c. and ensures that NNSA implements all applicable federal and departmental acquisition policies and regulations.

(5) Ensures NNSA follows the DOE acquisition requirements outlined in the DOE Acquisition Regulations (DEAR), DOE O 413.3, and DOE policies for aligning contracts and contract incentives with taxpayer interests.

(6) Assumes the lead role in developing, administering, and awarding NNSA directly managed design and construction contracts and Inter-Agency Agreement(s) (IAs).

(7) Trains and develops FPDs per DOE O 361.1C, *Acquisition Career Management Program*. Provides FPD upon Head of Field Element's (FOM) request.

(8) Issues the PME initial delegation memoranda, if required, and any subsequent delegations that may be appropriate if material changes in the project occur.

(9) Assigns a Headquarters Project Manager (HQPM) to the project.

c. Associate Administrator for Management and Budget.

(1) Ensures, at the discretion of the program offices and their specific budget allocations, funds for project products and services come from the sponsoring NNSA element's appropriated funds, the details of which are to be developed in accordance with the process in NAP 130.1A, *Planning, Programming, Budgeting, and Evaluation (PPBE) Process*.

(2) Ensures programs comply with DOE orders, including DOE O 413.3, during the fiscal year congressional budget process.

(3) Provides IPT representation to ensure programmatic cost estimates are developed in accordance with NNSA policies and best practices.

(4) Assists the Heads of NNSA Elements, if requested, with developing Business Case Analyses (BCAs) to support the MNS/PRD selected alternative and preliminary estimate.

d. Head of NNSA Program Elements.

(1) Determines whether the project will request NA-90-1 approval to use this SD to execute the project, or whether the project will follow DOE O 413.3 and SD 413.3 instead.

(1) Owns PME authority, consistent with TPC thresholds and delegated authorities, but this authority should be further delegated.

(2) Leads the development of the MNS/PRD, including selecting the alternative to close the mission gap.

(3) Manages requirements generation, develops the budget requests, funds capital asset projects including funding for FPD support governed by DOE O 413.3, and monitors and approves scope changes as identified in the Project Execution Plan (PEP) change control table.

(4) Assumes responsibility for oversight of the programmatic operations of the completed project in accordance with Beneficial Occupancy Date (BOD) guidance.

(5) Maintains responsibility for the mission need, requirements, selection of a solution, budgets, and funding through all phases of a capital asset project.

(6) Leads the abbreviated BCA, establishes the gaps and boundaries, and provides support as needed.

(7) Ensures follow-on operations, waste management and maintenance funds for the completed project are programmed.

e. Head of NNSA Field Elements.

(1) Provides or requests an FPD to lead the project from MNS/PRD approval to project completion.

(2) Ensures the federal authorizing and accepting officials have documented their review of the design documents against their acceptance requirements before construction mobilization to prevent changes from being required during project execution. Approves modifications to federal authorizing official acceptance requirements based on field conditions. Works with the FPD to enable occupancy and operations.

(3) Provides security; information technology; operational technology assurance; environment, safety, and health; sustainability; waste

management; and quality assurance technical experts to support the project, commensurate with complexity.

(4) Provides oversight of site operations.

f. Project Management Executive (PME).

(1) Serves as the approval authority for the project and ensures that appropriate project management policies and practices are implemented during project execution.

(2) Approves the MNS/PRD, PPEP, and PEP.

(3) Approves in writing the selection of the FPD.

(4) Coordinates with NA-90-1 to specify additional tailoring or waive the mandatory tailoring required by this SD.

(5) Verifies the mission need has been met at project completion.

g. Federal Project Director (FPD).

(1) Leads the IPT and serves as a single point of contact for managing the project, beginning with the PME approval of the MNS/PRD, and continuing through project completion, including close-out.

(2) Provides primary oversight of the Management and Operating (M&O) Contractor project manager, IA team, or federal team executing the project.

(3) Evaluates and verifies reported progress, provides projections for future progress, and notifies the PME whenever project performance indicates a likelihood of performance baseline deviation.

(4) Supports and defends the project cost, schedule, performance, and scope baselines, and ensures that the project receives adequate resources and expertise in all necessary areas.

(5) Serves as the Contracting Officer's Representative (COR), upon appointment.

h. Headquarters Project Manager (HQPM).

(1) Serves as the project management professional in NA-90 assigned to advise the project when the MNS/PRD begins development.

(2) Serves as the primary advisor to the NNSA elements to ensure sufficient development of the MNS and PRD requirements to allow the project to proceed with conceptual design.

(3) Advises Heads of NNSA Elements and FPD on the content and completeness of the PEP.

9. DEFINITIONS. Also see DOE O 413.3.

a. Business Case Analysis (BCA). A document that summarizes the justification for the acquisition of a capital asset, including the supporting analysis. The BCA should provide assurance that the project supports the mission need.

b. Construction Safety and Health Plan (CSHP). A document developed by the construction contractor that identifies management procedures for the safety and health of all personnel on the site.

c. Designer of Record. A professional architect or engineer who seals drawings, reports, or papers for a project. The designer of record for construction projects assumes professional responsibility for ensuring the integrity of the design.

d. Inspection. An assessment of a specific aspect of a construction project that ensures the installed product or practice complies with the contract or approved plans and specifications.

e. Integrated Master Schedule (IMS). An integrated and networked multi-layered schedule of activities for executing the scope of the project. The IMS includes all interfaces and milestones necessary for project completion. See Attachment 2 for further IMS content discussion.

f. OSHA+. An NNSA specific safety management system for non-nuclear, non-complex construction projects that is a tailored, graded approach to meeting both 10 CFR 851 and DOE Integrated Safety Management requirements.

10. ACRONYMS. See Appendix B.

11. REFERENCES. See Appendix C.

12. CONTACT. The Office of Infrastructure, (NA-90), Email: na-90@nnsa.doe.gov.

BY ORDER OF THE ADMINISTRATOR:

Jill Hruby
Administrator

Attachments:
1. Contractor Requirements Document
2. Project Process – Non-Nuclear, Non-Complex Project Execution Requirements

Appendixes:
A. Project Process – Project Acquisition Management Systems and DOE O 413.3 Crosswalk
B. Project Process – Overview of Roles and Responsibilities
C. Acronyms/Abbreviations
D. References

ATTACHMENT 1: CONTRACTOR REQUIREMENTS DOCUMENT SD 413.3-7, PROJECT MANAGEMENT FOR NON-NUCLEAR, NON-COMPLEX CAPITAL ASSET ACQUISITION

1. INTRODUCTION.

This Contractor Requirements Document (CRD) establishes the requirements for National Nuclear Security Administration (NNSA) contractors who perform capital asset project management for non-nuclear, non-complex line-item construction projects as defined in Supplemental Directive (SD) 413.3-7, Section 6.c. with a Total Project Cost (TPC) less than $100 Million (M) and greater than the minor construction applicability threshold.

NNSA contractors are responsible for complying with the requirements of this CRD and for flowing down the requirements of this CRD to subcontractors at all levels, to the extent necessary, to verify the contractor's compliance with the requirements.

2. REQUIREMENTS.

The contractor must comply with the requirements laid out in Attachments 2 and 3 of this SD.

a. General Requirements.

(1) Contractors must adjust procedures related to acceptance of work performed using the SD's risk, design, and submittal review, quality control, commissioning, and inspection reforms without an acceptance review prior to operating the facility to enable acceptance of capital assets under this SD.

(2) Contractors must adjust procedures related to project schedule and reporting requirements, safety, risk, quality, commissioning, and inspections to enable execution of capital assets using this SD.

(3) Contractors must identify conflicts between this SD and the existing Management and Operating Contract requirements, if applicable, and resolve them with the NNSA Contracting Officer.

b. Specific Requirements.

(1) Contractor Project Manager. Capital asset projects must be executed in compliance with Attachments 2 and 3 of this SD.

(2) Contractor Contracting Officer. Ensures the Management and Operating contract or Interagency Agreement does not conflict with Attachments 2 and 3 of this SD.

ATTACHMENT 2: PROJECT PROCESS – NON-NUCLEAR, NON-COMPLEX PROJECT EXECUTION REQUIREMENTS

Note: This attachment applies to NNSA federal employees, contractors and federal organizations executing work in compliance with this NNSA Supplemental Directive 413.3, *Project Management for Non-nuclear, Non-complex Capital Asset Acquisition* on behalf of the NNSA.

1. INTRODUCTION.

This document establishes the project tailoring requirements for non-nuclear, non-complex line-item construction projects as defined in this Supplemental Directive (SD) Section 6.c with a Total Project Cost (TPC) less than $100 Million (M) and greater than the minor construction threshold.

2. REQUIREMENTS.

a. Major tailored elements of the federal project management process identified in NNSA SD 413.3, *Program and Project Management for the Acquisition of Capital Assets*, are as follows.

(1) Project scope and alternative selection must be performed during the project planning and initiation phase in accordance with Office of Management and Budget (OMB) Circular No. A-11, *Preparation, Submission, And Execution of the Budget*. An Analysis of Alternatives (AoA) is not conducted for a low complexity project. An abbreviated Business Case Analysis (BCA) is performed to a level of detail that is commensurate with the complexity of the project.

(2) Formal Energy Systems Acquisition Advisory Board Equivalent (ESAAB-E) hold points are replaced by Project Management Executive (PME) approval of key documents which correspond to Department of Energy (DOE) Order (O) 413.3B, Chg. 7, *Program and Project Management for the Acquisition of Capital Assets* (DOE O 413.3) critical decisions (CDs):

(a) The Mission Need Statement/Program Requirements Document (MNS/PRD) as CD-0 Approve Mission Need.

