

14 CRITICAL DECISION PACKAGES

14.1 OVERVIEW

Critical Decisions (CDs), Figure 14-1, are formal determinations made at specific points in a project. CDs are gates to be addressed before a project is allowed to proceed to the next phase or to commit additional resources. A comprehensive request for critical decisions requires development of five major CDs. CDs can be presented either in combination or singly. They include the following:

- ▶ CD-0, Approve Mission Need
- ▶ CD-1, Approve Preliminary Baseline Range
- ▶ CD-2, Approve Performance Baseline
- ▶ CD-3, Approve Start of Construction
- ▶ CD-4, Approve Start of Operations or Project Closeout.

These criteria should be uniformly adopted for all traditional construction projects, using project-specific factors such as complexity, project cost, risk management, and uncertainty. Criteria not appropriate to a particular project need not be addressed, after proper approval. This, however, should be noted in the mission need documentation.

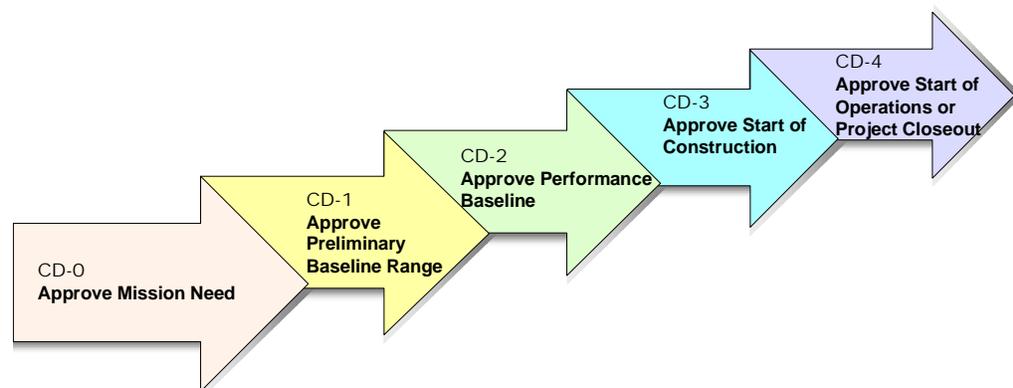


Figure 14-1. Critical Decision Flowchart

Projects other than traditional construction projects include environmental restoration, facility disposition, and privatization. Environmental Restoration (ER) and Facility Disposition (FD) projects are driven by the regulatory requirements in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or the Resource Conservation and Recovery Act (RCRA). Therefore, the critical decisions and thresholds for these projects may be different than those of a traditional construction project.

► ***Environmental Restoration Critical Decisions***

- CD-0, Approve Mission Need
- CD-1, Approve Preliminary Baseline/Proposed Work plan
- CD-2/3, Approve Baseline/Start Field Work
- CD-4, Project Closeout

► ***Facility Disposition (FD) Project Critical Decisions***

- CD-0, Approve Mission Need
- CD-1/2, Approve Performance Baseline
- CD-3, Approve Start of Construction or Remedial Action
- CD-4, Approve Start of Operations or Project Closeout

Because of statutory time limits, potential fines, extensive documentation requirements, and the nature of the CDs, ESAABs may not be required for all environmental restoration or facility disposition CDs at the discretion of the SAE/AE as appropriate.

► ***Privatization Project Critical Decisions***

- CDs for privatization projects are addressed in the Acquisition Plan as these projects are driven by contractual agreements and the risk is shifted to the contractor.

Critical Decisions are a requirement throughout the planning and execution of a project and are necessary before proceeding to the next phase. Partial or phased CDs may also be proposed, depending on the complexity, duration, and needs of the project.

External Independent Review (EIR). An EIR is a review conducted by reviewers outside the DOE. OECM will select an appropriate contract to perform these reviews, excluding M&O/M&I contractors. The selection of reviewers, contract management and contact with the Contracting Officer, and dialogue with the EIR contractor on matters pertaining to the contract are the sole purview of OECM. The PSO's project management support office provides coordination for the EIR contractor on site, resolves issues of schedule and access while on site, gathers and provides requested and proffered information to the reviewers, and responds to the reviewer on errors of fact or needed clarification. The project management support office does not provide direction to the reviewer on the content of the reviewer's report.

