



DEPARTMENT OF THE NAVY

NAVAL SEA SYSTEMS COMMAND
WASHINGTON, DC 20362-5101

IN REPLY REFER TO
NAVSEAINST 4130.12A
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NAVSEA INSTRUCTION 4130.12A

From: Commander, Naval Sea Systems Command
Subj: CONFIGURATION MANAGEMENT POLICY AND GUIDANCE
Ref: (a) SECNAVINST 4130.2

1. Purpose. This instruction implements reference (a) within NAVSEA and NAVSEA shore activities for life cycle Configuration Management (CM) and logistic support of ships, systems and equipment, including computer software and firmware.

2. Cancellation. This instruction cancels and supersedes NAVSEAINST 4130.10 of 20 September 1978, NAVSEAINST 4130.12 of 6 June 1981, and NAVSEAINST 4130.14 of 8 October 1985.

3. Scope. This instruction applies to new start ship, system and equipment programs, including computer software and firmware, under the cognizance of NAVSEA, initiated after the effective date of this instruction. Evolving and/or in service programs under the cognizance of NAVSEA shall comply with the requirements of this instruction to the extent that it is cost effective and to the degree previously and currently required in the directives superseded by this instruction. Implementation shall be in accordance with the policy and responsibilities defined in Section 1.

4. Exception. Reactor plant systems and equipment under the cognizance of the NAVSEA Deputy Commander for Nuclear Propulsion (SEA 08) are excluded from this CM policy instruction. Such matters will be handled as directed by SEA 08. SEA 08 will be consulted in the application of the provisions of this instruction to areas which may affect the nuclear propulsion plant or associated nuclear support facilities. TRIDENT System and Marine Gas Turbine CM which, although based on reference (a), are separately governed by references (b) and (c), respectively.

5. Format. This is a publication-type directive. Refer to the Table of Contents for specific subject matter and reference location.

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References

- (a) SECNAVINST 4130.2 of 11 May 1987, Subj: Department of the Navy Configuration Management Policy
- (b) NAVSEA TL130-AB-PLN-010, Subj: TRIDENT System Configuration Management Plan
- (c) NAVSEAINST 4130.11A of 29 March 1988, Subj: Joint Configuration Management of Marine Gas Turbine Equipment, and Gas Turbine Ship Engineering Control System Equipment
- (d) NAVSEA Technical Specification 9090-700A, Subj: Ship Configuration and Logistic Support Information System (SCLISIS)
- (e) NAVSEAINST 4790.1A of 13 February 1985, Subj: Expanded Ship Work Breakdown Structure (ESWBS) for Ships, Ship Systems, and Combat Systems
- (f) NAVSEA 0900-LP-079-6010, Subj: Ship Acquisition Contract Administration Manual (SACAM)
- (g) NAVSEA SL720-AA-MAN-010, Subj: Fleet Modernization Program (FMP) Management and Operations Manual
- (h) NAVSEA T9234-AB-PRO-010/MGTE TD Guide, Subj: Marine Gas Turbine Technical Directives Manual
- (i) NAVSEAINST 4720.11B of 15 December 1981, Subj: Shipboard Installations and Modifications Performed by Alteration Installation Teams; Centralized Control of
- (j) NAVSEAINST 4720.16 of 28 June 1985, Subj: Logistics Management Procedures for Configuration Changes Installed Outside of Depot Level Availabilities
- (k) OPNAVINST 4790.4B of 13 August 1987, Subj: Ships' Maintenance and Material Management (3-M) Manual
- (l) NAVSEAINST 5000.39 of 21 March 1988, Subj: Acquisition and Management of Integrated Logistic Support for Ships, Systems, and Equipment
- (m) MIL-STD-1521B of 4 June 1985, Subj: Technical Reviews and Audits for Systems, Equipments, and Computer Software

- (n) DoD-STD-2167A of 29 February 1988, Subj: Defense System Software Development
- (o) NAVSEAINST 9070.5A of 13 May 1983, Subj: Design Reviews of Naval Sea Systems Command Acquisition Programs; Policy and Procedures for
- (p) MIL-STD-480B of 15 July 1988, Subj: Configuration Control-Engineering Changes, Deviations and Waivers
- (q) MIL-STD-481B of 15 July 1988, Subj: Configuration Control-Engineering Changes (Short Form), Deviations and Waivers
- (r) MIL-STD-490A of 4 June 1985, Subj: Specification Practices
- (s) MIL-STD-482A of 1 April 1974, Subj: Configuration Status Accounting Data Elements and Related Features
- (t) DoD-STD-1679A of 22 October 1983, Subj: Software Development
- (u) NAVSEAINST 4720.15 of 23 March 1983, Subj: Policy and Procedures for Implementation of Machinery Alterations (MACHALTs) on HM&E Equipment and Systems
- (v) DoD-STD-2140 of 20 October 1982, Subj: Machinery Alteration (MACHALT) Instructions, Preparation of
- (w) NAVSEAINST 4130.6B of 20 May 1986, Subj: Ordnance Alteration Instruction Control Procedures
- (x) NAVSEAINST 4130.9A of 27 September 1986, Subj: Configuration Control Procedures for Preparation and Implementation of Ordnance Alterations (ORDALTs) to Expendable and Non-Expendable Ordnance Items
- (y) MIL-STD-1662 of 25 August 1986, Subj: Ordnance Alteration (ORDALT) Instructions, Preparation of
- (z) MIL-F-17655C of 4 February 1969, Subj: Field Changes and Field Change Kits; General Specifications for

SECTION 1
Policy and Responsibilities

1. Discussion

a. The Department of the Navy CM Manual, enclosure (1) to reference (a), provides CM policy and detailed practices and procedures for all Navy activities. As described in reference (a), the purpose of CM is to provide a systematic means for documenting and controlling the configuration of material items so that managers can better regulate total life-cycle costs, contract requirements, schedules, operational performance and readiness, and integrated logistic support (ILS). As defined in reference (a), CM is composed of the following five interrelated elements:

(1) Configuration Identification. Identifying a Configuration Item (CI) and selecting the documents and processes that define, test and establish its functional and physical characteristics.

(2) Configuration Control. Controlling changes to a baseline of a CI and its associated configuration identification documents.

(3) Configuration Status Accounting. Recording and reporting of proposed and implemented changes to a CI and its associated configuration identification documents.

(4) Configuration Audits. Checking a CI for compliance with its configuration identification.

(5) Technical Reviews. Evaluating and monitoring the configuration during design development, construction or production and modernization.

b. Additional CM discussion is provided in Section 2. Included is information on CIs, CI life cycle management levels and CM during the acquisition and operational life cycle phases. Sections 3 and 4 outline the life cycle CM milestones for ships, systems and equipment, including computer software and firmware.

