

- 6) The tailored Clause 6, Table 9 through Table 12 as completed following the technical meeting minutes

#### 5.4.6 SFR exit criteria

The SFR shall be deemed completed only after the following events have been successfully completed:

- a) All action items submitted during the technical review have been appropriately addressed.
- b) All actions listed in the action items required for review closure have been completed and approved by the required parties.
- c) Each of the technical review products listed in Clause 6, Table 9 as tailored for the specific program meets all of its acceptability criteria, or has a corrective action plan documenting the corrective actions required to achieve acceptability.
- d) The acquirer and supplier concur that the program risk level is acceptable.
- e) All affected baselines have been updated in the applicable CM system(s).
- f) The SFR chair formally closes the review.

### 5.5 Preliminary design review (PDR)

#### 5.5.1 PDR purpose

The PDR shall be conducted to help ensure the preliminary design for the system under review is sufficiently mature and ready to proceed into detailed design and can meet the stated performance requirements within program budget, schedule, risk, and other program and system constraints.

#### 5.5.2 PDR description

The PDR shall confirm that

- a) All system-level functional and performance requirements baselined at SRR and SFR have been correctly decomposed or directly allocated to the lowest level of the specification tree for all system elements uniquely identified.
- b) Sufficient requirements trades have been conducted, supported by systems engineering trade-off analyses, to influence the system physical architecture and allocated requirements.
- c) The allocated baseline is complete.
- d) The design as disclosed satisfies all requirements in the approved system specification.
- e) All external interfaces to the system, as defined at the SRR, have been documented in interface control documents.
- f) All system internal interfaces (system element to system element) have been documented in interface control documents.
- g) The verification approach to demonstrate achievement of all allocated performance requirements has been documented.
- h) All design constraints have been captured and incorporated into the allocated requirements and the design.
- i) Bi-directional traceability exists between the source requirements and the design elements for all decomposed and allocated requirements.

- j) All system hardware element physical architectures are complete.
- k) All system hardware element development specifications are complete.
- l) The software logical and physical architectures are complete to the extent specified in the SDP for the point in its life cycle at which PDR occurs, based on the selected life-cycle model(s).
- m) The set of system elements comprising the preliminary system design can achieve the complete set of allocated system baseline requirements, and forms a satisfactory basis for proceeding into detailed design with acceptable risk.
- n) All critical technologies have been demonstrated in a relevant environment and can be integrated into a system with acceptable risk.
- o) Risks have been identified and mitigation plans are in place.

### 5.5.3 PDR timing

The PDR shall be held when the acquirer and supplier concur that the system-level preliminary design and allocated baseline documentation are complete, and prior to the beginning of detailed design.

### 5.5.4 PDR entry criteria

The PDR shall be conducted only after the following events have been successfully completed:

- a) The acceptability criteria for each of the PDR technical review products have been established for the specific program by tailoring the contents of Clause 6, Table 13.
- b) All preparatory actions in Clause 6, Table 14 as tailored for the specific program have been successfully accomplished to support conducting the technical review.
- c) The acquirer and supplier concur that the allocated baseline and the program budget estimate are sufficiently mature to support the case for a successful PDR as judged against the tailored product acceptance criteria.
- d) Any prior system element level or incremental PDRs on which this PDR is dependent have been completed and their action items closed, or documented action items required for closure are acknowledged.

### 5.5.5 PDR content

#### 5.5.5.1 Products to be reviewed at PDR

The following work products at a minimum shall be reviewed by the PDR team. Other products may be added as necessary during tailoring of Clause 6, Table 13 for the specific program.

- a) System allocated baseline documentation
- b) System functional or allocated baseline documentation
- c) Technical plans
- d) Program risk assessment
- e) Program life-cycle cost estimate

#### 5.5.5.2 Conduct of the PDR

PDR participants shall assess the PDR work products and judge the products' acceptability according to the acceptability criteria in Clause 6, Table 13 as tailored for the specific program.

