

SUPPLEMENTAL DIRECTIVE

NNSA SD 413.3-1

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PROJECT REVIEWS



NATIONAL NUCLEAR SECURITY ADMINISTRATION Office of Acquisition and Project Management

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PROJECT REVIEWS

1. PURPOSE. To establish the requirements and describe the processes for conducting Project Reviews on active projects executed by the National Nuclear Security Administration (NNSA).
2. AUTHORITY.
 - a. Department of Energy (DOE) Order 413.3B, Change 6, *Project Management for the Acquisition of Capital Assets*.
 - b. DOE Order 420.1C Change 3, *Facility Safety*.
 - c. 10 Code of Federal Regulations 830, *Nuclear Safety Management*.
3. CANCELLATION. Business Operating Procedure 413.4, *Project Reviews*, dated 11-18-14.
4. APPLICABILITY.
 - a. Federal. This applies to all NNSA Capital Line Item and Major Items of Equipment (MIE) projects with Total Project Cost >=\$50 million.
 - b. Contractors. Does not apply to contractors.
 - c. Equivalencies/Exemptions.
 1. Equivalency. In accordance with the responsibilities and authorities assigned by Executive Order 12344, codified at 50 United States Code (U.S.C.) sections 2406 and 2511, and to ensure consistency throughout the joint Navy/DOE Naval Nuclear Propulsion Program, the Deputy Administrator for Naval Reactors (Director) will implement and oversee requirements and practices pertaining to this Directive for activities under the Director's cognizance, as deemed appropriate.
 2. Exemption. General Plant Projects and third-party financed projects constructed for NNSA.
5. SUMMARY OF CHANGES.
 - a. Aligns with the DOE Order 413.3B Change 6. The order changed the applicability to projects from >\$20M to >\$50M.
 - b. Defines duties of NNSA elements related to project reviews.
 - c. Clarifies and expands expectations of reviews and the review process.

6. BACKGROUND.

The Project Management Executive (PME) uses three types of reviews to determine the readiness of a project prior to proceeding into subsequent phases or to determine the overall status of the project.

The principal customers of the reviews are the Administrator, the Principal Deputy Administrator, the Program Secretarial Officer (Deputy and Associate Administrators), PMEs, Federal Project Directors, Program Managers, and key external stakeholders. The review results provide NNSA leadership with the status of projects and assist management in their project decisions, in accordance with the DOE Acquisition Management System.

The National Research Council has recognized the value of NNSA conducting internal, non-advocate reviews as a means of improving overall project performance.

- a. Independent Project Reviews (IPRs) evaluate the readiness of a project to achieve particular Critical Decision (CD) milestones during project execution.
- b. Technical Independent Project Reviews (TIPRs) are conducted on high risk, high hazard, and Hazard Category 1, 2, or 3 nuclear projects at or near the completion of preliminary design. TIPRs ensure the requirements of DOE Order 420.1C Change 3, *Facility Safety*; DOE Standard (STD) 1189-2016, *Integration of Safety into the Design Process*; DOE STD 1020-2016, *Natural Phenomena Hazards Analysis and Design Criteria for DOE Facilities*; and DOE STD 3009-2014, *Preparation of Nonreactor Nuclear Facility Documented Safety Analysis*, are being appropriately incorporated into the project design and that development of project safety documentation is compliant with the Order and Standards.
- c. Peer Reviews (PRs) consist of two types and are used to determine the overall status of a project: Annual Peer Reviews (APRs) and For Cause Peer Reviews (FCPRs).
 1. APRs are conducted annually on all NNSA line item projects to provide expert corroboration and evaluation of a project's scope, cost, schedule, and technical progression. Circumstances may arise that would make an annual review unnecessary (project is placed on-hold, project acquisition or technical approach being revisited, good project cost and schedule performance, etc.) The requirement for a review will be coordinated among stakeholders with the final decision residing with the Office of Acquisition and Project Management (NA-APM).
 2. FCPRs are initiated due to a significant decline in project performance, as depicted on the *Monthly Project Status Report for the Deputy Secretary*, or from other sources. These reviews will be conducted if the project has not corrected identified performance issues (e.g., project performance changes

from green to yellow or from yellow to red status on the DOE project *stoplight* report).