(b) The Preliminary Project Execution Plan (PPEP) as CD-1 Approve Alternative Selection and Cost Range.

(c) The Project Execution Plan (PEP) as CD-2/3 Approve Performance Baseline/Start of Construction or Execution.

(d) Federal Project Director (FPD) notification to the PME that the project is complete as CD-4 Approve Start of Operations or Project Completion.

(3) The DOE Project Assessment and Reporting System (PARS) reporting requirements for acquisitions with TPCs greater than the DOE O 413.3 applicability threshold but less than $100M consist of the following:

(a) A monthly narrative, TPC and project completion forecasts, project status color assessment as defined in PARS, the native file of the Integrated Master Schedule (IMS) Baseline and Status schedules, and a similar report to the Contract Performance Report (CPR) Format 1.

Note: The IMS is an integration of the Firm Fixed Price (FFP) contract schedule of values-based cost-loaded schedule and the Cost-Plus (e.g., Management and Operating Contractor [M&O]) resource-loaded schedule; FFP contractors should *not* provide resource-loaded schedules to assist in creating an IMS.

(b) The approved MNS/PRD, PPEP, PEP, conceptual, preliminary, and final design reports, and project completion report must be uploaded to PARS. The content of these documents should be consistent with the requirements of DOE O 413.3.

(4) The requirements in SD 413.3-1 for Independent Project Reviews (IPRs) or Annual Project Reviews (APRs) by the Office of Infrastructure (NA-90) are superseded. All reviews required by DOE O 413.3 are delegated to the FPD. This will be a tailored project review, using support as necessary, limited to reviewing the project documents to determine if the scope and project requirements are defined well enough to award the design, construction, and/or design-build contract, confirming that the Key Performance Parameters (KPPs) and other Program Requirements are being met, the contractor level of effort activities are appropriate, and the overall cost and schedule. The PME may request or grant additional independent reviews.

(5) A qualitative risk analysis must be used instead of a quantitative risk-based approach to establishing contingency and management reserve.

(6) Streamline federal and M&O functional oversight to align with commercial standards. Safety, quality, environmental, and security inspection frequencies – should be reduced to a minimum, to the greatest extent possible. Additional inspections may be authorized by the FPD in instances where significant issues are found. The FPD will notify the PME, within 30 days of initiation, if additional inspections are performed. Inspection frequencies will subsequently revert to a minimal amount, per functional area, after the issues are resolved. All inspections will be conducted concurrently to the maximum extent practicable to minimize disruption of on-site activities.

b. Major tailored and exempted elements of the work activities are as follows.

(1) The use of an IMS with Baseline and Status schedules is crucial to effective project management and must consist of the following items. The resource-loaded IMS must include and integrate both the work directly performed by the M&O contractor personnel and the schedule of values based, cost-loaded schedules for FFP subcontracts.

(a) For acquisitions greater than the DOE O 413.3 applicability threshold, resource-loaded schedules are only required for work directly performed by M&O contractor personnel or using cost-plus subcontracts.

(b) FFP contracts must implement and submit a schedule of values-based, cost-loaded schedules instead of resource-loaded schedules to the FPD. The schedules must be cost loaded on major deliverable activities with measurable scope to develop a time-phased cost profile.

(2) The use of commonly referenced standards and avoidance of citing DOE Orders in procurement documents to the greatest extent possible.

(3) Design reviews are restricted to ensure code compliance, that functional requirements are met, federal authorizing and accepting official requirements are met, and connections to external infrastructure are adequate.

(4) Reduce functional oversight to align with commercial standards. Safety, quality, environmental, and security inspection frequencies are reduced to a maximum of twice monthly per functional area. Additional inspections may be authorized by the FPD in instances where significant issues are found. The FPD will notify the PME, within 30 days of initiation, if additional inspections are performed. Inspection frequencies will subsequently revert to a maximum of twice monthly per functional area after the issues are resolved. This requirement for reduced inspections does not apply to inspections required by code or project specification. All inspections will be conducted concurrently to the maximum extent practicable to minimize disruption of on-site activities.

(5) Construction submittal reviews must be performed by Title III architectural/engineering support, with no systematic duplicate reviews by the M&O contractor or federal team. A review of the submittals to ensure compliance with functional requirements is allowed. For example, the site requires a specific manufacturer of mechanical equipment for maintenance purposes and wants to confirm this manufacturer was submitted – but the review should stop after the manufacturer's name is confirmed and not continue by reviewing the features included on the units.

(6) The use of the designer of record's quality control, submittal, testing, commissioning, and inspection requirements and their inclusion in the construction specifications.

(7) For work not directly performed by the M&O contractor or other federal agency personnel, including subcontractors to these entities:

(a) The construction contractor will develop and use a project-specific Construction Safety and Health Plan (CSHP) that is aligned with the OSHA+ model.

(b) The CSHP must include the core elements identified in the Occupational Safety and Health Administration's (OSHA) *Recommended Practices for Safety & Health Programs in Construction* (OSHA 3886) and must be approved by the agent – M&O Contractor, Interagency Agreement partner, NNSA Federal Project Director, etc. – who is the counterparty to the construction contractor's contract. In addition, the CSHP must address the use of respiratory protection, lasers, welding/brazing, and American Conference of Government Industrial Hygienists Threshold Limit Values for controlling worker exposure hazards to construction activities commensurate with the project.

(c) The construction contractor must have a designated competent person responsible for safety on site during the performance of all physical work activities, and M&O contractor or federal agency personnel shall not perform nor provide oversight of this function, unless approved by the FPD to resolve significant issues.

(d) This safety management system is a tailored, graded approach to meeting both 10 CFR 851 and DOE O 450.2, *Integrated Safety Management* requirements and is hereafter referred to as OHSA+.

3. PROCESS.

a. Planning: Prepare combined MNS/PRD for Approval.

(1) Develop combined MNS/PRD. When a credible performance gap is identified between current capabilities and those required to achieve the mission, the Heads of NNSA Program or Field Elements (Heads of NNSA Elements) will lead the development of a combined MNS/PRD that translates mission needs into functional requirements. This document includes content typically found within the MNS and the PRD. The MNS portion describes the mission gap and must not be written to assume any particular solution, whether material or non-material, although the PRD portion does include the specific solution to close the mission performance gap. The Heads of NNSA Elements must develop and maintain the MNS/PRD during the life of the project. The Heads of NNSA Elements

also engage the Office of Design and Construction (NA-92) at this phase to add a Headquarters Project Manager (HQPM) to the Integrated Project Team (IPT) to act as a project management advisor.

(2) Perform an Abbreviated BCA and/or PRD Estimate. When several credible means of closing the mission gap exist, the Heads of NNSA Elements shall determine, via an abbreviated BCA, the appropriate means to establish a specific solution to close the mission need gap. The level of analysis in the BCA should be commensurate with the complexity of the project. The development of the MNS/PRD preliminary project cost estimate range, based on the selected solution, must be performed by the Office of Management and Budget (NA-MB) in accordance with NNSA Policy 413.5. This upper end of the project cost estimate range ascertains whether the project will remain less than the $100M threshold for the application of this SD.

(3) FPD Appointment. The Head of NNSA Field Element (FOM) identifies a FPD to manage the project's execution. If an FPD is not available, the FOM collaborates with NA-90 to identify an available FPD. The FPD is assigned to the project through identification in the PRD and formally appointed with the PME's approval of the PRD. The FPD remains within their existing organization. Any change in FPD appointment will be recorded and approved with PME approval of the PPEP/PEP. FPD appointments are made based on an evaluation of an individual's project management training/experience and the project size. The appointed FPD initially may not be fully certified, but the FPD must be working towards Project Management Career Development Program (PMCDP) certification at the appropriate level. This plan to attain the appropriate level of certification should be documented in the PRD or PPEP/PEP.

(4) Identify and Provide Funding. The responsible Heads of NNSA Elements use the cost estimate developed by NA-MB to establish the rough-order of magnitude (ROM) cost range and request funding for capital asset projects. The Heads of NNSA Elements formulate the budget details in accordance with NNSA Policy (NAP) 130.1A, *Planning, Programming, Budgeting, and Evaluation (PPBE) Process*. The Heads of NNSA Elements will ensure adequate resources are provided throughout the project.

b. Post MNS/PRD Approval: Prepare PPEP Defining Project Cost Estimate Range.

(1) Establish an IPT. Upon approval of the combined MNS/PRD for a capital asset project, the Heads of NNSA Elements will establish a matrixed IPT comprising of NNSA Field Office personnel, NNSA Program Office personnel, project and acquisition professionals, subject matter experts, contractors, and other federal personnel. An FPD is selected to lead the IPT after PME approval of the MNS/PRD. The IPT includes:

- NA-90 to advise on infrastructure issues;
- The Office of the Associate Administrator for Information Management and Chief Information Officer (NA-IM) to advise on IT standards, enterprise architecture, cybersecurity, and operational technology assurance;
- Safeguards and security to advise on security requirements;
- The Office of Environmental, Safety, and Health (NA-ESH) to advise on environment, safety, and health and sustainability requirements; and
- NA-MB to develop all cost estimates, and
- Other subject matter experts who would contribute to the success of the project.

IPT members are responsible for ensuring their headquarters organizations concur with the advice provided to the FPD. (See DOE G 413.3-18A, *IPT Guide for Formation and Implementation*).