2. Policy

a. CM shall be applied by platform and systems and equipment managers, and other supporting managers throughout the life cycle of ships, systems and equipment, including computer software and firmware in accordance with reference (a) and the policy of this instruction.

b. The degree of CM applied shall be tailored for consistency with the quantity, size, life cycle phase, complexity, intended

use, and mission criticality of the CI involved. CM shall be exercised throughout a CI's total life cycle as discussed and outlined in Sections 2, 3, and 4 of this instruction.

c. CM shall permit the maximum latitude during early design and development phases and ensure introduction of configuration control necessary during final design, production or construction and operation. Configuration baselines shall be established for ships, systems, and equipment, including computer software and firmware, as defined in reference (a). Specifications and drawings shall be considered primary baseline documentation. Other program documentation shall be maintained to the baseline documentation.

d. Provisions shall be made in the early CM planning and execution stages to ensure that the current configuration identification is always known and that configuration change impact is properly assessed to support areas such as ILS (including training), weight control, safety, quality and system engineering.

e. As required by reference (a), a CM Plan shall be developed and implemented for all ship and government furnished system and equipment programs, including computer software and firmware. CM provisions for contractor furnished systems and equipment will ordinarily be covered in the ships' CM Plan. Section 5 provides guidance on the contents for and practical application of the CM Plan. A single CM Plan may suffice for a similar type of ship (e.g. "T-Ships") or for groupings of family related systems or equipment if sufficient CM program specific information is provided for each CI being managed and controlled by the same program office. The CM Plan shall be reviewed and updated, if necessary, and approved prior to entering each program life cycle phase. It shall also be updated as significant changes occur in the program, specifically in the acquisition and/or logistic support strategy.

f. As required by reference (a), applicable configuration identification documentation shall be developed and/or maintained throughout the life cycle of all CIs. Each program level CI will have a designated Configuration Manager who is responsible for the life cycle maintenance and control of the configuration identification documentation and the baseline that it defines. Examples of configuration identification documentation are presented in Section 6.

g. The Planning Yard assigned for each new ship class shall be tasked and funded by the Ship Program Manager (SPM) or cognizant Program Manager for each new ship delivered under the shipbuilding contract to ensure the accuracy of configuration identification documents and data. Planning Yard involvement should start as close to the end of contract design as practical, preferably prior to issuance of the solicitation for ship construction.

h. Reference (a) directs the development and operation of a central Configuration Status Accounting (CSA) System for ships and ship related systems and equipment, including computer software and firmware.

i. SPMs or cognizant Program Managers and Government Furnished Equipment (GFE) Life Cycle Managers (LCMs) shall establish life cycle Configuration Control Boards (CCBs) to act on all proposed configuration changes. CCBs shall be established for ship and systems or equipment level acquisition programs prior to establishing the Functional Baseline. Sections 7 and 8 provide guidance for developing and establishing a configuration change control process and a CCB Charter.

j. Procurement Request (PR) packages for design development, production or construction or operational support of ships, systems and equipment, including computer software and firmware (including privately developed items) shall include specific CM requirements. These requirements are equally applicable to the acquisition of reprocurment items. Examples of CM contract requirements are provided in Section 9.

3. **Responsibilities**

a. The Deputy Commander for Surface Combatants (SEA 91), the Deputy Commander for Submarines (SEA 92), and the Deputy Commander for Amphibious, Auxiliary, Mine and Sealift Ships (SEA 93)

(1) Direct and oversee, within their directorates and shore activities and for NAVSEA programs not under SEA 05 or SEA 06 cognizance, the implementation of CM policy set forth in this instruction.

(2) Resolve disagreement/reclamas on proposed changes between Ships' Program Managers (SPMs) or cognizant Program Managers and systems and equipment Life Cycle Managers (LCMs). This includes resolution of ship design issues between the SPMs or cognizant Program Managers and the SEA 05 Ship Design Managers. When a common technical agreement cannot be reached on a change impacting more than one platform directorate, the proposed change will be referred to the Chief Engineer (CHENG) for final resolution and decision on the engineering aspects of the change proposal.

(3) Ensure that the following CM responsibilities and actions are properly assigned to Program Offices within their directorates. Respective Program Managers shall:

(a) Identify the ship level CIs and associated baseline documentation under their direct management cognizance.

(b) Develop and implement a CM Plan for each ship and/or system or equipment program, including computer software and firmware, under their cognizance using Section 5 as guidance.

(c) Establish a CCB and issue a CCB Charter for the ship and/or system or equipment program, including computer software and firmware, under their cognizance.

(d) Ensure that input for CCBs from cognizant LCMs for systems and equipment, including computer software and firmware, is received and assessed and that they are notified.

(e) Provide cognizant representation on the MACHALT and other equipment CCBs, as required.

(f) Exercise configuration change control using documented and established baselines as the departure point for change control. Procedural guidance is provided in Section 7.

(g) Ensure all configuration changes are properly processed and concluded.

(h) Ensure all contract and data requirements comply with this instruction.

(i) Submit requests for exceptions to the specified policy and defined responsibilities of this instruction through the Deputy Chief Engineer for Logistics (CHENG-L).

b. The Deputy Commander for Ship Design and Engineering (SEA 05) and the Deputy Commander for Weapons and Combat Systems (SEA 06)

(1) Direct and oversee, within their directorates and shore activities, the implementation of CM policy set forth in this instruction.

(2) Ensure that the following CM responsibilities and actions are properly assigned to Program Offices within their directorates. Respective Program Managers shall:

(a) Identify the system and equipment level CIs and associated baseline documentation under their direct management cognizance.

(b) Develop and implement a CM Plan for each government furnished system or equipment program, including computer software and firmware, under their cognizance using Section 5 as guidance.

(c) Establish a CCB and issue a CCB Charter for the government furnished system or equipment program, including computer software and firmware, under their cognizance.

(d) Exercise configuration change control using documented and established baselines as the departure point for change control. Procedural guidance is provided in Section 7.

(e) Ensure all system or equipment change proposals having a ship level impact or which impact a ship interface (e.g., a cascading change) are presented to the appropriate SPM or cognizant Program manager CCB for approval or disapproval authority.

(f) Provide participating membership on SPM or cognizant Program Manager CCBs and initiate and/or technically approve all changes for systems and equipment, including computer software and firmware, under SEA 05 or SEA 06 cognizance.

(g) Ensure all configuration changes are properly processed and concluded.

(h) Ensure all contract and data requirements comply with this instruction.

(i) Submit requests for exceptions to the specified policy and defined responsibilities of this instruction through the Deputy Chief Engineer for Logistics (CHENG-L).

c. The Deputy Commander for Industrial and Facility Management (SEA 07)

(1) Direct and oversee within the directorate and its shore activities the implementation of CM policy set forth in this instruction.