EIRs are managed by OECM as DOE's agent. Line management, including the Deputy Secretary, PSO, or a program or project organization within the PSO, may request an EIR. EIRs also may be initiated in response to an external requirement; however, reviews, studies, or investigations conducted by the General Accounting Office or the Office of the Inspector General are not considered EIRs for DOE purposes. OECM coordinates all such reviews with the appropriate PSO to define the review scope, choose an optimal time during the acquisition process to minimize project impacts, minimize the impact on the project by conducting multiple reviews, and evaluate the credentials of potential reviewing organizations and individuals.

The following EIRs are conducted on all projects over \$5M:

- ▶ Performance Baseline Validation EIR. This is a detailed review of the entire project, including and ICE, prior to CD-2. It verifies the mission need; validates the proposed technical, cost, and schedule baseline; and assesses the overall status of the project management and control system.
- ▶ Execution Readiness EIR. This is a general review of the project prior to CD-3 that may range from an abridged review of specific areas within a project to a comprehensive review of the entire project. At a minimum, it verifies the readiness of the project to proceed into construction or remedial action.
- ▶ Independent Cost Estimates (ICEs). ICEs are used to verify project cost and schedule estimates, and support the CD-2 process in establishing project performance baselines. ICEs are part of the Baseline Validation EIR, although an ICE can be combined with an EIR or IPR for efficiency. ICEs may be requested at other times and for other reasons. OECM works through appropriate contracting officers to establish contracts for ICEs. ICEs are documented in formal reports submitted to the SAE/AE by OECM. Each ICE is reconciled with the current Program Office estimate by the Federal project manager.

14.2 REQUIREMENTS FOR CRITICAL DECISION-0

Critical Decision-0 involves the formal conceptualization of a recommended or proposed project and the preparation of an Justification of Mission Need document. This initiates the pre-project planning activities identifying the principle requirements to be met for the project's strategic goals and objectives. The sponsoring organization forwards this documentation to the DOE Program Office/DOE Field Office for review and validation.

Mandatory elements of the Critical Decision-0 documentation include

- ▶ A brief description of the proposed project, explaining integrated mission need in light of technical or other influences on the program
- ▶ Identification of work element priorities and constraints, and a discussion of the pre-project planning process
- ▶ Ensuring that risks associated with the project have been identified, analyzed, and determined to be either avoidable or manageable. This is an essential part of project pre-planning.
- ▶ Special studies, a technical data summary, a feasibility evaluation, characterization studies, and legal reviews (if required) to assure that the base document establishes a consistent and unambiguous understanding of the mission requirements and responsibilities
- ▶ Budget forecasts, financial justification, and strategies explaining any tradeoff in current scope, cost, or schedule based on very preliminary information
- ▶ Identification of project coordination interfaces up to the point of Critical Decision-0 approval and for the transition to Critical Decision-1
- ▶ Request of Project Engineering and Design (PED) funds after development of a preliminary PED document.
- ▶ Preparation of a preliminary acquisition strategy.

14.2.1 Preliminary Acquisition strategy

Acquisition development is a four part process that begins with preconceptual planning and risk identification and analysis.

- ▶ *Preconceptual Planning.* Preconceptual planning focuses on the program's strategic goals and objectives. Before a project is formally initiated, a formal consensus on project objectives, functional requirements, priorities, constraints, and the need for an Acquisition Plan should be documented by the Integrated Project Team (IPT) as a preconceptual planning process output. The IPT is composed of each organizational and customer element that affects and contributes to the project.
- ▶ *Risk Identification and Analysis.* An essential part of project planning is to ensure the risks associated with the project have been identified, analyzed, and determined to be either eliminated, mitigated, or manageable. Risk identification and analyses should be continued through succeeding phases, including preparation of the Acquisition Plan and the Project Execution Plan. Each identified risk is monitored at future CD requests and review points to ensure they have been satisfactorily addressed, eliminated, mitigated, or managed.