(2) Develop the Acquisition Strategy. The FPD develops the Acquisition Strategy in consultation with the Heads of NNSA Elements and the entity issuing the procurement contract, NA-90 for projects directly managed by NNSA, or the M&O contractor or other executing federal agency for projects indirectly managed by NNSA. The Acquisition Strategy, including the details of the contractor's Acquisition Plan, must be included in the PPEP. (For additional information, see NA-92 Standard Practice 02, Acquisition Strategy; DOE G 413.3-13 Chg 1 (Admin Chg), U.S. Department of Energy Acquisition Strategy Guide for Capital Asset Projects; DOE Acquisition Guide, chapter 7; and Federal Acquisition Regulation [FAR] parts 7 and 34).

(3) Develop the PPEP. The FPD leads the development of the PPEP, which describes the preliminary scope, schedule, and cost range estimates, organizational framework, and overall management system for the project, including the detailed approach for the execution of design activities. The high end of the cost range established at PPEP approval determines the maximum total estimated cost (TEC) funding which will be provided to the project. (For additional information see DOE G 413.3-15A, Project Execution Plans). The PPEP must include the tailoring specified in this SD unless a waiver is obtained from the PME. If planned, the PPEP also includes detailed plans for long-lead procurements or early site preparation work. The FPD, Head of NNSA Elements, and PME approve scope changes in accordance with the change control thresholds in the approved PPEP. The Acquisition Strategy must be predominately FFP subcontracts. After removal of management reserve and contingency from

the TEC funding total, the goal is for 85% of the remaining TEC balance to be allocated to those subcontracts when the performance baseline is later approved. PME approval of the PPEP is required before TEC funds may be committed or spent for design only. The FPD manages PPEP under change control protocols after its approval by the PME.

(4) Develop the Conceptual Design. The FPD oversees the conceptual design team. The conceptual design shall conform to the design guidance in Appendix D, Conceptual and Preliminary Design Guidance, of SD 413.3, Program and Project Management for the Acquisition of Capital Assets. The FPD and Program Manager approve the Conceptual Design Report to ensure that it conforms to all project requirements in the MNS/PRD. Progress updates and conceptual design development statuses are provided in PARS to senior leaders. NA-MB's Federal Cost Lead will assist with reviewing the conceptual design cost estimate. The federal and M&O contractor authorizing/accepting authorities for security, cybersecurity, operational technology assurance, information technology, and safety (especially fire protection) will review the conceptual design to ensure it conforms to their requirements to occupy and operate the facility.

(5) Development Initial Risk Management Plan. Develop a risk management plan and complete an initial risk assessment for the selected alternative as part of the PPEP. Use a Qualitative Risk Analysis Matrix (See Figure 3 in DOE G 413.3-7A, Risk Management Guide) to identify an individual risk rating based on the assigned probability and consequence of a risk based on the simplicity of non-complex construction. Each of these risk ratings categorizes each risk as low, moderate, or high. Integrate individual risk ratings determine an overall project risk rating. The goal is for management reserve and contingency to be 15% of the TEC costs when the performance baseline is later approved.

(6) Exemptions, Equivalencies, and Waivers. The FPD may seek exemptions or equivalencies to the requirements in DOE directives in accordance with the process described in Appendix E of DOE O 251.1D, Departmental Directives Program. Examples include an equivalency for fire protection system requirements or an exemption from a natural phenomenon hazard requirement. Such exemptions, equivalencies, and waivers represent a risk to the project until approved. Projects requesting an exemption, equivalency, or waiver should place a high priority on having the request approved before the final conceptual design report.

c. Post PPEP Approval: Complete Design and Develop Performance Baseline.

(1) Award and Administer Design Subcontracts or Inter-Agency Agreement(s) (IAs). The FPD oversees the award and management of design or design-build subcontracts or IAs to support project requirements, according to the design approach identified in the PPEP. To ensure

successful outcomes, close coordination is expected between acquisition staff across the enterprise.

(2) Complete Project Design. The FPD ensures the preliminary design conforms to the design guidance in Appendix D, Conceptual and Preliminary Design Guidance, of NNSA SD 413.3, Program and Project Management for the Acquisition of Capital Assets. Preliminary changes to scope and schedule and cost estimate ranges included in the PPEP are approved in accordance with the change control thresholds in the approved PPEP. The FPD measures and evaluates performance against the preliminary scope, schedule, and cost estimate ranges included in the PPEP. The designer of record's quality control, submittal, testing, commissioning, and inspection requirements must be used and included in the project's construction specifications. The Federal and M&O contractor authorizing/accepting authorities for security, cybersecurity, operational technology assurance, information technology, and safety (especially fire protection) will review the design to ensure it conforms with their requirements to occupy and operate the facility.

(3) Long Lead Procurements. If identified in the PPEP, pursue the acquisition of long-lead materials or equipment and incidental site preparations. Examples of incidental site preparation work includes clearing, grubbing and stabilization of the site; relocation of roads and utilities; contractor office and parking spaces; new construction site fence lines and relocations; concrete batch plants; and temporary work and storage facilities. It does not include any permanent segment of construction of the project/facility and will not be used to proceed with construction incrementally.

(4) Performance Baseline and PEP Development. The FPD drafts the PEP based on the most recent PPEP and develops the performance baseline, reflective of identified and assessed risks and uncertainties, to include scope, total project cost, and planned project completion date, and KPPs (if applicable). Use a Qualitative Risk Analysis Matrix (See Figure 3 in DOE G 413.3-7A, Risk Management Guide) to identify an individual risk rating based on the assigned probability and consequence of a risk based on the simplicity of non-complex construction. Each of these risk ratings categorizes each risk as low, moderate, or high. Use of individual risk ratings determine an overall project risk rating. This overall project rating is used to determine whether less than 15% of the design and construction point estimates should be used for management reserve and contingency. An amount more than 15% must be clearly justified. If the total project cost exceeds the upper end of the project cost estimate range identified in the approved PPEP by greater than 50%, the PME must reassess the approved project solution and either approve a new solution or reaffirm the current solution with an updated project cost estimate range. After the receipt of subcontractor bids, the FPD requests PME approval of the PEP.

The FPD independently validates this updated baseline, and the PME should receive advice from appropriate Heads of NNSA Elements prior to the approval of the PEP. Project success will be measured at project completion against this original approved performance baseline scope, project completion date, and total project cost, which includes confirming that the baselined KPPs and other program requirements within the PRD were met.

(5) Plan for Site Integration. The FPD and Heads of NNSA Elements, through the IPT, establish a plan for site integration. Planning for site integration involves identifying site interface needs and infrastructure requirements to mitigate barriers to construction execution. The Plan should have agreed upon and clearly documented organizational interfaces and responsibilities by all involved parties, as codified in the PPEP or PEP, commissioning plan, startup plan, or as a standalone plan.

(6) Earned Value Management System (EVMS). EVMS system certification is not required. Alternative project controls will be documented in the PEP and used in lieu of compliant EVMS. Alternative project control methods to be used must include at a minimum a work breakdown structure (WBS), integrated master schedule showing critical path, account of planned versus actual work and cost, and EAC.

d. Post PEP approval: Construction Execution.

(1) Award and Administer Construction Subcontracts or IAs. The FPD oversees the award and management of construction subcontracts or IAs to support project requirements and the baseline scope, cost, and schedule included in the PEP. To ensure successful outcomes, close coordination is expected between contracting staff across the enterprise.

(2) Manage the Project Baseline. The FPD manages the project performance baseline by overseeing and evaluating the progress of the project through project completion. The FPD measures and evaluates performance against the performance baseline scope, project completion date, and total project cost in the approved PEP. The FPD, contractor or IA Project Manager, and the Head of NNSA Program and Field Element's Program Managers monitor progress and performance through monthly communications. Tailored reporting in PARS will be completed as described in section 2.a.3. Baseline changes are processed and approved in accordance with the change control thresholds in the approved PEP. The FPD executes changes in accordance with thresholds for scope, schedule, and cost as defined in the PEP. Changes impacting the project performance baseline must be approved by the PME.

(3) Manage Site Integration Issues. The FPD takes the lead role in managing site integration activities, in support of construction activities, with the NNSA elements.

(4) Prepare for Transition to Operations. In close coordination with Head of NNSA Program and Field Elements, the FPD supports the contractor Project Manager during the startup, turnover, and closeout of the project. Activities include checkout, testing, and operations, completing a transition to operations plan. The Head of NNSA Program and Field Elements' involvement in these activities is essential for project success.

(5) Establish Beneficial Occupancy Date (BOD). Before final completion of a building or facility construction, the BOD establishes when users can occupy it for the purpose for which it was constructed. The BOD is the date that follow-on contracts/activities (if any), such as information technology, operational technology assurance, or furniture installations, may begin in accordance with Appendix E, Beneficial Occupancy Guidance, of SD 413.3, Program and Project Management for the Acquisition of Capital Assets.