(2) Ensure that SEA 07 shore activities (e.g., Naval Shipyards and Supervisors of Shipbuilding, Conversion and Repair (SUPSHIPs)) implement CM in accordance with this instruction in coordination with cognizant platform and systems and equipment program managers. This applies to the repair, overhaul, procurement and reprocurement actions that affect ships, systems and equipment, including computer software and firmware, configurations.

d. The Deputy Chief Engineer for Logistics (CHENG-L)

(1) Develop and maintain NAVSEA life cycle CM policy for ships, systems and equipment, including computer software and firmware.

(2) Submit to higher authority NAVSEA requests for deviation from requirements of reference (a).

(3) Represent NAVSEA on the Department of the Navy CM Committee for all matters pertaining to reference (a).

(4) Advise cognizant NAVSEA program managers in the update, consolidation, integration or cancellation of their current CM guidance, directives and documentation.

(5) Monitor and conduct assessments of NAVSEA program managers' configuration change control and implementation processes to ensure that procedures and implementing actions comply with the policy of this instruction.

(6) Manage the design, development and operation of the central CSA data base for ships and ship related systems and equipments; ensure that supporting CSA files are compatible to facilitate data collection and maintenance in accordance with reference (d).

(7) Assist program managers in establishing unique identifiers for CIs under their cognizance. This includes the development of ship and submarine class Expanded Ship Work Breakdown Structure (ESWBS) manuals and Functional Configuration Baseline Indexes (FCBIs) in accordance with reference (e).

SECTION 2 Configuration Management Information

1. Configuration Items (CIs).

a. The CM process begins with the selection and unique identification of a hardware, software or firmware item as a CI. The selection of an item as a CI should be determined by the need to control the item's inherent design characteristics, attributes and performance or to control the item's interface with other related items that are managed independently. This includes the interfacing of logistic support products between the support system and the CIs they are developed to support. CIs may differ widely in complexity, size, and kind (e.g., a ship, propulsion system, navigation system, combat system, embedded computer, computer program, electronic system, feed pump, test equipment, or a round of ammunition are all considered possible CIs).

b. A CI satisfies an end-use function or aggregate of functions. Thus a top-level CI or "parent" item, such as a ship, major system or equipment, is composed of a number of lower level CIs to which various functions have been allocated by the designer. Similarly, functions of these lower level CIs are further suballocated downward resulting in the formation of a hierarchically structured family of CIs. By use of this hierarchical structuring concept, top level CIs can be broken down into sufficient detail such that lower level CIs can be uniquely identified and interfaced at some level of indenture.

c. A CI can be described in either functional, i.e. what it does, or physical, i.e., what it is, terms. Initially a CI is identified in a functional context that is uniquely related to technical specifications and requirements defined by the item's functional baseline documentation. During the design phase of a ship, the designers will specify in the form of some technical specification, a specific sub-system or equipment CI to be procured or fabricated. This initial CI may be identified by a specific manufacturer's part number. It may also be identified by a standard nomenclature such as a specific "AN/" or "MARK/MOD" designator for electronics or ordnance hardware items, respectively. In either case the CI is still considered a component of the ship's functional or allocated baseline and is in itself a functionally defined item. Transition to a physically defined item takes place when the item is manufactured and tested. The as built configuration of the item represents its product baseline. It becomes a component of the ship's product baseline when installed into a completed ship system. The unique CI may or may not be controlled by a serial number assignment, depending on the nature of the item. Each established baseline of a CI and that of its associated logistic support products is managed and controlled using a well defined family of baseline and other related configuration identification documentation, e.g., engineering drawings, technical manuals and APLs, applicable to

the whole population of the CI. Also, any specific changes to or variance from the baseline may have an impact on a particular application of the CI.

d. All shipboard CIs require identification and structuring so that they can be uniquely interfaced and integrated with items having various shipboard applications. The Expanded Ship Work Breakdown Structure (ESWBS), as defined in reference (e), is a functionally oriented, drawing based, hierarchical structure code system which provides the basis for developing a top-down breakdown arrangement of a total ship or submarine. The ESWBS system allows any part of the ship system, assembly, or subassembly to be uniquely identified relative to its next higher assembly. ESWBS was developed to standardize the integration of CIs between ships and systems and equipment. For the integration process to be effective, a functionally defined CI index, consistent with the design, must be established as early in a program as possible. A unique functional description and ESWBS based number should be assigned to each identified CI at that time. The functional description should be similar to the item's service description which may be found on the applicable ship engineering drawing. The unique ESWBS based number will provide a reference to the unique shipboard application of each CI independent of its specific, physical characteristics. Specific technical and logistic support products and information, including baseline documentation, can then be linked to each CI. The CI index will evolve in increasing detail as the ship design matures and transitions to its ultimate physical configuration. Once established, each unique CI ESWBS based number and functional description, as contained in the index, should not be changed unless the primary function, as it relates to its next higher assembly, is changed.

e. A similar hierarchical structuring system needs to be applied to CIs at and below the major system and equipment level.

2. **Life Cycle Management Levels.** Configuration Management for ships, systems and equipment, including computer software and firmware, must be practiced consistent with NAVSEA operating philosophy of life cycle management. The NAVSEA organization for life cycle management parallels the hierarchy and structure for ships. The Ships' Program Manager (SPM) or cognizant Program Manager (e.g., platform directorates and associated program managers) provides life cycle management for ship level CIs. The systems and equipment Life Cycle Manager (LCM) (e.g., engineering directorates (SEA 05 or 06) and their associated groups, subgroups, and divisions) provides life cycle management for systems, subsystems and equipment level CIs consistent with SPM or cognizant Program Manager CM plans and program direction from the platform directorates.

3. **CM During Acquisition Phase.** Initiating and establishing CM early in design and maintaining CM discipline throughout production or construction is essential to ensure that effective engineering and logistic support to ships, systems and equipment, including computer software and firmware, is provided over their

life cycle. Approved and authorized change proposals affecting ship systems (i.e., CIs managed and controlled at the SPM or cognizant Program Manager level), are implemented in accordance with Chapter 12 of reference (f). Approved and authorized change proposals affecting LCM controlled CIs (i.e., Government Furnished Equipment (GFE)) are implemented by a contract modification developed by the LCM and processed by the Procuring Contracting Officer (PCO). Programmatic impacts (e.g., cost and schedule) must be addressed at the SPM or cognizant Program Manager level. Configuration audits and technical or design reviews shall be scheduled and conducted by the cognizant program office as required by reference (a). At a minimum, the establishment of configuration baselines and the interface control between and among baselines for GFE, contractor furnished equipment (CFE), and the ship systems must be established and maintained.