### 5.5.5.3 PDR outputs

- a) The review team shall document sufficient assessment results to show the program has produced
  - 1) Technical data for the allocated baseline that are complete, satisfy the system specification, and provide a sufficient foundation for detailed design to proceed.
  - 2) **Bi-directional traceability** between all decomposed and allocated requirements to the lowest level of the specification tree, demonstrating that each and every function in the functional baseline has been allocated to one or more of the system elements, that the physical hierarchy is consistent with the functional baseline, and that there are no orphan system elements.
  - 3) **Technical plans that are current and address the full scope of work.** 
  - 4) An updated (if necessary) risk and opportunity assessment, and associated risk mitigation and opportunity handling plans.
  - 5) Feasibility, budget, and schedule that are determined to be within acceptable risk margins.
  - 6) A program IMS that has been updated (including systems and software critical path drivers) and includes all activities required to complete CDR (assuming same developer responsible for PDR and CDR).
  - 7) Updates to the CARD that reflect the design in the allocated baseline.
  - 8) **Evidence to inform realistic requirements for EMD contract specifications.** 
  - 9) Interface requirements contained in system external interface control documentation and internal interface control documentation.
- b) The PDR technical review summary report shall be distributed containing the following attachments:
  - 1) List of attendees
  - 2) Final copies of all presentations
  - 3) Updated (if necessary) risk assessment, mitigation plans, and opportunity handling plans
  - 4) Documented action items including those required for closure
  - 5) The tailored Clause 6, Table 13 through Table 16 as completed following the technical review
  - 6) Meeting minutes

### 5.5.6 PDR exit criteria

The PDR shall be deemed completed only after the following events have been successfully completed:

- a) All action items submitted during the technical review have been appropriately addressed.
- b) All actions listed in the action items required for review closure have been completed and approved by the required parties.
- c) The content of corrective action plans for issues identified in the PDR is sufficiently complete and unambiguous to enable successful completion of all corrective actions.
- d) Each of the technical review products listed in Clause 6, Table 13 as tailored for the specific program meets all of its acceptability criteria, or has a corrective action plan documenting the corrective actions required to achieve acceptability.
- e) The acquirer and supplier concur that the program risk level is acceptable.
- f) All affected baselines have been updated in the applicable CM system(s).
- g) The PDR chair formally closes the review.

## 6.5 Preliminary design review (PDR) detailed criteria

### 6.5.1 PDR technical review products acceptability criteria

Table 13 lists the products that should be reviewed at PDR, and the associated acceptability criteria that should form a sufficient basis by which to assess each product's content as acceptable to support a successful PDR. Specific products and associated acceptability criteria shall be deleted, modified, or additional items included, in accordance with the acquirer-supplier agreement, to support a given program.

**Table 13—PDR technical review products acceptability criteria**

Product	PDR acceptability criteria
System allocated baseline documentation	<ul style="list-style-type: none"> <li>a) Analysis of system performance is complete and is assessed to meet requirements traceable to the validated CDD.</li> <li>b) Trade studies related to the design of the system and its lowest level specified CIs are complete and documented, including the rationale for selection of the preferred alternative.</li> <li>c) Interoperability functional performance requirements are allocated to all system, segment and subsystem preliminary designs.</li> <li>d) Preliminary design satisfies design considerations and demonstrates consistency with a standard implementation framework such as department of defense architecture framework (DoDAF) 2.0 or equivalent.</li> <li>e) System operational functions and environments for the preliminary design are traceable to the supplier's CONOPS and the allocated baseline.</li> <li>f) Preliminary system-level design is producible and assessed to be within the production budget.</li> <li>g) Preliminary long lead production requirements are developed and documented.</li> <li>h) PM&amp;P allocated requirements are incorporated into the preliminary design.</li> <li>i) Mass properties margins (average or complex) are established for PDR and correlated with the preliminary design, including allowable growth allocations and metrics.</li> <li>j) SSE, COMSEC, cybersecurity, and PP security requirements are allocated and incorporated into the preliminary design in accordance with DoD policies, directives, and system specifications.</li> <li>k) EMI control processes and procedures are developed for the preliminary design, and EMI/EMC allocated requirements are incorporated into the preliminary design.</li> <li>l) User interface hardware and software allocated requirements for operators, users, maintainers, and sustainers are incorporated into the preliminary design.</li> <li>m) Contamination control processes and procedures are developed for the preliminary design.</li> <li>n) Hazardous materials management and pollution prevention allocate requirements are incorporated into the preliminary design.</li> <li>o) Data storage analysis identifies reliability, maintainability, and availability requirements for storage systems environments.</li> <li>p) The preliminary data storage physical architecture fully addresses elements, including communications and processing capacity.</li> <li>q) The data storage logical architecture defines a complete list of data receivers to include both computer and human agents.</li> <li>r) The level of user integrity (e.g., access control lists) has been</li> </ul>