7. REQUIREMENTS.

- a. This directive must be applied in conjunction with the requirements established by the most current version of DOE Order 413.3, unless otherwise noted herein.
- b. A memorandum (charge memo) must authorize a review.
- c. All reviews must be based on a detailed review plan.
- d. A final report containing detailed results of the review must be completed.
- e. All review team members must be subject matter experts in their designated area of the review.
- f. All reviews must assess the progress to the next milestone (e.g. Critical Decision); provide a thorough assessment of technical approach (including nuclear safety for Hazard Category 1, 2, and 3 nuclear facilities); cost, schedule, and risks; management and acquisition (M&A); environment, safety, and health (ES&H); quality assurance (QA); commissioning, startup, and transition to operations; and address specific direction of the charge memo.

8. RESPONSIBILITIES.

- a. Project Management Executive (PME).
 1. Approves project's Critical Decisions in accordance with DOE O 413.3, latest revision.
 2. Directs a project review via a charge memo with a review scope tailored to the review objectives and the project complexity. Due to NNSA's unique authority, charge memos for major system acquisition projects may be signed by the Principal Deputy Administrator.
- b. Deputy or Associate Administrators/Federal Program Manager.
 1. Manage program.
 2. Budget and fund reviews.
 3. Request a review as needed.
- c. Federal Project Director (FPD).
 1. Responsible and accountable to NA-APM, for project execution.

2. Hosts the review and provides timely access to the documentation and personnel required to complete the review in accordance with the charge memo.
 3. Requests project reviews as needed.
 4. Completes all corrective action plan (CAP) actions as scheduled.
- d. Chief of Defense Nuclear Safety (CDNS).
- For nuclear facilities project reviews:
1. Ensures that TIPRs and IPRs evaluate the qualifications of Integrated Project Team (IPT) members having nuclear safety-related responsibilities and the effective implementation of DOE-STD-1189-2016.
 2. Concurs on the nuclear safety scope and breadth of TIPRs and IPRs and ensures that TIPRs and IPRs evaluate the status of project planning to achieve operational readiness.
 3. Concurs on the charge memorandum, review plans, and associated criteria and review approach documents (CRADs) for reviews of nuclear projects.
 4. Provides qualified nuclear safety experts to participate.
- e. Associate Administrator for Management and Budget (NA-MB-1).
- Provides funding from programs to NA-APM for conducting reviews.
- f. Director of Project Analysis, Oversight and Review (NA-APM-1.1).
1. Reports operationally to the Principal Deputy Administrator to ensure review independence and autonomy.
 2. Reports administratively to NA-APM-1 to ensure integration with acquisition and project management professionals and dissemination of best practices.
 3. Assists the PME by drafting the charge memo.
 4. Schedules, plans, leads, and manages all reviews, typically acting as the review committee leader.
 5. Selects the review committee leader for each review (when not self-performed).

6. Ensures individual reviews produce meaningful assessments of project performance, determines readiness to proceed to the next phase of the project lifecycle, and are responsive to the PME's charge memo.
7. Ensures timeliness of review reporting.
8. Ensures objectivity and independence of reviews, avoiding conflicts of interest and undue influence.
9. Publishes policies and processes to conduct reviews.
10. Acts as the repository for review output, ensuring availability and records management.
11. Provides the budget estimate for the fiscal year's planned reviews.
12. Tracks CAPs to closure; determines when individual actions are complete.
13. Collects and disseminates lessons learned from reviews among sites and projects to facilitate learning across projects, sites, personnel, and phases.
14. Serves as the NNSA liaison to Department of Energy — Project Management for the development of review policy and procedures.

g. Review Committee Leader.

Conducts the review, including leading the pre-review meetings, managing the on-site portion of the review, preparing the review report and CAP, submitting lessons learned, and conducting post-review briefings.

h. NNSA Elements.

Provide qualified personnel to participate in reviews.

9. DEFINITIONS.

- a. Annual Peer Review. Focused in-depth review conducted by non-advocates (federal, other Management and Operating [M&O], or other contractor experts) of the project and supports the design and development of a project. The review should be performed by individuals independent of the project. An annual Peer Review will be conducted for each project with a total project cost (TPC) greater than \$50 million.
- b. Corrective Action Plan (CAP) Closure. CAP closure is the responsibility of NA-APM-1.1 and the FPD. CAP closure is conducted for each project that has had a review with recommendations. Select recommendations are resolved prior to a Critical Decision, or CAP closure is incorporated into the next review. Any

unresolved disagreement between NA-APM-1.1 and the FPD is raised to NA-APM-1 for final decision.