4. CM During Operational Phase

Maintaining CM throughout the service life of ships, systems and equipment, including computer software and firmware, is essential to fleet readiness. Shipboard and shore station Fleet Modernization Program (FMP) configuration changes are planned, authorized, supported, and installed in accordance with reference (g). Section 8 of reference (g) establishes procedures for reporting all configuration changes accomplished during depot availabilities. The major categories of alterations are Ship Alterations (SHIPALTs), TRIDENT System Design Changes, Ordnance Alterations (ORDALTs), Machinery Alterations (MACHALTs), Engineering Changes, Field Changes and Marine Gas Turbine (MGT) Technical Directives. Design and configuration changes to the TRIDENT System (comprised of OHIO Class Submarines, those under construction and operational; dedicated maintenance, training and logistic facilities; and replacement equipment pools) are initiated, reviewed, funded, planned, authorized, implemented, supported, and documented in accordance with reference (b). MGT Technical Directives are developed, managed, controlled, processed and implemented in accordance with references (c) and (h). Authorized configuration changes are also implemented outside of the FMP by forces afloat, Naval Air Systems Command (NAVAIR), Space and Naval Warfare Systems Command (SPAWAR), and other activities. The procedures for providing and certifying the logistic support for all configuration changes, other than TRIDENT System Design Changes, accomplished outside of depot availabilities (e.g., Alteration & Improvement (A&I) items, Alteration Equivalent to a Repair (AER) items, MACHALTs, ORDALTs, engineering changes and field changes) including those changes planned and installed by Alteration Installation Teams (AITs) in accordance with reference (i), are established in reference (j). These configuration changes are managed and funded through a variety of programs. In all cases, reporting of configuration changes (including changes to technical training equipment and training devices) is accomplished in accordance with references (g), (j) and Chapter 9 of reference (k).

SECTION 3
Life Cycle CM Milestones-Ships

The following outline provides specific CM Milestone events that occur during each life cycle phase of a ship program.

1. **Preliminary Design Phase**

- a. Develop CM Plan for Preliminary Design.
- b. Document Functional Configuration Identification (FCI).
- c. Develop Configuration Control Process.
- d. Participate in Preliminary Design Review(s) (PDR).
- e. Establish Configuration Status Accounting (CSA) System.
- f. Update CM Plan for Contract Design.
- g. Establish Functional Baseline (FBL).

2. **Contract Design Phase**

- a. Conduct Configuration Control of FBL.
- b. Document Allocated Configuration Identification (ACI).
- c. Maintain CSA System.
- d. Participate in Contract Design Review(s) (CDR).
- e. Update CM Plan for Detail Design/Lead Ship Construction.
- f. Establish Allocated Baseline (ABL).

3. **Detail Design/Lead Ship Construction Phase**

- a. Conduct Configuration Control of FBL and ABL.
- b. Document Product Configuration Identification (PCI).
- c. Maintain CSA System.
- d. Participate in Detail Design Review(s) (DDR).
- e. Conduct Functional Configuration Audit (FCA).
- f. Conduct Physical Configuration Audit (PCA).
- g. Update CM Plan for Follow Ship Construction and Lead Ship Operational Support.
- h. Establish Product Baseline (PBL).

4. **Follow Ship Construction Phase**

- a. Conduct Configuration Control of FBL, ABL and PBL.
- b. Maintain CSA System.
- c. Conduct Follow-On Configuration Audits (if applicable).
- d. Update CM Plan for Follow Ship Operational Support.

5. **Operational Support Phase**

- a. Maintain Configuration Control of FBL, ABL and PBL.
- b. Maintain CSA System.
- c. Conduct Follow-On Configuration Audits (if applicable).
- d. Update CM Plan during Operational Support.

SECTION 4
Life Cycle CM Milestones-Systems and Equipment,
Including Computer Software and Firmware

The following outline provides specific CM Milestone events that occur during each life cycle phase of a system or equipment program, including computer software and firmware.

1. Concept Exploration/Definition Phase

- a. Develop CM Plan for Concept Exploration/Definition.
- b. Document Functional Configuration Identification (FCI).
- c. Develop Configuration Control Process.
- d. Participate in System Requirements Review (SRR).
- e. Establish Configuration Status Accounting (CSA) System.
- f. Update CM Plan for Concept Demonstration/Validation.
- g. Establish Functional Baseline (FBL).

2. Concept Demonstration/Validation Phase

- a. Conduct Configuration Control of FBL.
- b. Document Allocated Configuration Identification (ACI).
- c. Maintain CSA System.
- d. Participate in System Design Review (SDR).
- e. Update CM Plan for Full Scale Development.
- f. Establish Allocated Baseline (ABL).

3. Full Scale Development Phase

- a. Conduct Configuration Control of FBL and ABL.
- b. Document Product Configuration Identification (PCI).
- c. Maintain the CSA System.
- d. Participate in Software Specification Review (SSR) (if applicable).
- e. Participate in Preliminary Design Review (PDR).
- f. Participate in Critical Design Review (CDR).
- g. Participate in Test Readiness Review (TRR).
- h. Participate in Formal Qualification Review (FQR).
- i. Participate in Production Readiness Review (PRR).
- j. Conduct Functional Configuration Audit (FCA).
- k. Conduct Physical Configuration Audit (PCA).
- l. Update CM Plan for Full Rate Production/Deployment.
- m. Establish Product Baseline (PBL).

4. Full Rate Production/Deployment Phase

- a. Conduct Configuration Control of FBL, ABL and PBL.
- b. Maintain CSA System.
- c. Conduct Follow-On Configuration Audits (if applicable).
- d. Update CM Plan for Operational Support.

5. Operational Support Phase

- a. Maintain Configuration Control of FBL, ABL and PBL.
- b. Maintain CSA System.
- c. Conduct Follow-On Configuration Audits (if applicable).
- d. Update CM Plan During Operational Support.

SECTION 5
Configuration Management Plan Content Guidance
and Practical Applications

1. **Signature Page**. A signature page similar to that of Figure 5-1 should be included with each CM Plan. The CM Plan number assignment should be consistent with the numbering system described in reference (1).
2. **Introduction**. This section should provide a brief background on and description of the program configuration item(s) (CI), the current status of the program, and any special features of the program. Also, this section should address the purpose, scope, and general applicability of the CM plan.
3. **Background and Description**. Sufficient detail should be presented to permit a basic understanding of the program CI and its complexity. The following information should be provided in a manner that will preclude security classification of the plan, if possible:
 - a. Supporting hardware, software or firmware description.
 - b. Description of the hardware, software or firmware capability as related to mission and to each CI.
 - c. A block diagram or pictorial overview of the CI(s).
4. **CM Program Planning**. Define the current status of the CM program and identify the specific life cycle phase at the time of preparation or update of the plan. Include a life cycle CM milestone chart that depicts completed and planned CM actions. Ensure consistency with the life cycle ILS and Computer Resources Plans. The following information should be provided or discussed.
 - a. Provide a chart for each phase of the program CI's life cycle, depicting specific scheduled and completion dates or milestones of CM actions, events and products.
 - b. Provide guidance and description of CM program interface agreements that have been established with other program offices, NAVSEA offices, CI Managers, and DOD Departments or Services, etc.
 - c. Authorized or proposed exceptions to NAVSEA CM policy requirements, their justification and identification of the approving authority.
 - d. Program specific and unique policy directives related to CM.