Product	PDR acceptability criteria
System allocated baseline documentation ( <i>continued</i> )	<p>identified that enables the system requirements to be met.</p> <ul style="list-style-type: none"> <li>s) DT&amp;E elements are correlated with the preliminary design.</li> <li>t) OT&amp;E allocated requirements are incorporated into the preliminary design.</li> <li>u) Assessment of the technical effort and design indicates potential for OT&amp;E success (operationally effective and suitable).</li> <li>v) The preliminary design incorporates all survivability, vulnerability, and threat allocated requirements for all categories of expected threats, threat environments and their likelihood of occurrence.</li> <li>w) A draft critical technologies list is documented.</li> <li>x) All CSIs and CAIs are identified.</li> <li>y) System safety allocated requirements are incorporated into the preliminary design.</li> <li>z) Preliminary hazard analyses are completed and a prioritized list of safety hazards is documented.</li> <li>aa) ESOH allocated requirements are incorporated into the preliminary design.</li> <li>bb) Functional failure modes, effects, and criticality analysis (FMECA) is completed.</li> <li>cc) R&amp;M allocated requirements are supported by the preliminary design.</li> <li>dd) Program's reliability growth planning strategy and growth curve supports key program milestones needed to meet the CDD threshold at initial operational test and evaluation (IOT&amp;E), and is adequate to grow to the specification value, considering the test schedule and resources.</li> <li>ee) Results from the R&amp;M analyses are used in O&amp;S cost estimates, availability analyses, provisioning plans (spares and repair parts), and maintenance concept.</li> <li>ff) Environmental qualification requirements are incorporated into the design and are addressed in the requirements traceability documentation.</li> <li>gg) Estimate of system reliability and maintainability is updated, based on engineering analyses, initial test results, or other sources of demonstrated reliability and maintainability.</li> <li>hh) Quality and product assurance allocated requirements are incorporated into the preliminary design.</li> <li>ii) Appropriate margins are established at the segment, subsystem, and component levels as applicable.</li> <li>jj) Requirements allocation and derivation from system to segment, subsystem and component levels are complete, traceable to the preliminary design and all "to be determined" (TBD) items are being tracked to resolution.</li> <li>kk) Interface definitions at the inter-segment and inter-subsystem levels are complete, documented, and traceable to the preliminary design and all TBDs are being tracked to resolution.</li> <li>ll) Preliminary ground support equipment designs if applicable are traceable to the system allocated baseline and to the preliminary design.</li> <li>mm) Supportability allocated requirements are incorporated into the preliminary design.</li> <li>nn) Key allocated performance requirements are traceable to the system's preliminary design at the segment, subsystem, and component levels as applicable.</li> <li>oo) Key allocated performance requirement parameters developed and assessed at SFR are implemented in each major subsystem and</li> </ul>