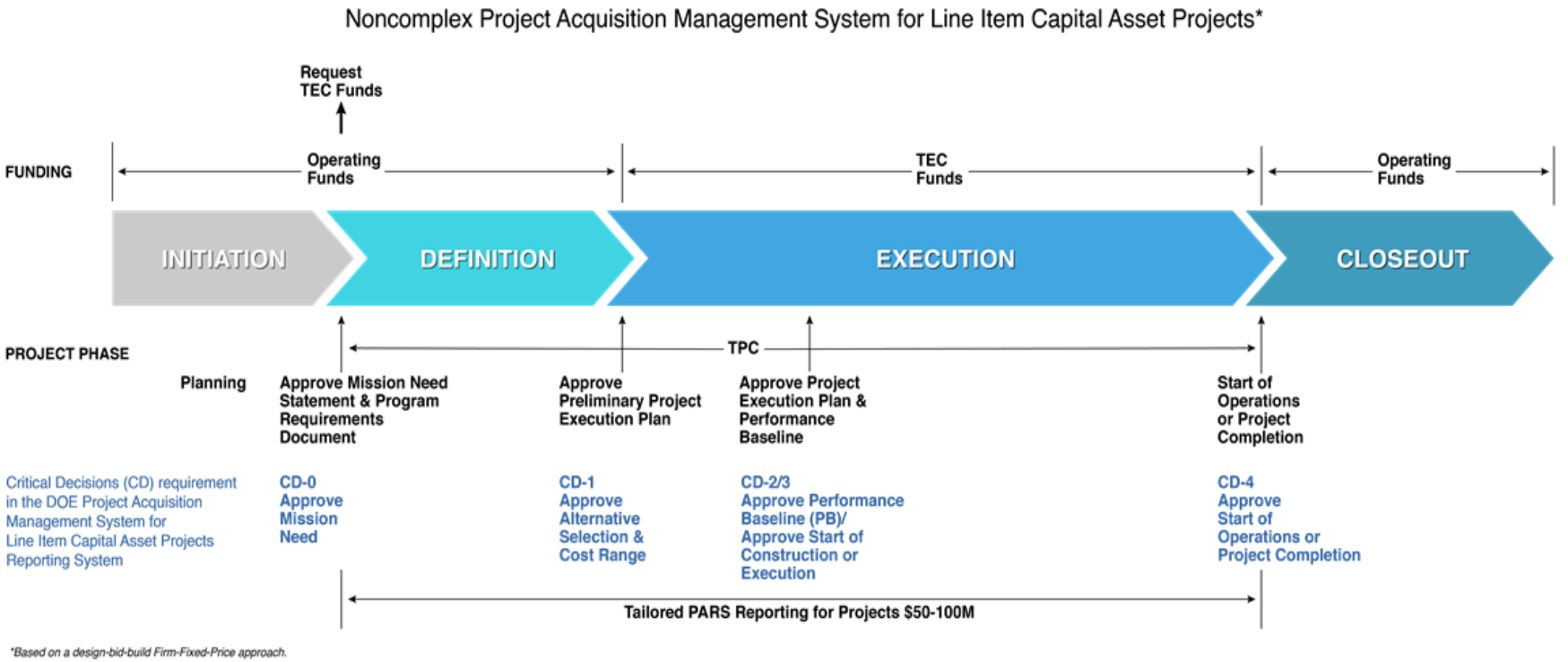
(6) Accept Project for Operations. The PME verifies that the mission needs and project requirements were met and accepts the project for operation in accordance with the PEP.

(7) Transition to Operations and Conduct Closeout Activities. Upon acceptance, the FPD provides updates through monthly communications with matrixed IPT members until closeout activities are completed. This includes completing punch list items, managing warranty issues, completing contracts/IAs, and conducting closeout activities.

(8) Notify PME of Project Completion. The FPD confirms that the baseline scope from the PEP was achieved and develops a summary report for notification to the PME of project completion. This report must include the final scope, cost, and schedule of the project and verification that the project completion criteria were satisfied. The FPD uploads the report into PARS to officially close the project.

APPENDIX A: PROJECT PROCESS – PROJECT ACQUISITION MANAGEMENT SYSTEMS AND DOE O 413.3 CROSSWALK

The graphic below presents the non-nuclear, non-complex project acquisition management system for line-item capital asset projects in comparison to the Department of Energy (DOE) acquisition management system for line-item capital asset projects to show the similarities and differences between the two systems.



The following tables identify the mandatory tailoring for projects that qualify for project management under this Supplemental Directive (SD) unless a waiver is granted by the Project Management Executive (PME). Project processes as defined in DOE Order (O) 413.3B Chg. 7 (LtdChg), *Program and Project Management for the Acquisition of Capital Assets* are stated in column 1, with the tailoring for that requirement (if any) in column 2. Critical Decision (CD) equivalencies or substitutions are also indicated in column 2.

DOE O 413.3B Table 2.0: CD-0 Requirements Crosswalk

Prior to CD-0	**Tailoring**
Perform Pre-Conceptual Planning activities that focus on the Program Offices' strategic goals and objectives, safety planning, design, development of capability gaps, high-level project parameters, a ROM cost range, and schedule estimates.	None – no change to the current process.
Perform a Mission Validation Independent Review on all major system projects. (Refer to DOE G 413.3-9, current version).	N/A – does not apply to this class of projects.
Approve a Mission Need Statement Document with recommendation from PM for projects with a TPC ≥ $100M. (Refer to DOE G 413.3-17, current version).	The approval authority is the PME instead of Program Secretarial Officer (PSO). Combine the Mission Need Statement (MNS) and Program Requirements Document (PRD) into one document.
For Major System Projects, or for projects as designated by the CE, PM will conduct an Independent Cost Review (ICR).	N/A. Substitute the independent cost estimate (ICE) performed by the Office of Cost Estimating and Program Evaluation (NA-1.3) with a cost estimate on the alternative within the combined MNS/PRD performed by the Office of Management and Budget (NA-MB).
For Major System Projects, the Project Management Risk Committee (PMRC) will review and analyze the CD and make recommendations to the ESAAB, CE, or PME, as applicable, before approval.	N/A – does not apply to this class of projects.
For NNSA only, prepare a Program Requirements Document that defines the ultimate goals that the project must satisfy. (Refer to NNSA Business and Operating Policy).	The approval authority is the PME instead of PSO. Combine the MNS and PRD into one document. NA-MB must perform the PRD alternative cost.
For Hazard Category 1, 2, and 3 nuclear facilities*, and to the specificity possible, document DOE expectations for Safety-in-Design. (Refer to DOE-STD-1189-2016).*	N/A – does not apply to this class of projects.

Post CD-0 Approval	CD-0 approval is substituted with the PME approval of the combined MNS/PRD.
Submit all CD documents to PM.	Document is a PDF upload of the PME-approved MNS/PRD.
Develop a Project Data Sheet (PDS) for Line-Item Projects to request Project Engineering and Design (PED) funds. Develop funding documents for MIE or OE projects for the design, and OMB A-11 business cases. (Refer to DOE CFO Budget Call for PDS and Business Case Template).	None – no change to the current process.
Initiate monthly PARS reporting (excluding earned value data). FPD, Program Manager, and PM will provide monthly assessments, as appropriate.	None – no change to the current process.
Initiate Quarterly Project Reviews (QPRs) with the PME or their designee.	None – no change to the current process.
Conduct a project peer review of active projects when the top-end range is $100M or greater.	N/A – does not apply to this class of projects.
Proceed with conceptual planning and design used to develop alternative concepts and functional requirements using operating funds.	Develop alternative concepts and perform associated, abbreviated Business Case Analyses (BCAs) prior to MNS/PRD approval.

DOE O 413.3B Table 2.1: CD-1 Requirements Crosswalk

Prior to CD-1	**Tailoring**
Approve an Acquisition Strategy (AS) with endorsement from PM for Major System Projects. (Refer to DOE G 413.3-13, current version).	The AS approval authority is the PME instead of the PSO. Include the AS in the preliminary project execution plan (PPEP) as part of PPEP approval.
Approve a preliminary Project Execution Plan (PEP). The Tailoring Strategy, if required, can be included in the PEP, or placed in a separate document. (Refer to DOE G 413.3-15, current version.)	None – no change to the current process.
Approve appointment of the Federal Project Director considering the requirements in DOE O 361.1C, current version.	The Federal Project Director (FPD) is identified in the PPEP and appointed with PPEP approval. The FPD is matrixed to the project and remains an employee of their home office.
Establish and charter an Integrated Project Team (IPT) to include a responsibility assignment matrix. The Charter may be included in the PEP. (Refer to DOE G 413.3-18, current version).	No independent IPT charter; the matrixed IPT members are identified in the PPEP's roles and responsibilities section.

Develop a Risk Management Plan (RMP) and complete an initial risk assessment of a recommended alternative. This may be included in the PEP. For evaluating the Safety-in-Design strategy, prepare Risk and Opportunity Assessments for input to the RMP. (Refer to DOE G 413.3-7, current version, and DOE-STD-1189-2016.)	The RMP is included in the PPEP, and a qualitative risk analysis shall assess whether the current upper end of the range will encompass the expected management reserve or contingency within the 15% goal.
For projects with a TPC > $100M, PM will develop an Independent Cost Estimate and/or conduct an Independent Cost Review, as they deem appropriate.	N/A – does not apply to this class of projects.
For projects with a TPC ≥ $100M, the PMRC will review and analyze the CD and make recommendations to the ESAAB, CE, or PME, as applicable, before approval.	N/A – does not apply to this class of projects.
Comply with the One-for-One Replacement legislation (excess space/offset requirement) as mandated in House Report 109-86.	Include the one-for-one replacement plan mandated by House Report 109-86 in the PPEP.
For Major System Projects, develop a Design Management Plan that establishes design maturity targets at critical milestones through final design.	N/A – does not apply to this class of projects.
Complete a Conceptual Design.	None – no change to the current process.
Incorporate and document compliance with climate adaptation, resilience, and sustainability requirements (refer to Appendix C, Paragraph 5.), support for the Site Sustainability Plan(s) per DOE O 436.1 (current version) and/or other high performance and sustainable building considerations (refer to DOE G 413.3-6, current version, and Guiding Principles for Sustainable Federal Building) in the PEP, Conceptual Design Report and Acquisition Strategy as appropriate.	Include the sustainability plan in the PPEP.