- c. Charge Memorandum. Memorandum directing a Project Review and charging the Review Committee. The memorandum states the purpose for the review, timing, requested tailoring, areas of particular concern, or areas needing special focus during the review.
- d. For Cause Peer Review. Review initiated due to significant decline in a project's performance.
- e. Independent Project Review. An important project management tool that serves to verify the project's mission, organization, development, processes, technical requirements, baselines, progress, etc. IPRs are conducted prior to Critical Decisions to provide the PME an independent assessment of milestone readiness. IPRs are performed by reviewers from within or outside the program, but who have no direct association with the project under review.
- f. Technical Independent Project Review. Conducted prior to initiation of final design for high risk, high hazard, and Hazard Category 1, 2, and 3 nuclear facilities. At a minimum, the TIPR must be conducted prior to CD-2, *Approve Performance Baseline*. The focus of this review is to determine that safety documentation and design is sufficiently conservative and bounding (e.g. within established risk tolerances of safety envelope) to be relied upon for the next phase of the project.

10. ACRONYMS/ABBREVIATIONS.

- a. APM. Acquisition and Project Management
- b. APR. Annual Peer Review
- c. CAP. Corrective Action Plan
- d. CD. Critical Decision
- e. CDNS. Chief of Defense Nuclear Safety
- f. CRDAD. Criteria and Review Approach Document
- g. DOE-PM. DOE Office of Project Management
- h. ES&H. Environment, Safety, and Health
- i. FCPR. For Cause Project Review
- j. FPD. Federal Project Director

- k. IPR. Independent Project Review
- l. IPT. Integrated Project Team
- m. MB. Management and Budget
- n. MIE. Major Item of Equipment
- o. PME. Project Management Executive
- p. PR. Peer Review
- q. QA. Quality Assurance
- r. TIPR. Technical Independent Project Review
- q. TPC. Total Project Cost

11. REFERENCES.

- a. DOE Order 413.3B, *Change 6 Program and Project Management for the Acquisition of Capital Assets*, issued 01-12-21.
- b. DOE Order 420.1C, *Facility Safety*, issued 11-14-19
- c. DOE Order 425.1D, *Change 2, Verification of Readiness to Start Up or Restart Nuclear Facilities*, issued 10-04-19.
- d. DOE Guide 413.3-9A, *Project Review Guide for Capital Asset Projects*, issued 09-14-18.
- e. DOE-STD-1189-2016, *Integration of Safety into the Design Process*, issued 12-22-16.
- f. DOE-STD-3006-2010, *Planning and Conducting Readiness Reviews*, issued 05-06-10.
- g. NNSA SD 413.7, *Project Management for the Acquisition of Capital Assets*, issued 08-09-16.
- h. *NNSA Annual Peer Review, Independent Project Review and Technical Independent Project Review Handbook* (January 2011).
- i. NA-APM, *Conceptual and Preliminary Implementation Guidance for NNSA Capital Line Item Projects* (May 31, 2018).
- j. NA-APM-1.1, *Project Review Standard Practice (SP)*.

12. CONTACT. Office of Project Analysis, Oversight, and Review (NA-APM 1.1),
301-903-3581

BY ORDER OF THE ADMINISTRATOR:

A handwritten signature in black ink, reading "Charles P. Verdon". The signature is written in a cursive style with a large initial "C".

Charles P. Verdon
Acting Administrator

Appendixes:

- A. Types and Timing of Reviews
- B. General Review Process

APPENDIX A: TYPES AND TIMING OF REVIEWS

1. INTRODUCTION.

Line item projects typically progress through five Critical Decisions (CDs), which serve as major milestones approved by the Chief Executive (CE) for Project Management or the Project Management Executive (PME). Each CD marks an authorization to increase the commitment of resources by the program and requires successful completion of the preceding phase or CD. The amount of time between CDs varies.