Product	PDR acceptability criteria
System allocated baseline documentation ( <i>continued</i> )	<p>component preliminary design.</p> <p>pp) All deficiencies identified as a result of any testing performed to date, including those related to technology deficiencies identified at SFR, have been correlated with the applicable portions of the preliminary design, impacts have been assessed, and candidate design changes to correct the deficiencies have been identified.</p> <p>qq) The documented results of any prototyping done to date provide evidence that the technical approach is adequate and the risk levels for the corresponding design approach are acceptable.</p> <p>rr) Prototypes implemented to date correctly implement the corresponding portions of the functional baseline and are consistent with the preliminary physical architecture.</p> <p>ss) The physical and functional interfaces of each prototype implemented to date satisfy the corresponding allocated requirements, and validate the sufficiency of the applicable external interface requirements levied on the system for its interaction with facilities and personnel.</p> <p>tt) Computer system and software logical architecture designs have been established; all computer SWCIs, HWCIs, computer software components (CSCs), and computer software units (CSUs) have been defined.</p> <p>uu) The preliminary design is consistent with the end-to-end processing capabilities and capacities needed for mission operations as indicated by the system performance analysis results.</p> <p>vv) Preliminary growth margin requirements are documented for computer resources (memory and storage capacity, processor throughput, communications bandwidth, etc.)</p> <p>ww) Software requirements specifications (SRS) and interface requirement specifications (IRS), including verification plans, are complete and baselined for all SWCIs for the planned builds up to this point, and satisfy the system functional requirements.</p> <p>xx) Software functionality in the preliminary design is consistent with resources expended per the IMS and the software metrics.</p> <p>yy) Interface control documents trace all software interface requirements to the SWCIs and CSUs.</p> <p>zz) Preliminary software design has been defined and captured for the builds up to this point.</p> <p>aaa) System end-to-end data flow is complete and documented in the preliminary design.</p> <p>bbb) All required software-related documents are baselined and delivered for the builds up to this point.</p> <p>ccc) System allocated baseline documentation is sufficiently complete and correct to enable detailed design to proceed with proper CM.</p>
System functional or allocated baseline documentation	<p>a) Preliminary design (hardware, software, human procedures), including interface descriptions is complete, satisfies all requirements in the system functional baseline and is under CM without any major TBDs or open items.</p> <p>b) System, segment, subsystem, and component-level interfaces are baselined and are under configuration control.</p> <p>c) C4I allocations are incorporated into the preliminary design across segments, subsystems, and components.</p>

Product	PDR acceptability criteria
System functional or allocated baseline documentation ( <i>continued</i> )	<ul style="list-style-type: none"> <li>d) The threat scenario operational and environmental allocations are incorporated into the preliminary design and are traceable to all segments, subsystems, and components.</li> <li>e) Test requirements and test data collected to date for the preliminary design are traceable to operational requirements via specifications and VCRMs.</li> <li>f) Bi-directional requirements traceability among functional and allocated baselines and the preliminary design is complete, consistent, and has been approved by all applicable stakeholders.</li> </ul>
Technical plans	<ul style="list-style-type: none"> <li>a) Supplier's SEMP is complete, adequate and aligned with the program SEP.</li> <li>b) Integrating activities of any lower-level PDRs have occurred; identified issues are documented in action plans.</li> <li>c) Plan to CDR is accurately documented in the SEP and SEMP, as well as in the IMP and IMS.</li> <li>d) Program is properly staffed by both the acquirer and supplier.</li> <li>e) Technical performance measures have been identified to track technical progression of design maturity concern areas.</li> <li>f) Plans documenting the system, segment, subsystem, and component V&amp;V approaches are developed for the preliminary design.</li> <li>g) Preliminary V&amp;V plans are traceable to the preliminary design correlating all test objectives, test environments and test resources with allocated requirements.</li> <li>h) Preliminary V&amp;V plans address data acquisition, reduction, analysis and documentation, and success criteria.</li> <li>i) Hazardous materials management and pollution prevention processes and procedures are verified and baselined.</li> <li>j) Test bed(s) and test facilities chosen based on the preliminary design are deemed adequate to perform system, segment, subsystem, and interface requirements verification (e.g., for critical HWCIs and SWCIs, arrangements for procuring and scheduling the use of V&amp;V resources—simulators, test beds, test facilities—have been demonstrated).</li> <li>k) Design development planning is completed and baselined.</li> <li>l) Program schedule, as depicted in the updated IMS is executable within acceptable technical and cost risks.</li> <li>m) Program is executable with the existing budget.</li> <li>n) Trade studies and system producibility assessments are under way.</li> <li>o) All critical manufacturing processes have been defined, characterized, and documented.</li> <li>p) Failure reporting and corrective action system (FRACAS) is established.</li> <li>q) Logistics (sustainment) and training systems planning and documentation are sufficiently complete to support the technical review.</li> <li>r) LCSP is approved, including updates on program sustainment development efforts and schedules based on current budgets and firm supportability design features.</li> <li>s) LCSP includes software support requirements.</li> <li>t) LCSP addresses DMS, PM&amp;P guidelines, and counterfeit parts risk management.</li> <li>u) Long-lead and key supply chain elements are identified, to include strategic materials risk.</li> </ul>