14.2.2 CD-0 Key milestones

- ▶ Justification of Mission Need
- ▶ Establish Project Team (IPT)
- ▶ Preliminary Environmental Strategy
- ▶ Technical Organizational Interfaces
- ▶ Integration with other projects and activities
- ▶ Independent mission need validation review
- ▶ Acquisition Strategy
- ▶ Short form Data Sheet
- ▶ Minimum technical and functional requirements
- ▶ Preconceptual development plan
- ▶ Program plan
- ▶ Technology development issues.

14.2.3 CD-0 Acquisition Sequence

The PSO organization prepares the Justification of Mission Need document (in coordination with the appropriate field office, laboratory, or contractor) and initiates preconceptual planning activities. Also, a mission validation external independent review shall be performed through OECM on all projects over \$5M. These activities lead to a CD-0 determination.

14.3 REQUIREMENTS FOR CRITICAL DECISION-1 PACKAGE

Critical Decision-1 reaffirms the mission need for a proposed project and forms the basis for the request to proceed with the preliminary design. It also establishes the preliminary estimate for the project. A Critical Decision-1 package will normally consist of a Critical Decision-1 document and a cover letter of transmittal from the proposing project manager requesting action from the Department of Energy.

Mandatory elements of the Critical Decision-1 document include

- ▶ A brief description of the proposed mission need that provides a summary statement of the program associated with the proposed project, the linkage with Department of Energy strategic and program plans, and the program conditions and drivers that require capital expenditure.
- ▶ The proposed Department of Energy program sponsor that identifies the Department of Energy program office that will provide budget support for the project during execution and later during operation.
- ▶ Preparation of a comprehensive Acquisition Plan and strategy.
- ▶ A draft Project Execution Plan (PEP). The PEP is the primary agreement on planning and objectives between the HQ program office and the field. Roles and responsibilities are established and overall project execution is defined.
- ▶ Preliminary technical functional requirements that describe the physical requirements needed to provide the programmatic capability described above. This is based on a preliminary architectural/engineering program/study that includes end user input and preliminary site criteria identification.
- ▶ Identification of high-level alternatives explored/analyzed in a Conceptual Design Report (CDR) that describes the alternatives considered during the conceptual design phase of the project.

- ▶ A preliminary (baseline range) schedule providing a high-level list of project activities, from the preconceptual phase through the start of operations, presented graphically, and showing Critical Decision milestones including schedule contingencies.
- ▶ A baseline range estimate for Total Project Cost including a high-level, conceptual estimate incorporating the Conceptual Design Report and other project costs to be funded by the sponsoring program, linked to the project Work Breakdown Structure, and including appropriate contingencies.
- ▶ A cost estimate basis/methodology that briefly describes the basis for the estimate, the contingency rationale, the assumptions for equipment, and other principal components of the total project cost (e.g., historical figures adjusted for specifics of the project, contingency level based on perceived technical risk, equipment based on today's costs escalated for inflation, etc.).
- ▶ A preliminary risk assessment that provides a statement identifying probable areas of cost, schedule, or technical risk on the proposed project.
- ▶ A finalized environmental National Environmental Policy Act strategy that presents the anticipated level of National Environmental Policy Act documentation for the project and the plan for completing it in support of the project schedule. Identification of any environmental issues that might impact the project.
- ▶ A Preliminary Hazards Analysis report.
- ▶ Preliminary safety strategy that discusses the anticipated level of safety documentation for the project, the preliminary plan for completing safety documentation in support of the proposed project schedule, and identification of safety issues that might impact the project.
- ▶ The Safeguards and Security that addresses those activities to the degree they are technical objectives and functional requirements that affect the design basis.
- ▶ Relationships or integration with other programs, projects, Department of Energy sites, programs, or facilities that have a programmatic and/or functional relationship to the proposed project. Confirmation that the project is in the related agency's plan or other Department of Energy planning document.
- ▶ A project data sheet for design..

The sponsoring agency or department shall include in the cover transmittal letter any expectation or requirement for specific turnaround time on a decision.

Key to the CD-1 package is the development of a comprehensive Acquisition Plan and strategy.