2. TIMING AND TYPES OF REVIEWS.

- a. Prior to CD-0, *Approve Mission Need*, the Office of Acquisition and Project Management (NA-APM) has no review responsibilities.
- b. CD-1, *Approve Alternative Selection and Cost Range*, Independent Project Review (IPR).
 1. Criteria: Total Project Cost (TPC) top-end > \$50 Million (M)
 2. Responsible Party: NA-APM-1.1
 3. An Independent Project Review (IPR) is required prior to CD-1 to provide assurance that the project can be executed.
- c. A Technical Independent Project Review (TIPR) is conducted at or near the completion of Preliminary Design. (Refer to the NA-APM *Conceptual and Preliminary Implementation Guidance for NNSA Capital Line Item Projects* [Issued May 31, 2018].)
 1. Criteria: Hazard Category 1, 2, 3 nuclear facilities, including modification to nuclear facilities. Excludes building equipment and systems that are not line items and are under \$50M.
 2. Responsible Party: NA-APM-1.1

Note: Ensure that Chief of Defense Nuclear Safety (CDNS) concurs on charge memorandum and review plans for reviews of projects that must implement DOE-STD-1189-2016, *Integration of Safety into the Design Process*.

3. The TIPR must 1) ensure that safety documentation is complete, accurate, and reliable for entry into the next phase of the project; 2) evaluate the Integrated Project Team (IPT) to ensure that appropriate team member functions to support nuclear safety during final design have been established, and appropriately qualified team members have been selected and made available to address nuclear safety-related matters during final design. Completion or closure of the TIPR recommendations, i.e., the corrective action plan (CAP), is not required prior to CD-2 approval.

- d. CD-2, *Approve Performance Baseline*, Independent Project Review (IPR).
 - 1. Criteria: $\$50M < TPC < \$100M$ (top of range estimate)
 - 2. Responsible Party: NA-APM-1.1
 - 3. An IPR is required prior to CD-2 to provide reasonable assurance that, prior to establishing the project baseline, the project can be successfully executed. CD-2 IPRs are required to validate the Performance Baseline (PB) for projects with a TPC greater than \$50M, but less than \$100M. Design-bid-build projects shall be approaching 90% design prior to the IPR, with 90% required for CD-2.

Note: For projects with $TPC > \$100M$, DOE Office of Project Management (PM) performs a CD-2 external independent review (EIR) (DOE O 413.3B, *Program and Project Management for the Acquisition of Capital Assets*)

- e. CD-3, *Approve Start of Construction/Execution*, Independent Project Review (IPR).
 - 1. Criteria: $\$50M < TPC < \$750M$ (top end of range estimate)
 - 2. Responsible Party: NA-APM-1.1
 - 3. An IPR is required prior to CD-3 to verify construction or execution readiness, unless waived by NA-APM. CD-3 IPRs can be combined with CD-2 IPRs. In the case of a combined CD-2/3, the criteria for CD-2 (i.e., ensuring definitive scope, schedule, and cost baselines have been developed) takes precedence.

Note: For projects with $TPC > \$750M$, DOE-PM performs a CD-3 EIR.

- f. Prior to CD-4, *Approve Start of Operations or Project Completion*, NA-APM-1.1 has no review responsibilities unless a review is requested for a specific project.
- g. Peer Reviews.
 - 1. Annual Peer Review
 - (a) Criteria: $TPC > \$50M$ performed every 12 months unless the gap between other required reviews is less than 18 months or within the 18 months preceding CD-4 approval.
 - (b) Responsible Party: NA-APM-1.1
 - (c) APRs are tailored reviews conducted post CD-0 to address project execution or specific project issues or concerns identified during Quarterly Project Reviews, external reviews (e.g., DOE-Inspector

General, the Government Accountability Office, Defense Nuclear Facilities Safety Board, etc.), by the Deputy or Associate Administrators or by the PME. These are focused, in-depth reviews conducted by non-advocates (federal, other M&O, or other contractor experts) of the project and support the design and development of a project. The reviews should be performed by individuals with relevant experience and expertise independent of the project.

- (d) Circumstances (e.g., budget constraints, project placed on-hold, project acquisition or technical approach being revisited, good project cost and schedule performance, etc.) may arise that would make an annual review unnecessary. The requirement for a review will be coordinated among stakeholders with the final decision residing with NA-APM-1.

2. For Cause Peer Review (FCPR).

- (a) Criteria: TPC > \$50M
- (b) Responsible Party: NA-APM-1.1
- (c) FCPRs are initiated due to a significant decline in a project's performance, as described on the *Monthly Project Status Report for the Deputy Secretary*, or from other sources. FCPRs can be initiated by the PME or NA-APM-1. These reviews will generally be conducted if the project has not corrected performance issues as reported (i.e., project performance changes from green to yellow or yellow to red status on the DOE project *stoplight* report). FCPRs may also be initiated due to significant technical issues or obstacles that jeopardize project performance and warrant an independent evaluation and the involvement of the Acquisition Executive in the resolution of the issue.