Product	PDR acceptability criteria
<p>Technical plans (<i>continued</i>)</p>	<p>v) Software plans have sufficient content to demonstrate that</p> <ol style="list-style-type: none"> <li>1) Computer systems and software design and development approach have been confirmed through analyses, demonstrations, and prototyping in a relevant environment.</li> <li>2) Software increments have been defined and capabilities allocated to specific increments.</li> <li>3) Software trade studies addressing COTS, reuse, and other software-related issues are completed.</li> <li>4) Software development process is defined in a baselined software development plan and reflected in the IMP and IMS.</li> <li>5) Software development schedules reflect supplier software processes and IMP/IMS software events for current and future development phases.</li> <li>6) Software development environment and test/integration labs have been established with sufficient fidelity and capacity.</li> <li>7) Software metrics have been defined and a reporting process has been implemented; metrics are being actively tracked and assessed.</li> <li>8) Testability requirements—built-in test (BIT), false alarm rate, fault isolation, fault detection—have been identified and the required software support documented as requirements so that they can be tested in the proposed design.</li> <li>9) TEMP addresses all SWCI plans, test facilities, and test plans, including testing required to support incremental approaches and regression tests.</li> <li>10) Software development estimates [i.e., size, effort (cost), and schedule] are updated.</li> </ol> <p>w) Hardware plans have sufficient content to demonstrate that</p> <ol style="list-style-type: none"> <li>1) The hardware design/development approach has been confirmed through analyses, demonstrations, and prototyping in a relevant environment.</li> <li>2) Hardware trade studies addressing COTS, reuse, and other software-related issues are completed.</li> <li>3) The major phases of the program’s hardware design and development process are defined in a hardware development plan and reflected in the IMP and IMS.</li> <li>4) Hardware development schedules reflect supplier hardware processes and IMP/IMS hardware design and development events.</li> <li>5) Hardware development environment (e.g., computer modeling and design tools) and test/integration labs have been established with sufficient fidelity and capacity.</li> <li>6) Hardware metrics have been defined and a reporting process has been implemented; metrics are being actively tracked and assessed.</li> <li>7) R&amp;M and testability requirements—BIT, false alarm rate, fault isolation, fault detection—have been identified and the required hardware support documented as requirements so that they can be tested in the proposed design. Also, requirements for detailed design have been identified such as thermal, vibration, shock environments, and highly accelerated life testing (HALT).</li> <li>8) TEMP addresses all HWCI plans, test facilities, and test</li> </ol>

<b>Product</b>	<b>PDR acceptability criteria</b>
Technical plans ( <i>continued</i> )	<p>plans, including testing required to support incremental approaches and regression tests.</p> <p>9) Hardware development estimates [i.e., number of HWCI's, effort (cost) and schedule] are updated.</p>
Problem risk assessment	<p>a) Cost, schedule, and technical risks are identified, and mitigation plans are in place.</p> <p>b) Risk management process is in place demonstrated by documented execution results of existing mitigation plans.</p>
Program life-cycle cost estimate	<p>a) System cost model has been updated, allocated to lower system element levels, and tracked against targets; production cost model constructed.</p> <p>b) Updated CARD is consistent with the proposed allocated baseline.</p>