5. **Special Features.** Describe special features of the CI or of the program that affect CM. For example: major product improvement programs that result in more than one baseline being supported in the field; depot rebuild programs designed to reduce the differences among models; major model differences, system variants or applications. Describe peculiarities of the CM program that result from participation by a large number of organizations or unique contracting methods (e.g., preproduction evaluation, use of many commercial items, use of existing drawings and specifications and employment of an integrating contractor). Also describe any innovations intended to increase the effectiveness of the CM program.

6. **Applicability of the CM Plan.** Define the applicability of this plan.

7. **Applicable Documents.** List all referenced specifications, standards, manuals, and documents. Identify each document by title, number, and date of issue.

8. **CM Organization.** This section defines all the responsibilities and coordination requirements of CM Program organizations and support activities. Identify appropriate codes, departments, etc., and include supporting contractors and government field activities. Detail the authority and responsibility for CM of each activity or individual shown on the organization chart(s) discussed in the following organizational structure:

a. **CM Program Structure.** Provide an organizational chart depicting the various organizations (within and outside NAVSEA) and general relationship among organizations involved in the CM Program. Using the chart, supplemented by a brief narrative, define the authority and responsibility of all participating groups and key organizational activities affected by CM Program requirements.

b. **CM Program Office Structure.** Provide a CM program office organizational chart supplemented by a brief narrative description of each position and responsibility. Include the CM office or function, Program Manager, Configuration Manager, ILS Manager, Procuring and Administrative Contracting Officer, contractors to the extent employed in the program and any other offices that are involved.

c. **Configuration Control Board (CCB).** Include the CCB Charter which establishes the program office's CCB. The CCB Charter can be an appendix to the program office CM Plan and should include the following:

- (1) CCB membership by code and functional responsibilities.
- (2) Relationship of CCBs if there is more than one change proposal approval level or separate CCBs.

9. **Configuration Identification**. This section defines the process for the selection of CIs, development of configuration identification documentation, and establishment of configuration baselines. The following information should be provided or discussed:

a. Application and tailoring of DoD Standardization documents used for configuration identification purposes.

b. Identification of pertinent configuration identification documentation and established baselines. Also, identification of baseline documentation (specifications or drawings) by title, number, revision and date.

c. Functional and physical unique CI identifiers, including specific nomenclatures, designators, hierarchical structuring systems and codes and part or drawing numbers, as applicable.

d. Identification of documentation developed as part of the interface control program.

e. Identification of documentation that identifies interface parameters for production or construction.

f. The relationship between related CIs and how they interface with other CIs if more than one CI is involved.

g. Process for preparing, numbering, disseminating, controlling, maintaining, amending, storing, and identifying the custodian and user activities for each configuration identification document and amendments or revisions thereto.

h. Process for requesting official CI nomenclature assignments.

i. Process for CI part identification and assignment of government serial numbers.

10. **Technical Reviews**. This section defines the planning and conduct of technical or design reviews. Information should include:

a. Application and tailoring of references (m) and (n) for systems and equipment, including computer software and firmware programs.

b. Application and tailoring of references (m) and (o) for ship programs.

c. Technical or design reviews required during acquisition of the CI including the decision for conducting each technical or

design review as a single event or on an incremental basis, and the expected CM interface or impact resulting from the review.

d. Requirements for additional technical or design reviews during the Production or Construction, follow-on Production or Construction, and Operational Support phases.

e. The process for conducting, coordinating, monitoring, documenting and reporting applicable technical or design reviews.

f. Participants and their responsibilities, including engineering and quality assurance coordination.

g. Identification of the CI(s) to be reviewed and the level and degree to which the technical or design reviews will be conducted.

11. **Configuration Audits**. This section defines the planning and conduct of configuration audits. Information should include:

a. Application and tailoring of reference (m).

b. The process for conducting, coordinating, monitoring, documenting and reporting functional and physical configuration audits.

c. The decision for conducting each configuration audit as a single event or on an incremental basis.

d. Participants or activities and their responsibilities, including engineering and quality assurance coordination.

e. Requirements for additional configuration audits during the Production or Construction, follow-on Production or Construction and Operational Support phases.

f. Identification of the CI(s), the configuration baseline documentation and other configuration identification documentation to be audited, as well as the level and degree to which the configuration audits will be conducted.

g. Process for identifying and correcting audit findings and discrepancies.

12. **Configuration Control**. This section defines the responsibilities and procedures for configuration control of hardware, software and firmware CIs. Specify interfaces within or between government activities and government and contractor activities. Information should include:

a. The application and tailoring of references (p) or (q) and references (n) and (r).

- b. The configuration change control process, including participants (by function and organization).
- c. Configuration Control Board (CCB) operations, including change proposal approval and disapproval authority, limits of authority, and requirements for coordinating and interfacing with other CCBs and higher authority.
- d. Interface Control Working Groups (ICWGs) and participants.
- e. Government approval and disapproval authority for engineering change proposals (ECPs), requests for deviations (RFDs) and waivers (RFWs).
- f. Process and procedures for implementing the approved and/or authorized change into the CI, its configuration identification documents, its logistic support products, and in follow-on contract requirements, including the use of Specification Change Notices (SCNs) and Notices of Revision (NORs).
- g. Process for ensuring the approved and authorized ECP is incorporated on schedule and the incorporated change satisfies its intended purpose(s).
- h. If applicable, procedure for preparing, reviewing, approving, authorizing and installing retrofit kits (e.g., SHIPALTs, ORDALTs, MACHALTs, Field Changes, Engineering Changes and Marine Gas Turbine Technical Directives).
- i. Special criteria for use of preliminary ECPs or early assessment forms documenting the need for a change.
- j. Provisions for maintaining copies of ECPs, RFDs and RFWs, including location and custodian.
- k. Provisions for maintaining a program office change proposal tracking system.
- l. Process and activities responsible for incorporating approved and authorized ECPs.