APPENDIX B: GENERAL REVIEW PROCESS

Reviews exist to make the Federal Project Director (FPD) and the project successful: safe, quality construction on budget in order to fulfil the program's needs. Conducted by a group of subject matter experts, including National Nuclear Security Administration (NNSA) federal employees, outside contractors, and Management and Operating (M&O) employees from other sites, the reviews provide the FPD objective, fact-based feedback on progress and areas of improvement. The reviews are based on policy requirements, the Project Management Executive's (PME) requirements established by the charge memo, and industry best practices. Reviews provide the PME with independent, expert judgement on the project's progress to the next milestone. Reviews are scheduled, planned, and conducted on a continuing basis to a common set of policy-based criteria and adhere to practices established by the Office of Acquisition and Project Management (NA-APM).

- a. Reviews are continuously planned with a 12-month look-ahead schedule. The review schedule is a living document and is adjusted based on project readiness and FPD input. Milestone reviews (Independent Project Reviews [IPRs]) generally take precedence over annual reviews (Annual Peer Review [APR]) in scheduling.
- b. Budgeting should occur annually within the normal NNSA cycle, with Management and Budget (NA-MB) sourcing funds from individual programs (both pre- and post-Critical Decision [CD]-1) based on historic costs and NA-APM estimates of each review. Funding will then be provided directly to NA-APM to reduce the administrative burden of collecting funds from each program and to accelerate the contracting process.
- c. Planning for reviews begins approximately 8 weeks prior to the on-site portion of the review. A charge memorandum is the initiating document and the official direction to conduct a review. This charge memorandum outlines areas and issues that are to be addressed in the review. For nuclear facility project reviews, the Chief of Defense Nuclear Safety (CDNS) concurs on the nuclear safety scope and breadth of reviews through formal concurrence on the charge memorandum, review plans, and associated criteria and review approach documents (CRADs).
- d. Review team rosters are generated at the same time as the charge memorandum and should consist of experts with a variety of backgrounds, experiences, and parent agencies or companies. It is particularly valuable to include M&O employees from other sites who have performed similar work or will be conducting similar work. Contracting for outside experts must occur in sufficient time to have them participate in the full review preparation cycle.
- e. Approximately 6 weeks before the on-site portion of the review, the Office of Project Analysis, Oversight, and Review (NA-APM-1.1) begins weekly planning meetings. These meetings discuss charge questions, due dates, action items, logistics, lines of inquiry, review documents, site access, project tours, and

interviews. Projects must provide review documents at least 4 weeks prior to the on-site review. If documentation is not available 4 weeks prior to the on-site review, the review may be postponed. Review team members evaluate documentary evidence before the on-site portion and develop lines of inquiry used to explore issues further. Review documents must be marked and controlled according to their content; this is particularly important when using outside experts unfamiliar with NNSA document management.

- f. The on-site portion of the review typically lasts 5 days, beginning with a site tour and presentation led by the project team, continues with interviews by the subject matter experts with their counterparts, and concludes with an out-brief presenting the review results to the PME, project and program staffs, and NNSA leadership. Corrective action plan (CAP) status will be reviewed for all recommendations identified during previous project reviews.
- g. The Review Committee Leader provides a summary report of the review to senior leadership within a week of the review completion.
- h. Within 2 weeks of review completion, NA-APM-1.1 provides the FPD and program manager a draft report for factual accuracy review, with comments due to NA-APM-1.1 within 4 weeks of review completion.
- i. NA-APM-1.1 resolves comments and distributes a final report within 60 days of review completion.
- j. Individual CAP action closure is prepared by the FPD and submitted to NA-APM-1.1. The package to close a corrective action must include the explanation for closure (included on the CAP sheet) and the evidence for closure. CAP actions must be addressed prior to a project moving into the next project phase (e.g., preliminary design to final design) or approval of a Critical Decision. NA-APM-1.1 and the FPD jointly approve the CAP closure. The Associate Administrator for Acquisition and Project Management (NA-APM-1) resolves disagreements.
- k. When all corrective actions are completed from a review, NA-APM-1.1 provides a memo to the FPD acknowledging closure of all the actions.
- l. NA-APM-1.1 collects lessons learned from each review, relating to both the review process and NNSA project management in general, adjudicates for those with further applicability, then implements directly or recommends to other elements changes to policies, procedures, training, etc., to realize their benefit.