### 6.5.2 PDR preparation

Table 14 lists the actions that should be considered during preparation for the PDR. The responsible people listed are those most often tasked with the listed preparation actions, but the acquirer and supplier may agree to assign the actions to different people or organizations depending on a given program's organizational structure. Specific actions shall be deleted, modified, or additional items included, in accordance with the acquirer-supplier agreement, to support a given program. Responsibilities shall be assigned to people or organizations in accordance with the acquirer-supplier agreement.

**Table 14—PDR technical review preparation actions**

Responsible person	PDR preparation actions
Program manager	<ul style="list-style-type: none"> <li>a) Approve, fund, and staff the system PDR as planned in the SEP developed by the systems engineer.</li> <li>b) Manage and approve changes to the segment, subsystem and system element development specifications well enough in advance to allow successful execution of the PDR delivery of an acceptable allocated baseline at the PDR.</li> <li>c) Establish the plan to CDR in applicable contract documents including the SEMP, IMS, and IMP.</li> <li>d) Ensure the SEP includes objective SMEs to participate in the PDR.</li> <li>e) Appoint a PDR chair, in coordination with the systems engineer, no later than 45 days prior to the technical review.</li> <li>f) Coordinate a preliminary agenda between the program IPT and other acquirer SMEs no later than 30 days prior to the PDR.</li> </ul>
Systems engineer	<ul style="list-style-type: none"> <li>a) Ensure that the pre-established PDR criteria have been met, including measurement status of the program's technical metrics that demonstrate acceptable progress and developmental maturity of the system design to achieve a successful PDR.</li> <li>b) Ensure the system allocated baseline and physical architecture are complete and consistent.</li> <li>c) Ensure the set of system elements comprising the preliminary system design can achieve the complete set of system allocated baseline requirements.</li> <li>d) Ensure assessments and risks associated with all design constraints are conducted, documented and provided in the technical review material.</li> <li>e) Ensure verification methods are defined for all decomposed and allocated requirements.</li> <li>f) Ensure risk items associated with allocated requirements are identified and analyzed, and mitigation plans are in place.</li> <li>g) Provide supplier organization(s) the opportunity to participate in the PDR planning.</li> <li>h) Coordinate arrangements for PDR location and support.</li> <li>i) Ensure all of the technical review products whose acceptability criteria are defined in Table 13 are completed for the PDR.</li> <li>j) Ensure the preparation of all presentation material is coordinated across IPTs.</li> <li>k) Ensure adequate plans are in place to complete the technical activities to proceed from PDR to the CDR.</li> <li>l) Ensure plans to proceed to CDR allow for contingencies.</li> </ul>
PDR chair	<ul style="list-style-type: none"> <li>a) Determine PDR team membership.</li> <li>b) Approve the final PDR agenda.</li> <li>c) Identify any final Clause 6 PDR detailed criteria tailoring for the specific program.</li> <li>d) Identify any specific elements for in-depth technical review as required.</li> </ul>

### 6.5.3 PDR conduct

Table 15 lists the technical review elements and associated content details that should be considered for the conduct of the PDR. Specific elements and their content details shall be deleted, modified, or additional items included, in accordance with the acquirer-supplier agreement, to support a given program.