Conduct a Design Review of the conceptual design with reviewers external to the project.	The FPD leads the review using support, as necessary, after the conceptual design is completed. This project review consists of reviewing the project documents to determine if the scope and project requirements are defined well enough to award the design or design-build contract, confirming that the Key Performance Parameters (KPPs) and other Program Requirements are being met, the contractor level of effort, and the overall cost and schedule. SD 413.3-1, *Project Reviews* does not apply. Design review support may use Management and Operating contractor (M&O), Inter-Agency Agreement (IA) or other project personnel instead of reviewers external to the project. The federal and M&O contractor authorizing/accepting authorities for security, cybersecurity, operational technology assurance, information technology, environment and sustainability, and safety (especially fire protection) will review the design to ensure it conforms with their requirements to occupy and operate the facility.
For Hazard Category 1, 2, and 3 nuclear facilities, *a Code of Record must be initiated during the conceptual design.*	N/A – does not apply to this class of projects.
Complete a Conceptual Design Report. Refer to Appendix C, Paragraph 8.	The conceptual design report does not include a section on the alternatives analyzed nor the basis for the selected alternative, as this was performed prior to MNS/PRD approval.
Conduct an Analysis of Alternatives (AoA) that is independent of the contractor organization responsible for managing the construction or constructing the capital asset project, for projects with an estimated TPC greater than $50M. (Refer to GAO-16-22).	No AoA is performed; the necessary alternative evaluation and selection was performed with an abbreviated BCA prior to MNS/PRD approval.
For Major System Projects, or first-of-a-kind engineering endeavors, conduct a Technology Readiness Assessment and develop a Technology Maturation Plan, as appropriate. At this stage, each critical technology item or system must achieve a Technology Readiness Level-4 (TRL-4). (Refer to DOE G 413.3-4, current version).	N/A – does not apply to this class of projects.
Prepare a Preliminary Hazard Analysis Report (PHAR) for facilities that are below the Hazard Category 3 nuclear facility threshold as defined in 10 CFR Part 830, Subpart B.	None – no change to the current process.

Develop and implement an Integrated Safety Management Plan into management and work process planning at all levels per DOE G 450.4-1 (current version).	Include the Integrated Safety Management (ISM) plan in the PPEP. Restricting all functional oversight – safety, quality, environmental, and security – inspection frequencies to a maximum of twice monthly per functional area unless inspectors find significant issues. For work directly performed by Management and Operating Contractor (M&O) personnel, refer to the M&O's approved DOE Integrated Safety Management plan. For work not directly performed by M&O personnel (i.e., construction contractor) use approved Construction Safety and Health Plan incorporating OSHA+ approach (see Attachment 2, section 2.b.(7)).
Establish a Quality Assurance Program (QAP). (Refer to 10 CFR Part 830, Subpart A, DOE O 414.1, current version and DOE G 413.3-2, current version). For nuclear facilities, the applicable national consensus standard shall be NQA-1-2008 (Edition) and NQA-1a-2009 (Addenda).	Include the QAP plan in the PPEP. Reduce functional oversight to align with commercial standards. Safety, quality, environmental, and security inspection frequencies are reduced to a maximum of twice monthly per functional area. If significant issues are found, additional inspections may be performed after coordination with the FPD. Inspection frequencies will subsequently revert to a maximum of twice monthly per functional area after the issues are resolved. All inspections will be conducted concurrently to the maximum extent practicable to minimize disruption of on-site activities.
Identify general Safeguards and Security requirements for the recommended alternative. (Refer to DOE O 470.4, current version and DOE G 413.3-3, current version).	Include safeguards and security requirements included in the PPEP. Reduce functional oversight to align with commercial standards. Safety, quality, environmental, and security inspection frequencies are reduced to a maximum of twice monthly per functional area. If significant issues are found, additional inspections may be performed after coordination with the FPD. Inspection frequencies will subsequently revert to a maximum of twice monthly per functional area after the issues are resolved. All inspections will be conducted concurrently to the maximum extent practicable to minimize disruption of on-site activities.

Complete a National Environmental Policy Act (NEPA) Strategy by issuing a determination (e.g., Environmental Assessment), as required by DOE P 451.1, current version. Prepare an Environmental Compliance Strategy, including a schedule for timely acquisition of required permits and licenses.	NEPA strategy included in the PPEP.
Update Project Data Sheet, or other funding documents for MIE and OE projects, and A-11 Business Case, if applicable. This must contain an estimate of the required amount of PED funds to execute the planning and design portion of a project (period from CD-1 to completion of the project's design). (Refer to DOE CFO Budget Call for PDS and Business Case Template).	None – no change to the current process.
Conduct a Preliminary Security Risk Assessment, if necessary. (Refer to DOE O 470.4, current version and DOE G 413.3-3, current version).	None – no change to the current process.
***For Hazard Category 1, 2, and 3 nuclear facilities**, prepare a Safety Design Strategy (SDS) to guide the development of the conceptual design, with the concurrence of the CNS or with written advice of the CDNS, as appropriate, for projects subject to DOE-STD-1189-2016.*	N/A – does not apply to this class of projects.
***For Hazard Category 1, 2, and 3 nuclear facilities**, conduct an Independent Project Review (IPR) to ensure early integration of safety into the design process. (Refer to DOE G 413.3-9, current version and DOE-STD-1189-2016).*	N/A – does not apply to this class of projects.
*Prepare a Conceptual Safety Design Report (CSDR) **for Hazard Category 1, 2, and 3 nuclear facilities**, including preliminary hazard analysis. For a project involving a major modification of an existing facility, the SDS must address the need for a CSDR, as well as the required PDSA. (Refer to DOE-STD-1189-2016).*	N/A – does not apply to this class of projects.
*Prepare a Safety Review Letter, with concurrence from the FPD, on the DOE review of the CSDR **for Hazard Category 1, 2, and 3 nuclear facilities**. (Refer to DOE-STD-1189-2016 and DOE-STD-1104-2016).*	N/A – does not apply to this class of projects.
Post CD-1 Approval	CD-1 approval is consistent with PME approval of the PPEP and is required to authorize the use of TEC funding.
Submit all CD documents to PM.	Documents submitted to the Department of Energy Project Management (DOE-PM) is a pdf upload of the PME-approved PPEP and conceptual design report.
Begin expenditure of PED, MIE, or OE funds for the project design.	None – no change to the current process.

Develop an Acquisition Plan, if applicable.	Include the acquisition plan in the Project Execution Plan (PEP), following the acquisition strategy.
Continue monthly PARS reporting (excluding earned value). FPD, Program Manager and PM will provide monthly assessments, as appropriate.	Reporting consists of a progress narrative, TPC and project completion date forecasts, a progress color assessment rating as defined in DOE Project Assessment and Reporting System (PARS), the native file of the Integrated Master Schedule (IMS) Baseline and Status schedules, and a similar report to the Contractor Performance Report (CPR) Format 1.
Annually conduct project peer reviews of active projects when the top-end range is $100M or greater. Individuals leading project peer reviews, or other reviews intended to meet the project peer review requirements in this Order, shall elicit lessons learned with potential Department-wide implications and submit them into DOE lessons learned system of record, as described in DOE O 210.2 (current version).	N/A – does not apply to this class of projects.
Continue QPRs with the PME of their designee.	None – no change to the current process.
***For nuclear facilities**, develop a Checkout, Testing and Commissioning Plan in preparation for acceptance and turnover of the structures, systems and components at CD-4. (Refer to DOE-STD-1189-2016).*	N/A – does not apply to this class of projects.

DOE O 413.3B Table 2.2 CD-2 Requirements Crosswalk

Prior to CD-2	**Tailoring**
Approve an updated Acquisition Strategy if there are any major changes to the acquisition approach. Obtain endorsement from PM for Major System Projects. (Refer to DOE G 413.3-13, current version).	If necessary, update the acquisition strategy in the PEP and obtain approval from the PME.
Establish a Performance Baseline, reflective of identified and assessed risks and uncertainties, to include scope, TPC, CD-4 date, and minimum KPPs (if applicable). The key project milestones and completion dates must be stated no less specific than month and year. The scope will be stated in quantity, size and other parameters that give shape and form to the project. The funding assumptions upon which the PB is predicated will be clearly documented and approved. (Refer to DOE G 413.3-5, current version).	In the PEP, include the scope, cost, and schedule performance baselines; KPPs and any other project completion criteria; and Future Years Nuclear Security Plan (FYNSP) funding profile.
Approve updated Project Execution Plan. (Refer to DOE G 413.3-15, current version).	None – no change to the current process.