13. **Configuration Status Accounting.** This section defines the process for collecting, storing, handling, verifying, validating, maintaining and presenting Configuration Status Accounting (CSA) information. This section should specify the techniques applied to provide an information system responsive to the needs of the entire program management team. Discussion should include the following:

- a. Application and tailoring of reference (s).
- b. Procedures (including provisions for maintaining an automated CSA system) and participants involved in CSA data

collection, processing, maintenance and distribution of CSA reports.

c. Content, format and data elements of the CSA data collection, file and distribution system.

d. Additional information including distribution of data from the CSA system, purpose for the data, frequency of publication, timeliness of each part of the CSA system, and distribution requirements.

e. Define the activity(s) responsible for developing and maintaining the CSA system.

f. Discuss the configuration data flow network defining how CSA configuration data is entered into the Weapon Systems File (WSF) and all activities involved and their responsibilities.

14. **Logistic Interface and Update.** This section of the CM plan describes logistic and CM interface. Discussion should include the following:

a. A process for ensuring all approved and authorized Class I ECPs are properly reviewed for logistic impact.

b. Responsibilities for logistic impact assessment (e.g., on training technical data, supply support and maintenance) for program CIs and for other CIs that are a part of or interface with the program CI.

c. Closed loop and feedback system to ensure that logistic changes are made.

Practical Applications of the CM Plan

The CM Plan documents Life Cycle CM Planning. The Plan provides CM Program milestones and schedules to monitor program status.

The CM Plan also defines CM Program responsibilities, practices and procedures. It may be used as a contract exhibit requiring the contractor's CM Program to be compatible with the government CM Program. Also, the Plan provides guidance to the supporting field activities to assist in their resource planning. Additionally, the CM Plan will support the program office in its resource planning and in personnel turnovers.

NAVSEA CM Plan No. _____

CONFIGURATION MANAGEMENT PLAN
FOR

(Provide Name of Ship, System, Equipment, Computer Software or Firmware)

Acquisition Category (ACAT) _____

(Identify Life Cycle Phase)

APPROVAL SIGNATURES

_____ Program Manager and Code	_____ Date
_____ Configuration Manager and Code	_____ Date

Figure 5-1

SECTION 6
Configuration Identification Documentation

(EXAMPLES)

Examples of configuration identification documentation developed and maintained for ships, systems and equipment, including computer software and firmware, are as follows:

a. Ships

Functional

- Top Level Requirements (TLR) defining the ship characteristics
- Referenced Drawings
- Engineering Requirements Document (ERD)
- Preliminary Design Report

Allocated

- Ship Specifications
- Contract and Contract Guidance Drawings
- Schedule A
- Master Equipment List
- Preliminary Functional Configuration Baseline Index (FCBI)
- Preliminary Class ESWS Manual

Product

- Ship Selected Records
- Ship Construction Drawings/As Built Drawings
- Class ESWS Manual
- Functional Configuration Baseline Index (FCBI)

b. Systems and Equipment, Including Computer Software and Firmware

Functional

- System Specification (Type A)
- Top Level Requirement (TLR) Document
- Level 1 Drawings
- Tactical Operational Requirement(s)
- Test Specification(s)
- Data Link Operational Specification(s)
- System Operational Specification(s)
- System Integration Test Plan

Allocated

- Development Specification (Type B)
- Level 2 Drawings
- Interface Control Drawings
- Program Design Specifications(s)
- Program Performance Specification(s)
- Interface Design Specification(s)

Product

- Functional Operational Specification(s)
- Product, Material and Process Specifications (Type C, D, & E)
- Level 3 Drawings
- Configuration Identification Manual
- Program Description Documents
- Acceptance Test Specifications and Procedures
- Data Base Design Document

SECTION 7
Configuration Change Control Process

1. Introduction and Overview

a. A life cycle configuration change control process must ensure efficient and effective change proposal processing without impeding design development, production, or operational readiness.

b. Accurate and current configuration identification is essential throughout the life cycle of a Configuration Item (CI).

c. Configuration Control Boards (CCBs) play a vital role in the configuration change control process. The CCB membership, as described in paragraph 3 of this Section, evaluates change proposals and makes recommendations to the deciding CCB Chairperson. The CCB membership shall thoroughly evaluate the technical validity of the proposed change; interface effect on other CIs, including new or retrofit ship and shore installations; impact on engineering areas and logistic support; effect on established delivery schedules; life cycle cost effectiveness and the availability of funds.

d. The discussion which follows describes a typical configuration change control process (depicted in Figure 7-1) and provides procedural guidance to be applied and tailored to meet the specific CM requirements for ship, systems and equipment, including computer software and firmware, programs.

2. Process Description

a. Change Proposal Preparation. The configuration change control process begins with the preparation of a configuration change proposal. Guidelines for change proposal preparation are provided in references (a), (f), (n), (p), (q) and paragraph 5 of this Section. The program office may choose to direct change proposal originators to first document and submit the need for a change. This early assessment of the problem and proposed corrective action allows the program office to make a decision on whether or not to commit resources for change proposal development.

b. Change Proposal Submission

(1) Change proposals are submitted to the program office CCB Secretary in accordance with contractual requirements or as otherwise specified (such as in the Program's CM Plan for government activities originating and processing change proposals).

(2) For contractor-originated Class I Engineering Change Proposals (ECPs) and critical or major deviations and waivers, the local government representative's office such as the Administrative Contracting Officer (ACO) (e.g., the Technical Design or Development Agent (TDA), Naval Plant Representative Office (NAVPRO), Defense Contract Administration Services (DCAS), Supervisor of Shipbuilding, Conversion and Repair (SUPSHIP), or even the In-Service Engineering Agent (ISEA)) will normally receive the change proposal, conduct an initial evaluation, and forward it to the program office CCB Secretary with comments and recommendations. For systems and equipment, including computer software and firmware changes, this can be done via DD Form 1998, (Figure 7-2) or by letter. For ships, an annotated copy of the change proposal will be forwarded. Paragraph 5.c of this Section discusses change proposal approval authority. Concurrence in the classification of the change proposal (Class I or II for ECPs and critical, major or minor for deviations and waivers) is an important function of the local government representative. If the local representative does not find the change proposal acceptable, it will be returned to the contractor with comments for rework. The actions taken by the local government representative's office must be clearly documented.

c. Change Proposal Tracking. The program office CCB Secretary will assign a unique change proposal control number to each change proposal and log the change proposal into a program office change proposal tracking system. The tracking system should include, as a minimum and as applicable, the following data elements: change proposal control number, originator's change proposal number, priority, class, originator, change proposal title, affected configuration item(s), date of receipt by the program office, CCB meeting date, change proposal approval, disapproval, and deferral or referral status.

d. Administrative Review and Distribution. After recording receipt of the change proposal (Class I ECP or critical or major deviation and waivers), the program's Configuration Manager and/or CCB Secretary will conduct an administrative review of the change proposal to determine if the change proposal is acceptable for processing. This review will be conducted for: compliance with references (p) or (q), compliance with contractual provisions, ECP completeness, including required attachments (e.g., Specification Change Notices (SCNs) or Notices of Revision (NORs) unless designated as a preliminary ECP), accuracy, and the need for review by interfacing activities in addition to the standard reviewing activities. The Program Manager will designate a Technical Manager (individual having technical cognizance of the configuration item affected by the change proposal) as the sponsor for the change proposal. Based on the administrative review, if the proposed change is unacceptable it will be returned to the originating activity (via the local government representative's office, as applicable) under formal letter from the CCB Chairperson stating the deficiencies and terms for re-submittal.