**Table 15—PDR conduct elements**

PDR review element	Content details
Introduction, agenda, administrative	<ul style="list-style-type: none"> <li>a) Review location layout and safety procedures</li> <li>b) Security procedures if applicable</li> <li>c) Introduction of chair and team members</li> <li>d) Purpose of the review</li> <li>e) PDR agenda</li> <li>f) Action item procedures</li> <li>g) Risk assessment procedures</li> <li>h) Program overview</li> <li>i) Status of action items from previous technical reviews</li> </ul>
Allocated baseline and comparison with functional baseline	<ul style="list-style-type: none"> <li>a) Updated specification tree to the system element level and description of requirements allocation process including technical budgets</li> <li>b) Requirements traceability, methodology and completeness to the system element level</li> <li>c) System physical architecture and design, correspondence of elements (hardware, software, manual procedures) to the specification tree and allocated requirements</li> <li>d) Trade studies, FMECA, and other studies and analyses</li> <li>e) System internal and external interfaces</li> <li>f) Updates to KPPs, MOPs, and MOEs</li> <li>g) Established metrics and measures</li> <li>h) Verification and certification requirements as allocated to system elements</li> <li>i) Preliminary design's support for interoperability</li> <li>j) Software logical architecture and development status</li> <li>k) Preliminary software design for the increments up to this point</li> <li>l) Test and certification requirements and initial test planning</li> <li>m) Logistics and personnel requirements</li> <li>n) Training requirements</li> <li>o) Resources requirements to support development</li> </ul>
Technical plans review	<ul style="list-style-type: none"> <li>a) IMP and IMS</li> <li>b) M&amp;S support to PDR and subsequent M&amp;S plans for CDR, TRR, etc.</li> <li>c) Software development plan maturity</li> <li>d) Software development environment and test and integration labs</li> <li>e) Manufacturing plan and processes</li> <li>f) Specialty engineering plans</li> <li>g) Hazard mitigation plan if applicable</li> <li>h) Government and supplier configuration CM plans</li> <li>i) Certification and accreditation plans</li> <li>j) Updates to product support plan and sustainment strategy</li> <li>k) Updates to LCSP including software support requirements and supportability features in the preliminary system design</li> </ul>

PDR review element	Content details
Risk and mitigation review	a) Risk identification and mitigation, including: <ol style="list-style-type: none"> <li>1) Consideration of V&amp;V resource requirements in support of the preliminary design</li> <li>2) Consideration of producibility assessments of key technologies to support manufacturing</li> <li>3) Consideration of test resources and availability</li> <li>4) Consideration of ESOH</li> <li>5) Consideration of ongoing industrial base assessment (diminishing manufacturing sources and material shortages, obsolete parts, etc.)</li> <li>6) Consideration of unique software risks</li> </ol>
Program life-cycle cost estimate review	a) Updates to the CARD to align it with the allocated baseline b) Updated software development estimates from detailed system-element level inputs c) Earned value baseline

#### 6.5.4 PDR closure

Table 16 lists the actions that should be considered for PDR closure. The responsible people listed are those most often tasked with the listed closure actions. The acquirer and supplier may agree to assign the program manager and systems engineer actions to different people or organizations depending on a given program's organizational structure. Specific actions shall be deleted, modified, or additional items included, in accordance with the acquirer-supplier agreement, to support a given program. Responsibilities shall be assigned to people or organizations in accordance with the acquirer-supplier agreement.

**Table 16—PDR closure actions**

Responsible person	PDR closure actions
Program manager	a) Manage and approve changes to technical baselines resulting from PDR. b) If funding profiles are insufficient to support development, notify user/sponsor of funding shortfall and request funding profile adjustments. c) Support preparation of the PDR summary report.
Systems engineer	a) Determine the root cause of problems, identify corrective actions, and manage to completion. b) Monitor and control the execution of the PDR closure plans. c) Organize and supervise the responses to all action items generated during PDR. d) Support preparation of the PDR summary report. e) Ensure all information products required to be put under configuration control have been delivered to the configuration manager. f) Ensure all IMP and IMS tasks associated with conduct of the PDR have been successfully completed and documented as such.
PDR chair	a) Ensure preparation of the PDR summary report and formal PDR minutes with the support of the program manager and systems engineer. b) Sign off final approval of all action items. c) Approve the PDR minutes. d) Approve and distribute the PDR summary report. e) Prepare and distribute the formal PDR closure letter.
Recorder	a) Collate all action items for submission to the PDR chair. b) Prepare the PDR summary report and PDR minutes for signature and distribution by the PDR chair.