Prepare a Funding Profile to support the execution of the PB and reflect in the budget document. The funding profile may be included in the PEP.	None – no change to the current process.
Approve Long-Lead Item Procurements, if necessary. Approval may be concurrent with (or prior to) CD-2 approval. (Long-lead item procurement approval will be designated as CD-3A).	The plan for the acquisition of long-lead materials and equipment and incidental site preparations is included in the PPEP and approved with that document.
Develop a Project Management Plan, if applicable. (Refer to Attachment 1).	None – no change to the current process.
Perform a Performance Baseline External Independent Review (EIR) or an Independent Project Review (IPR). PM will conduct EIRs to validate the PB for projects with a TPC ≥ $100M. PM must issue a Performance Baseline Validation Letter to the PSO that describes the cost, schedule, and scope being validated. PMSO will conduct IPRs to validate the PB for projects with a TPC < $100M. (Refer to DOE G 413.3-9, current version). For projects with a TPC ≥ $100M, PM will develop an Independent Cost Estimate (ICE). The ICE will support validation of the PB.	IPR and performance baseline (PB) validation is delegated to the FPD in lieu of a project management support office (PMSO). FPD leads project review, using support, as necessary, prior to the PEP approval. This project review consists of reviewing the project documents, confirming that the KPPs and other Program Requirements are being met, transition to operations requirements is defined, the contractor level of effort, and the overall cost and schedule.
Complete a Preliminary and/or Final Design. ***Hazard Category 1, 2, and 3 nuclear facilities*** *shall achieve at least 90% design completion prior to CD-2 approval. Non-nuclear project designs shall be sufficiently mature to prepare a project baseline with 70-90% confidence prior to CD-2 approval. (See Appendix C, paragraph 7a for definition of 90% design complete).*	The designer of record's quality control, submittal, testing, commissioning, and inspection requirements must be included in the design's construction specifications.
Incorporate and document compliance with climate adaptation, resilience, and sustainability requirements (refer to Appendix C, Paragraph 5.), support for the Site Sustainability Plan(s) per DOE O 436.1 (current version) and/or other high performance and sustainable building considerations (refer to DOE G 413.3-6, current version, and Guiding Principles for Sustainable Federal Buildings) in the PEP, preliminary and/or final designs, and design review reports as appropriate.	None – no change to the current process.

Conduct a Design Review of the preliminary and final designs.	The agent managing the design contract performs the design review of the preliminary and final designs. The review confirms that the design satisfies the project's KPPs and other program/functional requirements and that the designer of record's quality control, submittal, testing, commissioning, and inspection requirements have been included in the construction specifications. The Federal and M&O contractor authorizing and accepting authorities for security, cybersecurity, operational technology assurance, information technology, environment and sustainability, and safety (especially fire protection) will review the design to ensure it conforms with their requirements to occupy and operate the facility.
For Hazard Category 1, 2, and 3 nuclear facilities, *design reviews should include a focus on safety and security systems. Additionally, the Code of Record shall be placed under configuration control during preliminary design. It is controlled during final design and construction with a process for reviewing and evaluating new and revised requirements. New or modified requirements are implemented if technical evaluations determine that there is a substantial increase in the overall protection of the worker, public or environment, and that the direct and indirect costs of implementation are justified in view of this increased protection.*	N/A – does not apply to this class of projects.
Complete a Preliminary Design Report.	None – no change to the current process.
For projects with a TPC ≥ $100M, the PMRC will review and analyze the CD and make recommendations to the ESAAB, CE, or PME, as applicable, before approval.	N/A – does not apply to this class of projects.
Conduct a Project Definition Rating Index Analysis, as appropriate, for projects with a TPC ≥ $100M. PM will review as part of the EIR. (Refer to DOE G 413.3-12, current version).	N/A – does not apply to this class of projects.
For Major System Projects, or first-of-a-kind engineering endeavors, conduct a Technology Readiness Assessment and develop a Technology Maturation Plan, as appropriate. At this stage, each critical technology item or system shall achieve a Technology Readiness Level-7 (TRL-7). (Refer to DOE G 413.3-4, current version.)	N/A – does not apply to this class of projects.

Employ an Earned Value Management System compliant with EIA-748 (current version), or as required by the contract. This is performed by the contractor. (Refer to DOE G 413.3-10, current version.)	Earned Value Management System (EVMS) certification is not required. Substituted for EVMS reporting in PARS is the native file of the IMS Baseline and Status schedules, and a similar report to the CPR Format 1.
Prepare a Hazard Analysis Report for facilities that are below the Hazard Category 3 nuclear facility threshold as defined in 10 CFR Part 830, Subpart B by updating the PHAR based on new hazards and design information.	None – no change to the current process.
Determine that the Quality Assurance Program is acceptable and continues to apply. (Refer to 10 CFR Part 830, Subpart A, DOE O 414.1, current version, and DOE G 413.3-2, current version.)	Include QAP updates in the PEP. Reduce functional oversight to align with commercial standards. Safety, quality, environmental, and security inspection frequencies are reduced to a maximum of twice monthly per functional area. If significant issues are found, additional inspections may be performed after coordination with the FPD. Inspection frequencies will subsequently revert to a maximum of twice monthly per functional area after the issues are resolved. All inspections will be conducted concurrently to the maximum extent practicable to minimize disruption of on-site activities.
Issue the final Environmental Impact Statement or Environmental Assessment and Finding of No Significant Impact, as required by 10 CFR Part 1021. For an Environmental Impact Statement, the appropriate authority shall issue the Record of Decision after CD-2 is granted, but prior to CD-3 approval. (Refer to DOE P 451.1, current version.)	None – no change to the current process.
Update Project Data Sheet, or other funding documents for MIE and OE projects, and A-11 Business Case, if applicable. (Refer to DOE CFO Budget Call for PDS and Business Case Template).	None – no change to the current process.
For Hazard Category 1, 2, and 3 nuclear facilities, *conduct a Technical Independent Project Review (TIPR). The TIPR is required at or near the completion of the preliminary design. The TIPR is not required for non-nuclear facilities. (Refer to DOE G 413.3-9, current version).*	N/A – does not apply to this class of projects.
For Hazard Category 1, 2, and 3 nuclear facilities*, update the Safety Design Strategy, with the concurrence of CNS or with written advice from CDNS, as appropriate, for projects subject to DOE-STD-1189-2016.*	N/A – does not apply to this class of projects.

*Prepare Preliminary Safety and Design Results that update the CSDR **for Hazard Category 1, 2, and 3 nuclear facilities** based on updated hazard analysis and design information. These results complete the preliminary design phase and allow for DOE review prior to completing the final design phase. (Refer to DOE-STD-1189-2016).*	N/A – does not apply to this class of projects.
*Prepare a Safety Review Letter, with concurrence from the FPD, based on a DOE review of the Preliminary Safety and Design Results **for Hazard Category 1, 2, and 3 nuclear facilities**. This DOE review should be scheduled as early as practicable, after contractor completion of the preliminary design, to minimize project risk. (Refer to DOE-STD-1189-2016 and DOE-STD- 1104-2016).*	N/A – does not apply to this class of projects.
*Prepare the PDSA for newly planned **Hazard Category 1, 2, and 3 nuclear facilities** based on updated hazard analysis and design information; also for major modifications of existing facilities. (Refer to 10 CFR Part 830, Subpart B, and DOE-STD-1189-2016).*	N/A – does not apply to this class of projects.
*Prepare a Safety Evaluation Report, with concurrence from the FPD, based on review of the PDSA **for Hazard Category 1, 2, and 3 nuclear facilities**. (Refer to 10 CFR Part 830, Subpart B, and DOE-STD-1104-2016).*	N/A – does not apply to this class of projects.
Post CD-2 Approval	CD-2 approval is combined with CD-3 approval and is substituted with PME approval of the PEP, which is necessary to authorize construction mobilization.
Submit all CD documents, and if there are changes to the PB, submit BCP documents to PM.	Documents submitted to DOE-PM are a pdf upload of the PME-approved PEP and the final design report.
For projects with a TPC ≥ $100M, the PMRC will review and analyze the PB deviation disposition request and make recommendations to the ESAAB, CE, or PME, as applicable, before approval. The resulting BCP must also be presented to the PMRC before convening an ESAAB.	N/A – does not apply to this class of projects.
Obtain PME endorsement on any changes to the approved funding profile that negatively impacts the project.	None – no change to the current process.
Continue monthly PARS reporting (including earned value data). FPD, Program Manager and PM will provide monthly assessments.	Reporting consists of the requirements described in DOE O 413.3B Table 2.1: CD-1 Requirements Crosswalk, Post CD-1 Approval, Row 4, Column 2.
Continue QPRs with the PME or their designee.	None – no change to the current process.

Annually conduct project peer reviews for projects with a TPC > $100M. Individuals leading project peer reviews, or other reviews intended to meet the project peer review requirements in this Order, shall elicit lessons learned with potential Department-wide implications and submit them into DOE lessons learned system of record, as described in DOE O 210.2 (current version).	N/A – does not apply to this class of projects.

DOE O 413.3B Table 2.3: CD-3 Requirements Crosswalk

Prior to CD-3	**Tailoring**
Approve updated CD-2 Project Documentation that reflects major changes from Final Design, the PEP, PB, AS, and PDS/funding documents for MIE and OE funds.	None – no change to the current process.
Complete and review the Final Design for non-nuclear facilities and less than Hazard Category 3 nuclear facilities.	The FPD leads a final design review, using support, as necessary, prior to the PEP approval. The review confirms that the design satisfies the project's KPPs and other program/functional requirements and that the designer of record's quality control, submittal, testing, commissioning, and inspection requirements have been included in the construction specifications. The Federal and M&O contractor authorizing and accepting authorities for security, cybersecurity, operational technology assurance, information technology, and safety (especially fire protection) will review the design to ensure it conforms with their requirements to occupy and operate the facility.
Incorporate and document compliance with climate adaptation, resilience, and sustainability requirements (refer to Appendix C, Paragraph 5.), support for the Site Sustainability Plan(s) per DOE O 436.1 (current version) and/or other high performance and sustainable building considerations (refer to DOE G 413.3-6, current version, and Guiding Principles for Sustainable Federal Building) in the PEP, Conceptual Design Report and Acquisition Strategy as appropriate.	None – no change to the current process.
Employ a certified Earned Value Management System compliant with EIA-748 (current version), or as required by the contract. (Refer to DOE G 413.3-10, current version.)	EVMS system certification is not required. Alternative project controls will be used in lieu of compliant EVMS.