14.3.1 The Conceptual Design Report

The Conceptual Design Report documents the outcome of the conceptual design phase and forms the basis for the preliminary baseline. It is the anchor document for the initial project validation, which occurs 18 months prior to the first fiscal year of capital funding. Because the timing of validation is driven by the budget cycle and is inflexible, the Conceptual Design Report must be completed by this time to meet Critical Decision milestone requirements.

Expected elements of the Conceptual Design Report include:

- ▶ An introduction and project description containing an overview of the proposed project (design or characterization) and a synopsis of the development activities. In remediation projects, the report is a combination of applicable regulations and characterization.
- ▶ A technical objectives and mission need statement describing the technical and functional requirements to be achieved through execution of the project, as derived from the program/mission need and technical performance outlined in the Justification of Mission Need.
- ▶ An alternatives analysis that provides the details of the alternatives analysis so that the reader can clearly understand the advantages and disadvantages of each alternative. The information should include, at a minimum, life-cycle costs, operational considerations, site development considerations, relationships to other site activities, and the comparison of alternatives that then determine the preferred alternative. Life-cycle costs are to include decontamination and demolition, transition (personnel and equipment moves), utilities, and maintenance. Note: Some decontamination and decommissioning work and some backbone utility modifications may be included in other infrastructure-type projects as part of a master plan, which may preclude requiring its inclusion in a given project.
- ▶ A project schedule for the design baseline and a proposed project summary schedule including project milestones, Critical Decisions, and identification of the critical path.

- ▶ Cost estimates that include the Total Estimated Cost and Total Project Cost for the design baseline and the proposed project summary cost estimate.
- ▶ The cost estimate basis/methodology showing the basis and assumptions for the estimate and a contingency analysis.
- ▶ The funding requirements showing the proposed project funding profile to be included in the Project Data Sheet and requested in the budget. The Project Data Sheet must agree with the approved master plan when applicable.
- ▶ Preliminary design and analysis calculations.
- ▶ The summary test and acceptance criteria.
- ▶ Assessments of and strategy for:
 - Risk—identify areas of cost, schedule, or technical risk on the proposed project and show how those risks will be reduced, mitigated, or accepted.
 - National Environmental Policy Act—the level of National Environmental Policy Act documentation required for the project and the plan for completing it in support of the proposed project schedule.
 - Safety—the level of safety documentation required for the project, and the plan for completing it in support of the proposed project schedule.
 - The safeguard and security considerations for the project.
 - Site selection—the application of a coherent, defensible methodology to identify and evaluate site options.
 - Value engineering—the trade-off studies of specific project systems intended to identify potential project enhancements and associated cost savings.
 - Waste management—decontamination and decommissioning planning (where appropriate and applicable) as required to understand potential impacts on the project and take appropriate action.
- ▶ Public and/or stakeholder input (where appropriate).
- ▶ Applicable codes and standards for construction or characterization (where appropriate).
- ▶ Acquisition Strategy—the planned contracting strategy for the major components of the project, such as design, construction, characterization, or special equipment.

- ▶ Conceptual design drawings/renderings (as appropriate).
- ▶ Design alternatives.

14.3.2 CD-1 Key activities

- ▶ Define Project Objectives
- ▶ Establish existing facility baselines
- ▶ Establish initial budgets
- ▶ Review design alternatives
- ▶ Identify project codes, standards, and procedures
- ▶ Evaluate alternative site location
- ▶ Establish technical and functional requirements
- ▶ Establish project baseline ranges
- ▶ Perform safety and operability review
- ▶ Verify performance criteria
- ▶ Perform life-cycle cost analysis
- ▶ Perform project risk management
- ▶ Identify and control interfaces
- ▶ Conceptual Project Report
- ▶ Acquisition Plan
- ▶ Source Selection Plan or Business Clearances
- ▶ Project Data Sheet for Design
- ▶ Preliminary Hazard Analysis Report
- ▶ Preliminary Project Execution Plan
- ▶ Design/funding estimate
- ▶ Preliminary Baseline Ranges (cost, scope, schedule)
- ▶ PSO develops Project and Engineering Design (PED) funding pool
- ▶ Project Expectations Summary
- ▶ Statement of Work
- ▶ System Engineering Management Plan.