If the proposed change is acceptable, the CCB Secretary will forward, in parallel, copies of the complete change proposal package to designated reviewing activities and CCB members for evaluation and then for return to the CCB Secretary. The change proposal package should include: a copy of the original change proposal, the Change Proposal Review sheet, (Figure 7-3) and the Engineering Change Proposal Evaluation checklist, if applicable (Figure 7-4) or their equivalents. The due date for comments and recommendations for approval, disapproval or deferral shall be indicated on the package. The CCB Secretary shall be notified if a reviewing activity is unable to meet the assigned due date. The CCB Chairperson will determine if processing should continue without the activity's comments or if change proposal processing should be delayed.

e. Change Review Comment Package. The CCB Secretary will receive all returned change proposal packages and assimilate the comments and recommendations in a master change proposal package for CCB action. The master change proposal package shall contain:

(1) The original change proposal, submitted for approval, including all supporting data (e.g., SCNs and NORs) and all supplemental review and impact sheets;

(2) The completed Engineering Change Proposal Evaluation checklist(s); and

(3) The completed Change Proposal Review sheets.

f. Comment Assessment. Based on an assessment of the review comments, the Technical Manager will determine the need for a preliminary CCB or Technical Scope Review (TSR) meeting. The purpose of this meeting is to resolve sensitive technical issues among the reviewing activities as to the technical scope of the change.

g. Review

(1) If unanimous approval or disapproval recommendations are indicated on change proposal packages, a formal CCB meeting may not be required. If a formal CCB meeting is not required, and the change proposal is **approved** or **disapproved**, a CCB Decision and Action form (Figure 7-5) or equivalent will be prepared by the CCB Secretary and signed by the CCB Chairperson. A letter notifying the change proposal originator of the status will also be prepared by the CCB Secretary for the CCB Chairperson's signature.

(2) If a formal CCB meeting is required, a call letter will be prepared and issued by the CCB Secretary to CCB members and any additional activities, as required. The change proposal originating activity may be requested to attend on behalf of the Technical Manager.

h. CCB Meeting

(1) The formal CCB meeting will be convened by the CCB Chairperson. The purpose of the CCB meeting is to assist the CCB Chairperson in making the decision for approval, disapproval or deferral, not to re-engineer the change. If additional information is necessary to make the management decision, the change proposal may be deferred. This may require returning the change proposal to the originator for rework or clarification. Based upon the recommendations of the CCB Members, the CCB Chairperson will determine whether the proposed change should be:

- (a) Approved and CCB Decision and Action form prepared,
- (b) Approved as a Preliminary ECP as defined in reference (q), and preparation of a Formal ECP directed,
- (c) Disapproved and returned to the originator with an explanatory letter, or
- (d) Deferred to a later meeting to allow further evaluation or possible revision.

(2) If the Chairperson decides to direct the implementation of a change which a member of the CCB has found not to be properly supported, the Chairperson must, in each case, document the reasons for so doing.

i. Meeting Results. Following the formal CCB meeting, the CCB Secretary will prepare necessary CCB Decision and Action form(s), a change implementing letter and meeting minutes for review and signature by the CCB Chairperson. If the change proposal is **disapproved**, it will be returned to the originating activity (via the local government representative's office, as applicable) under formal letter from the CCB Chairperson. If the proposed change is **approved** and authorized (funded), the Change Proposal, the Change Proposal Review sheets and the Engineering Change Proposal Evaluation checklists will be used as sources for identifying required change implementing actions. The CCB Secretary will consult with the Configuration Manager and ILS Manager during the review of the signed CCB Decision and Action form for the identification and assignment of implementing actions. The CCB Decision and Action form shall be completed in accordance with change implementing procedures of reference (a) and distributed with a copy of the approved change proposal to all activities having assigned implementing action(s).

j. Tasking. The Configuration Manager is responsible for preparing the necessary tasking (e.g., contract modification or work request) and assigning implementing actions to responsible activities. As a minimum, implementing actions will include updating the current baseline documentation and affected logistic support products. The appropriate logistic element manager or ILS

manager is assigned the responsibility for ensuring all logistic products are properly reviewed and updated if affected by a change. As required, the Configuration Manager will draft a contract modification (for ships, a Headquarters Modification Request (HMR) shall be prepared in accordance with Chapter 12 of reference (f)) for processing by the Procuring Contracting Officer (PCO), to incorporate the change into the applicable configuration baseline. For Government field activities supporting the program office, a work request or SEATASK should be developed to assign implementing actions. The CCB Decision and Action form can be used for assignment of tasks to Navy activities. The contractor can only be directed to complete actions by contract authorization.

k. Follow-Up. Implementing actions are required for each change proposal approved and authorized. Implementing activities are responsible for the completion of actions as assigned by a CCB Decision and Action form and/or as tasked by contract, and the reporting of completed actions to the program office. The Configuration Manager is responsible for verifying the successful completion of all associated CCB approved implementing actions. Procedures should be established for tracking and reporting implementation of changes in the technical and logistic support documentation. An implementing action item tracking system should be established within each program office referencing the change proposal control number. Navy support activities can report, in writing, the verification of change implementation directly to the program office. The contractor shall be monitored by the local government representative's office, with that office officially notifying the Configuration Manager of the accomplishment of contractor assigned actions including verification of accurate production or construction cut-in of the approved and authorized change.

3. CCB Composition and Responsibilities. The following is a description of and further discussion on the composition and responsibilities of CCBs.

a. CCB Charter. CCB charters which depict CCB composition and specific responsibilities are established and issued by the program office and should be included in the program office CM Plan.