Perform an External Independent Review by PM for Construction or Execution Readiness on all Major System Projects. (Refer to DOE G 413.3-9, current version.) Perform an Independent Project Review by the appropriate PMSO for Non-Major System Projects unless justification is provided and a waiver is granted by the PME. For projects with a TPC ≥ $100M, PM will develop an Independent Cost Estimate.	IPR delegated to FPD in lieu of PMSO. FPD leads project review, using support, as necessary, prior to the PEP approval. This project review consists of reviewing the project documents, confirming that the KPPs and other Program Requirements are being met, transition to operations requirements are defined, the contractor level of effort, and the overall cost and schedule.
For projects with a TPC ≥ $100M, the PMRC will review and analyze the CD and make recommendations to the ESAAB, CE, or PME, as appropriate, before approval.	N/A – does not apply to this class of projects.
For Major System Projects where a significant critical technology element modification occurs subsequent to CD-2, conduct a Technology Readiness Assessment, as appropriate. (Refer to DOE G 413.3-4, current version.)	N/A – does not apply to this class of projects.
Update the Hazard Analysis Report for facilities that are below the Hazard Category 3 nuclear facility threshold as defined in 10 CFR Part 830, Subpart B, based on new hazards and design information.	None – no change to the current process.
Prior to start of construction, prepare a Construction Project Safety and Health Plan in accordance with 10 CFR Part 851, Appendix A, Section 1(d). This plan must be kept current during construction.	Reduce functional oversight to align with commercial standards. For work not directly performed by Management and Operating contractor personnel (i.e., construction contractor) use approved Construction Safety and Health Plan incorporating OSHA+ approach (see Attachment 2, section 2.b.(7)). This satisfies 10 Code of Federal Regulations 851, Appendix A, section 1(d).
Update the Quality Assurance Program for construction, field design changes, and procurement activities. (Refer to 10 CFR Part 830, Subpart A, DOE O 414.1, current version, and DOE G 413.3-2, current version.)	Include QAP updates in the PEP. Reduce functional oversight to align with commercial standards. Safety, quality, environmental, and security inspection frequencies are reduced to a maximum of twice monthly per functional area. If significant issues are found, additional inspections may be performed after coordination with the FPD. Inspection frequencies will subsequently revert to a maximum of twice monthly per functional area after the issues are resolved. All inspections will be conducted concurrently to the maximum extent practicable to minimize disruption of on-site activities.

Finalize the Security Risk Assessment Report, if necessary. (Refer to DOE O 470.4, current version and DOE G 413.3-3, current version.)	None. Reduce functional oversight to align with commercial standards. Safety, quality, environmental, and security inspection frequencies are reduced to a maximum of twice monthly per functional area. If significant issues are found, additional inspections may be performed after coordination with the FPD. Inspection frequencies will subsequently revert to a maximum of twice monthly per functional area after the issues are resolved. All inspections will be conducted concurrently to the maximum extent practicable to minimize disruption of on-site activities.
Post CD-3 Approval	CD-3 approval is combined with CD-2 approval and is substituted with PME approval of the PEP, which is necessary to authorize construction mobilization.
Submit all CD documents to PM.	Documents submitted to DOE-PM are a pdf upload of the updated PEP and the final design report.
Commit all the resources necessary, within the funds provided and within the TPC, to execute the project.	None – no change to the current process.
For projects with a TPC ≥ $100M, the PMRC will review and analyze the PB deviation disposition request and make recommendations to the ESAAB, CE, or PME, as applicable, before approval. The resulting BCP must also be presented to the PMRC before convening an ESAAB.	N/A – does not apply to this class of projects.
Within 90 days, submit Lessons Learned not previously recognized regarding up-front project planning and design int the DOE lessons learned system of record, as described in DOE O 201.2 (current version) for projects with a TPC ≥ $100M.	Submit project lessons learned into the lessons learned repository in DOE OPEXShare at the time of project closeout only.
Update PDS, or other funding documents for MIE and OE, and A-11 Business Case, if applicable. (Refer to DOE CFO Budget Call for PDS and Business Case Template).	None – no change to the current process.
Conduct EVMS surveillance to ensure compliance with EIA-748 (current version), or as defined in the contract. Contractor must conduct the surveillance annually.	EVMS system certification is not required. Alternative project controls will be used in lieu of compliant EVMS.
Continue monthly PARS reporting (including earned value data). FPD, Program Manager and PM will provide monthly assessments.	Reporting consists of the requirements described in DOE O 413.3B Table 2.1: CD-1 Requirements Crosswalk, Post CD-1 Approval, Row 4, Column 2.
Continue QPRs with the PME or their designee.	None – no change to the current process.

Continue annual project peer reviews for projects with a TPC > $100M. Individuals leading project peer reviews, or other reviews intended to meet the project peer review requirements in this Order, shall elicit lessons learned with potential Department-wide implications and submit them into the DOE lessons learned system of record, as described in DOE O 210.2 (current version).	N/A – does not apply to this class of projects.

DOE O 413.3B Table 2.4: CD-4 Requirements Crosswalk

Prior to CD-4	**Tailoring**
Verify that Key Performance Parameters and Project Completion Criteria have been met and that mission requirements have been achieved. The FPD will verify and document the scope accomplished, TPC, KPPs met, and the completion date as it relates to the original CD-2 performance baseline and the latest approved baseline change.	None – no change to the current process.
Issue a Project Transition to Operations Plan[3] that clearly defines the basis for attaining initial operating capability, full operating capability, or project closeout, as applicable. The plan will include documentation, training, interfaces, and draft schedules. (Refer to DOE G 413.3-16, current version.)	Include the transition to operations plan in the PEP.
For non-nuclear projects, conduct a formal assessment of the project's Readiness to Operate, as appropriate. Determine the basis for DOE acceptance of the asset and if the facility or area can be occupied from both a regulatory and a work function standpoint. Establish a beneficial occupancy/utilization date for the facility and/or equipment.	Contractors must adjust procedures related to acceptance of work performed using the SD's risk, design & submittal review, quality control, commissioning, and inspection reforms without an acceptance review prior to operating the facility to enable acceptance of capital assets performed using this SD.
Finalize the Hazard Analysis Report for facilities that are below the Hazard Category 3 threshold as defined in 10 CFR Part 830, Subpart B.	None – no change to the current process.
Revise the Environmental Management System in accordance with DOE O 436.1 (current version), as appropriate.	None – no change to the current process.
If applicable, complete and submit Contractor Evaluation Documents to the PME, the appropriate PSO, Federal procurement office, and PM in accordance with FAR 42.15.	None – no change to the current process.
For projects with a TPC ≥ $100M, the PMRC will review and analyze the CD and make recommendations to the ESAAB, CE, or PME, as applicable, before approval.	N/A – does not apply to this class of projects.
Conduct an Operational Readiness Review (ORR) or Readiness Assessment (RA) ***for Hazard Category 1, 2, and 3 nuclear facilities*** *in accordance with DOE O 425.1, current version.*	N/A – does not apply to this class of projects.

Prepare the Documented Safety Analysis with Technical Safety Requirements ***for Hazard Category 1, 2, and 3 nuclear facilities****. (Refer to 10 CFR Part 830, Subpart B).*	N/A – does not apply to this class of projects.
Prepare a Safety Evaluation Report (SER) based on a review of the Documented Safety Analysis and Technical Safety Requirements ***for Hazard Category 1, 2, and 3 nuclear facilities****. (Refer to 10 CFR Part 830, Subpart B, and DOE-STD-1104-2016).*	N/A – does not apply to this class of projects.
For nuclear facilities, *the Code of Record must be included as part of the turnover documentation from a design and construction phase contractor to the operating phase contractor; from an operating phase contractor to the decommissioning phase contractor; and when a change in contractor occurs during any single life-cycle phase and is maintained under configuration control. (Refer to DOE-STD-1189-2016)*	N/A – does not apply to this class of projects.
Post CD-4 Approval	CD-4 approval is consistent with the submission by the FPD of the report to the PME, verifying that the KPPs and Project Completion Criteria have been met, the scope accomplished, TPC, and completion date.
Submit all CD documents to PM.	Documents submitted to DOE-PM are the FPD report verifying that the KPPs and Project Completion Criteria have been met, the scope accomplished, TPC, and completion date.
Finalize PARS reporting (including reporting earned value data through completion of the PMB).	Reporting consists of the requirements described in DOE O 413.3B Table 2.1: CD-1 Requirements Crosswalk, Post CD-1 Approval, Row 4, Column 2.
Within 90 days, submit Lessons Learned not previously recognized regarding project execution and facility start-up into the DOE lessons learned system of record, as described in DOE O 210.2 (current version).	Submit project lessons learned into the lessons learned repository in DOE OPEXShare at project completion only.
Within 90 days, submit an Initial Project Closeout Report.	None – no change to the current process.