14.3.3 CD-1 Acquisition Sequence

Once CD-0 is obtained, the AE directs the development of the conceptual design, which results in a Conceptual Design Report, Acquisition Plan, Preliminary Hazard Analysis, draft Project Execution Plan, a design funding estimate, and preliminary baseline ranges (cost, scope, schedule) for the rest of the project. These documents are submitted for SAE/AE approval along with a PSO-validated Project data sheet for design. The PSOs establish a Project and Engineering Design (PED) funding pool for projects over \$5M. These activities lead to a CD-1 (Approve Preliminary Baseline Range) determination. Where long-lead procurement is required, a phased CD-3 may be requested subject to prior budget approval and funding availability.

14.4 REQUIREMENTS FOR CRITICAL DECISION-2

Critical Decision-2 is the approval of the project's performance baseline and is required for inclusion of project's funding in the Department of Energy Congressional Budget Request. CD-2 also authorizes the design phase to proceed as soon as funds become available. A Critical Decision-2 approval will normally include a review of the CD-1 decision, the approved Project Execution Plan, and the Preliminary (Design Report; the draft Preliminary Safety Analysis Report; the completion of a performance baseline External Independent Review, and an independent cost estimate appraising the contractor's project management system; and the submittal of the Project Data Sheet for construction.

14.4.1 Performance Baseline Validation EIR

This is a detailed review of the entire project, including an ICE, prior to CD-2. It verifies the mission need; validates the proposed technical, cost, and schedule baseline; and assesses the overall status of the project management and control system.

14.4.2 Internal Program Review/Independent Review

The Internal Program Review will be directed by the PSO and will normally be conducted by teams assembled and funded by the Program Manager. Results of the review and the corrective action plan prepared by the Project Manager will be included in the Critical Decision-2 Package. Currently, there is a Congressionally mandated independent review requirement, that must be completed prior to preliminary design approval.

Independent Reviews. The DOE recognizes that independent reviews are valuable in assessing the status and health of its projects. An independent review may be a science-based or engineering-oriented peer review, a review of the project management structure and interrelationships between organizational components, a review targeted to a specific issue such as cost or budget, a review covering safety, or a combination. Also, for efficiency, independent reviews may be combined as appropriate.

Internal Independent Project Reviews (IPRs). An IPR is conducted by reviewers within the department. The Deputy Secretary as SAE, or the PSO and the operations/field office manager and program managers and Federal Project Managers, may authorize or conduct IPRs as required. The PSO or Operations Field Office Manager, as part of the project management oversight process, may request IIRs through the project management support offices for any project, including MS projects. Irrespective of the organizational level initiating an IPR, the PSO or Operations/Field Office Manager notifies OECM of its intent to conduct such a review and OECM is included as an invited observer for all planned reviews. OECM coordinates the extent of participation on a case-by-case basis with the appropriate organization. Committee members of an IPR team are not drawn from the responsible program office within a program secretarial organization, related contractors from the project office, or a related funding program. Reviews may use laboratory, contractor, consultants, university, industry, or other expertise from organizations not directly funded by or related to the program/project office being reviewed.

14.4.3 CD-2 Key activities

- ▶ Review and verify IPT organization and skills
- ▶ Initiate performance reporting
- ▶ Implement trend program
- ▶ Develop project specifications, drawings, procurement packages, and construction packages
- ▶ Finalize permit requirements
- ▶ Approve safety documents
- ▶ Budget and Congressional authorization and appropriations enacted
- ▶ Update Project Execution Plan

- ▶ Commit critical equipment, requisitions
- ▶ Perform process hazards review
- ▶ Project site selection
- ▶ Update scope, cost, and schedule (performance) baselines
- ▶ Execution Readiness Independent Review
- ▶ Mission need verification
- ▶ Detailed schedules and cost estimates
- ▶ Authority responsibilities matrix
- ▶ Performance metrics
- ▶ Staffing plans
- ▶ Technical risk analysis report
- ▶ Technology development output
- ▶ Complete design model
- ▶ Conduct technical innovations evaluation.

14.4.4 CD-2 Acquisition Sequence

Once CD-1 is obtained, the project preliminary performance baseline range shall be controlled through the baseline change control process. PED funds (which are managed by the PSO, including program directors) become available for use on preliminary design and final design, baseline development, and/or a statement of work/request for proposal for a design/build contract. For long-lead procurement, a separate budget request for capital funds may be submitted prior to CD-2 for a phased CD-3 determination.

Projects must prepare a draft preliminary safety analysis report and National Environmental Policy Act documentation, as appropriate, finalize the Project Execution Plan and performance baseline, and reflect the results in the project data schedule for construction. Also, a baseline performance external independent review shall be performed through OECM on all projects over \$5M.

Completion of these activities leads to a CD-2 (Approve Performance Baseline) determination.

14.5 REQUIREMENTS FOR CRITICAL DECISION-3

Critical Decision-3 is the approval to start construction or begin execution of the project and authorizes the award of contracts as soon as funds become available. A CD-3 approval will normally require a design review and subsequent approval of the final design and an execution external readiness independent review. Critical Decision-3 is requested with a letter from the project manager to the DOE AE, who has the authority to approve a CD-3 and formally notify the program sponsor and project manager.

14.5.1 Final Design Review

The final design review is a technical review of the standard and special specifications, drawings, and other related reports (e.g., energy conservation report). The purpose of the review is to ensure that the design complies with user and agency requirements and accepted standards. The process includes:

- ▶ Assessing technical adequacy and conformance with agency and customer requirements, codes, standards, and other criteria such as budgetary constraints
- ▶ Identifying consistent problems and errors, and lessons learned to pass on to future projects
- ▶ Managing reviewer participation and providing a process for review comment response and resolution.

The Project Manager coordinates the review by providing the design documents to qualified participants in the fields of Environment, Safety, and Health; all applicable disciplines of engineering, architecture, controls, communications, security, operations, maintenance, fire protection, energy conservation, and other areas as necessary. Other reviewers include any technical experts the DOE deems appropriate, along with the user representatives.

The project manager shall document all review comments and ensure they are resolved by incorporating changes or documenting the reason for not doing so.

14.5.2 Final Design Package

The package will include final drawings, specifications, a detailed cost estimate, detailed schedule calculations and design analyses, and a final energy conservation report. The package shall be in a form ready to send out to bid or a request for quotation.

External Independent Review (EIR)

An EIR is conducted by reviewers outside the Department. OECM will select an appropriate contracting agency to contract for such reviews, excluding the M&O/M&I contractors. The actual selection of reviewers, contract management and contact with the Contracting Officer, and dialogue with the EIR contractor on matters pertaining to the contract are the sole purview of OECM. OECM may make nonproject/nonprogram funds available to pay for the EIR contractor and for travel expenses of OECM staff participating in such reviews; however, OECM funds are not available for PSO staff support. The PSO's project management support office provides coordination for the EIR contractor on site, resolves issues of schedule and access while on site, gathers and provides requested and proffered information to the reviewer, and responds to the reviewer on errors of fact or needed clarification. The project management support office does not provide direction to the reviewer as to the content of the reviewer's report.

EIRs are managed by OECM as DOE's agent. Line management, including the Deputy Secretary, PSO, or a program or project organization within the PSO may request an EIR. EIRs also may be initiated in response to an external requirement, however, reviews, studies, or investigations conducted by the General Accounting Office or the Office of the Inspector General are not considered EIRs for DOE purposes. OECM coordinates all such reviews with the appropriate PSO to define review scope, choose an optimal time during the acquisition process, minimize impact on the project of conducting multiple reviews, and evaluate credentials of potential reviewing organizations and individuals.

Independent Cost Estimate

An Independent Cost Estimate review may be proposed to verify the detailed cost estimate included in the final design. An independent firm or agency will conduct the review so that the two estimates can be compared and determined to be reasonable. If the cost estimates are substantially different, the two shall be compared to identify omissions, duplications, etc.