DOE O 413.3B Table 2.5: Project Closeout Requirements Crosswalk

Prior to Project Closeout	Tailoring
Perform final administrative and financial closeout. Prepare the final Project Closeout Report once all project costs are incurred and invoiced and all contracts are closed. The report includes final cost details as required to include claims and claims settlement strategy where appropriate. (Refer to DOE G 413.3-16, current version.)	None – no change to the current process.
Complete and document achievement of climate adaptation, resilience, and sustainability requirements (refer to Appendix C, Paragraph 5.), support for the Site Sustainability Plan(s) per DOE O 436.1 (current version), and/or other high performance and sustainable building considerations (refer to DOE G 413.3 6, current version, and Guiding Principles for Sustainable Federal Buildings) which were documented in the PEP, as applicable.	None – no change to the current process.
Establish and/or update the property record in the Facilities Information Management System (FIMS) for all construction of or modifications to real property. (Refer to DOE O 430.1, current version.)	None – no change to the current process.

APPENDIX B: PROJECT PROCESS – OVERVIEW OF ROLES AND RESPONSIBILITIES

Project Phase	FPD Roles & Responsibilities	Heads of NNSA Program or Field Elements (Heads of NNSA Elements) Roles & Responsibilities
Planning: Approve Mission Need Statement (MNS) & Program Requirements Document (PRD)	Support: Be aware of the need for a capital asset project.	Lead: Generate mission needs and program requirements. Finalize the MNS/PRD. Identify and provide funding. Determine method to close the mission gap, including any necessary business case analyses. Establish the rough order of magnitude (ROM) cost range.
Pre-Preliminary Project Execution Plan (PPEP): Approve Preliminary Performance Baselines	Lead: Lead the matrixed Integrated Project Team (IPT). Develop the PPEP, including preliminary scope, cost, and schedule baselines. Oversee the conceptual design with change control discipline. Ensure that project requirements are met. Develop the acquisition strategy and oversee the procurement plan. Oversee the qualitative risk analysis. After Project Management Executive (PME) approval, maintain the PPEP with change control.	Lead: Establish a matrixed IPT. Develop project budget and provide funding. Manage/adjust program requirements, as necessary, to meet mission needs. Concur with proposed preliminary baselines and manage/establish project budget accordingly. Support: Assist in preparation and approval of the PPEP, including preliminary performance baselines and acquisition strategy. Approve scope changes per the change control table in the PPEP. Review conceptual design deliverables.
Pre- Project Execution Plan (PEP): Performance Baseline	Lead: Develop the PEP. Oversee design contracts/IAs to support project requirements. Obtain PME approval of the performance baseline after receipt of bids. Oversee any long lead procurements. After PME approval, maintain PEP under change control. Support: Incorporate any changes in project requirements identified by the Head of NNSA Program and Field Elements.	Lead: Make trade-off decisions during design that impact project requirements or costs. Manage/adjust project requirements, as necessary, to meet mission needs. Concur with project baselines and manage/establish project budget accordingly. Support: Review design deliverables. Assist in the preparation and development of the updated PEP, including performance baseline and acquisition strategy.

Post PEP: Prepare for Project Completion	Lead: Oversee the award of construction contracts/ Inter-Agency Agreements (IAs) to achieve project baseline. Identify and manage site integration issues. Manage the project baseline. Identify and request baseline changes for any unforeseen changes or project requirement changes identified by the Head of NNSA Program and Field Elements. Implement approved changes identified by the Heads of NNSA Elements. Manage change control in accordance with the PEP. Oversee final inspections and commissioning. Manage punch list items and warranty issues. Accept the project and establish the Beneficial Occupancy Date (BOD). Turnover completed project to operations. Complete contract(s) and project closeout activities. Support: Work with Heads of NNSA Elements to mitigate barriers to construction execution. Develop and adjust requirements to accommodate any changes to the project identified by the Heads of NNSA Elements. Provide information necessary for trade-off analysis and decisions.	Lead: Identify any changes required to meet mission needs. Identify site integration issues. Provide funding in accordance with approved baseline. Manage project budget. Initiate plan for future operations of completed project. Support: Review monthly project communications to ensure project requirements are being met. Evaluate/accept project for operations and verify mission need/requirements were met.

*This table is a summary with specific roles and responsibilities outlined in accordance with the PPEP/PEP.

APPENDIX C: ACRONYMS/ABBREVIATIONS

a.	AoA	Analysis of Alternatives
b.	APR	Annual Project Review
c.	AS	Acquisition Strategy
d.	BCA	Business Case Analysis
e.	BOD	Beneficial Occupancy Date
f.	CD	Critical Decision
g.	CE	Chief Executive for Project Management
h.	CFO	Chief Financial Officer
i.	CFR	Code of Federal Regulations
j.	CO	Contracting Officer
k.	COR	Contracting Officer's Representative
l.	CPR	Contract Performance Report
m.	CRD	Contractor Requirements Document
n.	DEAR	DOE Acquisition Regulations
o.	DMP	Design Management Plan
p.	DOE	Department of Energy
q.	DOE-PM	Department of Energy's Office of Project Management
r.	EIR	External Independent Review
s.	EMC²	Enhanced Minor Construction and Commercial
t.	ESAAB-E	Energy Systems Acquisition Advisory Board Equivalent
u.	EVMS	Earned Value Management System
v.	FAR	Federal Acquisition Regulation
w.	FFP	Firm Fixed Price
x.	FOM	Head of NNSA Field Element
y.	FPD	Federal Project Director
z.	FYNSP	Future Years Nuclear Security Plan
aa.	G	Guide
bb.	GAO	Government Accountability Office
cc.	HQPM	Headquarters Project Manager

dd.	IA	Inter-Agency Agreement
ee.	ICE/R	Independent Cost Estimate/Review
ff.	IMS	Integrated Master Schedule
gg.	IPR	Independent Project Review
hh.	IPT	Integrated Project Team
ii.	ISM	Integrated Safety Management
jj.	KPP	Key Performance Parameter
kk.	LEED	Leadership in Energy and Environmental Design
ll.	M	Million
mm.	M&O	Management and Operating Contractor
nn.	MIE	Major Items of Equipment
oo.	MNS	Mission Need Statement
pp.	NA-1.3	Office of Cost Estimating and Program Evaluation
qq.	NA-90	Office of Infrastructure
rr.	NA-ESH	Office of Environmental, Safety, and Health
ss.	NA-IM	Office of the Associate Administrator for Information Management and Chief Information Officer
tt.	NA-MB	Office of Management and Budget
uu.	NAP	NNSA Policy
vv.	NEPA	National Environmental Policy Act
ww.	OE	Operating Expense
xx.	OSHA	Occupational Safety and Health Administration
yy.	PARS	Project Assessment and Reporting System
zz.	PB	Performance Baseline
aaa.	PED	Project Engineering and Design
bbb.	PEP	Project Execution Plan
ccc.	PDS	Project Data Sheet
ddd.	PM	Project Management
eee.	PMCDP	Project Management Career Development Program
fff.	PME	Project Management Executive
ggg.	PMRC	Project Management Risk Committee

hhh.	PMSO	Project Management Support Office
iii.	PPBE	Planning, Programming, Budgeting, and Evaluation
jjj.	PPEP	Preliminary Project Execution Plan
kkk.	PRD	Program Requirements Document
lll.	PSO	Program Secretarial Officer
mmm.	QAP	Quality Assurance Program
nnn.	RMP	Risk Management Plan
ooo.	ROM	Rough-Order of Magnitude
ppp.	SD	Supplemental Directive
qqq.	SIH	Standard Industrial Hazards
rrr.	STD	Standard
sss.	TPC	Total Project Cost

APPENDIX D: REFERENCES

a. Federal Acquisitions Regulation and Office of Federal Procurement Policy guidance.

b. Department of Energy (DOE) Acquisition Regulations (DEAR).

c. Office of Management and Budget (OMB) Circular A-11 for Capital Acquisition Projects and its associated Capital Programming Guide.

d. DOE Order 413.3B, *Program and Project Management for the Acquisition of Capital Assets*, dated 1-12-21.

e. DOE Order 450.2, *Integrated Safety Management*, dated 01-17-17.

f. DOE Guide (G) 413.3-1, *Managing Design and Construction Using Systems Engineering*, dated 10-22-15.

g. DOE G 413.3-4A, *Technology Readiness Assessments Guide*, dated 10-22-15.

h. DOE G 413.3-7A, *Risk Management Guide*, dated 11-22-21.

i. DOE G 413.3-13, *U.S. Department of Energy Acquisition Strategy Guide for Capital Asset Projects*, dated 10-22-15.

j. DOE G 413.3-15A, *Project Execution Plans*, dated 09-14-18.

k. DOE G 413.3-17, *Mission Need Statement*, dated 10-22-15.

l. DOE G 413.3-18A, *Integrated Project Team Guide for Formation and Implementation*, dated 10-22-15.

m. Government Accountability Office (GAO) Best Practices GAO-20-195G, *Cost Estimating and Assessment Guide*, dated 03-12-20.

n. NNSA Policy (NAP) 130.1A, *Planning, Programming, Budgeting, and Evaluation (PPBE) Process*, dated 12-09-19.

o. NAP 413.3A, *Responsibilities for Independent Cost Estimates*, dated 04-30-21.

p. NAP 413.4, *Technology Readiness Assessment*, dated 12-22-16.

q. NNSA Supplemental Directive (SD) 413.3, *Program and Project Management for the Acquisition of Capital Assets*, dated 05-18-21.

r. NNSA SD 413.3-1, *Project Reviews*, dated 05-10-21.

s. NNSA SD 413.3-4, *Program Requirements Document*, dated 09-15-21.

t. NNSA SD 413.3-6, *Energy Systems Acquisition Advisory Board Equivalent (ESAAB-E) Process*, dated 03-01-22.