14.5.3 CD-3 Key Activities

- ▶ Finalize field support plan
- ▶ Review Safety Action Plan

- ▶ Perform final design review
- ▶ Prepare definitive estimate
- ▶ Detailed resource-loaded schedule
- ▶ Prepare equipment and material requisitions
- ▶ Approve to initiate construction activities
- ▶ Complete procurements of materials and equipment
- ▶ Start systems completion
- ▶ Work off punch lists
- ▶ Develop Turnover and Startup Plan
- ▶ Operating and Maintenance Manuals
- ▶ Execution Readiness External Independent Review

14.5.4 CD-3 Acquisition Sequence

Once CD-2 is obtained, the project can be included in the DOE budget submission process. The Final Design would continue with PED funds through completion of the design. If requested and approved, long-lead procurement funds are committed. The final Safety Analysis Report is to be submitted for approval and the DOE safety evaluation report shall be issued, as appropriate. An Execution Readiness External Independent Review shall be performed through OECM on MS projects and, through the appropriate AE, for other projects over \$5M. The Project Execution Plan and performance baseline shall be updated, if required. These activities lead to a CD-3 (Approve Start of Construction) determination.

14.5.5 Critical Decision-3 Request

Once the final design review is complete, the design documents are updated, and the Execution Readiness Independent Review is completed, the project manager sends a Critical Decision-3 Request Letter to the SAE/AE requesting approval for CD-3, Approve Start Construction. The letter will include the approval deadline necessary to maintain the project schedule.

14.6 REQUIREMENTS FOR CRITICAL DECISION-4

CD-4 is the transition of project deliverables to the user for operations. Prior to obtaining CD-4, Approval, the contractor will normally prepare a letter of intent to occupy or begin operation with an occupancy checklist and a readiness assessment or review from the occupant. A Final Cost Report is required for closeout. Final Cost Reports will vary by site and are not prepared until after all contracts and work orders are closed and all costs are collected. The Final Cost Report may or may not be completed prior to obtaining approval of CD-4.

14.6.1 Letter of Intent to Occupy and Occupancy Checklist

Once construction is complete, the project manager will use a checklist to ensure the facility or action is safe and functional before occupancy. The goal of the checklist is to ensure that at least the minimum building, life, safety, and security requirements are met prior to delivering the product to the user, and to make an informed decision on when to occupy. The items on the checklist may be prioritized into those items that: are mandatory before occupancy, must be completed prior to commencing operations, and can be completed after the building is occupied and operational. Each project shall establish the checklist according to the items that are applicable to the specific site and to the specific facility. The project manager and the responsible Department of Energy field office must allow occupancy based upon a partially completed checklist. This checklist and its content are not mandatory, and DOE sites may vary in how they establish final acceptance of a facility for beneficial occupancy.

The project manager will send the letter of intent to occupy with the fully completed checklist to the field office for approval and forwarding to the program sponsor and project program manager as part of the CD-4 package.

14.6.2 Readiness Assessment/Review

Early in the project, as part of readiness activities, a level of operational readiness will be determined so the user will know what type of assessment or report is required prior to operation. The facility user is required to provide the appropriate level of operational readiness review prior to occupying or operating the facility. The readiness plan may include a phased approach to readiness so that a staged occupancy is possible. Approval authority for readiness reviews varies depending upon the type and level of hazards involved.

14.6.3 CD-4 Key activities

- ▶ Startup testing
- ▶ Prepare intent to occupy and occupancy checklist
- ▶ Initiate document and project closeout process
- ▶ Completion of construction
- ▶ Perform systems completion testing
- ▶ Verify performance criteria
- ▶ Prepare lessons learned report
- ▶ Readiness self-assessment
- ▶ Approve for acceptance
- ▶ Prepare and complete as-built drawings, if required
- ▶ Prepare project completion report
- ▶ Complete financial closeout
- ▶ Satisfaction meeting.

14.6.4 CD-4 Acquisition Sequence

Once CD-4 is obtained, execute and complete all mission activities, including construction where required; complete transition to operations planning activities, including DOE approval of Environmental, Safety and Health documentation, an operational readiness review, and an acceptance report. These activities lead to a CD-4 (Approve Start of Operations or Project Closeout) determination.

14.6.5 Critical Decision-4 Request for Completion/Acceptance

The project manager prepares a letter requesting CD-4 and submits it to the field office for approval. The field office shall forward the approved CD-4 request to the program sponsor and the program manager.