An example of a CCB Charter promulgation letter is provided as Section 8.

b. Membership. The CCB will normally consist of a Chairperson (and/or Alternate Chairperson), Secretary, Technical Manager, and Integrated Logistic Support (ILS) Manager. The following functional areas should also be represented on the CCB, as appropriate: configuration management, safety, quality assurance, reliability, maintainability, human engineering, finance, contracting, weight and moment control, installation and/or production or construction, test and evaluation, and interface

control. This representation can be either as standing or voting members of the CCB or as change proposal reviewers. The functions and duties of the Configuration Manager and Secretary are sometimes combined for practical reasons. For the specific functional area or areas of responsibility, each member of the CCB shall provide comments and approval or disapproval recommendations on each change proposal. Technical advisors and cognizant representatives from the design activity, user organizations, implementing activities and those activities providing logistic support (e.g., Chief of Naval Education and Training (CNET) and Ships Parts Control Center (SPCC)) may attend CCB meetings on an as required basis.

c. Member Responsibilities

(1) CCB Chairperson. The CCB Chairperson (or Alternate) has the authority to approve, disapprove or defer a change proposal. The Chairperson is generally at the level of Program Manager, Deputy Program Manager, or higher level. The Chairperson is responsible for:

(a) Chairing all CCB meetings.

(b) Assuring that all appropriate members have had an opportunity to review the proposed change in their respective areas of responsibility.

(c) Assuring adequate member representation for interface impacts.

(d) Approval, disapproval or referral action on all change proposals in accordance with program policies.

(e) For LCM level changes requiring SPM or cognizant Program Manager approval, arranging for a single presentation, vice individual meetings, for all activities having life cycle CM responsibility for the CI affected by the proposed change.

(2) Secretary. A CCB Secretary shall be designated to provide for proper coordination, evaluation, processing, and implementation of change proposals. Each change proposal shall be provided to the CCB Secretary for coordination and administrative action. These actions involve the recording, duplication, managing, and expediting the distribution of the change proposal to the CCB members for comment and return. The CCB Secretary shall accumulate all comments, ensure that all applicable blocks of the standard forms are completed, provide sufficient copies, and submit the forms, supplemental attachments, and all comments to the CCB. The CCB Secretary shall record all CCB Meetings and shall be responsible for administering all CCB procedures and actions. The CCB Secretary is responsible to the Chairperson for:

(a) Administering CCB operations, scheduling CCB meetings, arranging for attendance by appropriate CCB members and other cognizant personnel, providing staff assistance to the Chairperson, and indoctrinating and assisting CCB members in the procedures of the CCB.

(b) Maintaining the program office change proposal tracking system. Ensuring that the change proposal approval and authorization status is recorded in the program office change proposal tracking system.

(c) Performing the administrative review of changes for completeness and inclusion of all applicable attachments.

(d) Preparing change proposal review packages and ensuring proper distribution for evaluation.

(e) Preparing and distributing the CCB meeting agenda, CCB meeting minutes, and CCB Decision and Action forms.

(f) Preparing letters to the change proposal originators to advise them of the change proposal disposition.

(3) Configuration Manager

(a) Developing a schedule for accomplishing the actions directed on the CCB Decision and Action form.

(b) Ensuring that contract modifications and/or funding actions are properly prepared and executed.

(c) Coordinating determination of the priority of change implementation for production or construction cut-in.

(d) Verifying the successful completion of assigned implementing actions.

(e) Establishing and maintaining an implementing action item tracking system.

(4) Technical Manager

(a) Sponsoring the change proposal.

(b) Assuring accuracy and completeness of the technical information presented on the change proposal form.

(c) Determining areas of engineering inter or intra-system interfaces (i.e., equipment-to-ship, equipment-to-equipment, equipment-to-computer program or computer program to computer program) for each change and providing for interface impact evaluation. Informing platform directorates and ship design offices of a proposed system or equipment change having a

ship level impact and providing them copies of the change proposal prior to the CCB meeting.

(d) Coordinating all change proposals having weight and moment impact through the weight control engineer for review and concurrence.

(5) ILS Manager

(a) Reviewing change proposals for ILS impact.

(b) Identifying logistic-related implementing actions associated with implementing the change.

(c) Ensuring all logistic products are properly reviewed and updated if affected by the approved change.

(6) Other Standing or Voting Members

(a) Representing and committing their organization with respect to the proposed change.

(b) Providing approval or disapproval recommendations for changes within their areas of cognizance.

(c) Functioning as the primary contact within their organization for the proposed change.

(d) Ensuring that all change proposals which require inputs from their organization are reviewed within the specified time.

4. Configuration Interface Control. All change proposals shall be evaluated for interface impact. Configuration Management (CM) interface agreements shall be established when the CM responsibilities of a CI in the Program involve interfacing managers. Each interface agreement will define CM responsibilities, practices and procedures for each interfacing manager (e.g., other program or CI managers, other Systems Commands and other DoD Departments or Services). Interface agreements are to be addressed in the Program's CM Plan and updated as required. For interfaces between systems and equipment on ship platforms, Ship Project Directives (SPDs) will be prepared by the SPM or cognizant Program Manager to document the appropriate CM tasking and responsibilities of the Participating Manager (PARM) or cognizant system and equipment LCM. The PARM or cognizant system and equipment LCM should review the proposed SPD to ensure complete understanding of specified taskings and responsibilities. If there is an interface impact within or between systems, equipment, or computer software or firmware organizations, or between CI level managers, the interfacing technical manager affected shall be represented as a member of the CCB.

a. Multiple Impact. Systems and equipment, including computer software and firmware, level change proposals having a ship level impact which impact a ship interface (e.g., a cascading change) should be presented to the appropriate SPM or cognizant Program Manager for final approval or disapproval. If a system, equipment, computer software or firmware change proposal requires SPM or cognizant Program Manager review and approval, the change proposal shall not be submitted formally to the SPM or cognizant Program Manager concerned without having been previously approved by the system, equipment, or computer software or firmware CCB. Disagreements between the cognizant system, equipment, or computer software or firmware LCM organization and the SPM or cognizant Program Manager shall be referred to the appropriate Platform Deputy Commander or higher management level identified in the program office CM Plan for resolution of the specific disagreement.

b. Interface Control Working Group (ICWG). An ICWG should be formed to control system interfaces if more than one program office is involved in the total program. An ICWG may also be formed to control system interfaces within a single program if so warranted by that program's complexity. The purpose of the ICWG is to develop mutual agreements on the means of identifying the interfaces between allocated CIs, level of configuration identification and control and procedures for processing changes. The ICWG will be chaired by the program office for the highest level CI. The ICWG will review all proposed configuration changes that might affect the allocated baseline, ILS, or standardization of the higher level CI. However, the ICWG will not have the authority to approve and authorize a proposed change.

c. Foreign Military Sales. ECPs applicable to CIs acquired for foreign governments will not be presented for formal consideration to Foreign Military Sales case managers or contractors providing services to foreign governments without first having been considered and approved by the program office CCB.

5. Configuration Change Proposals. The following amplification of the policy contained in reference (a) is included for information and use by program managers as required.

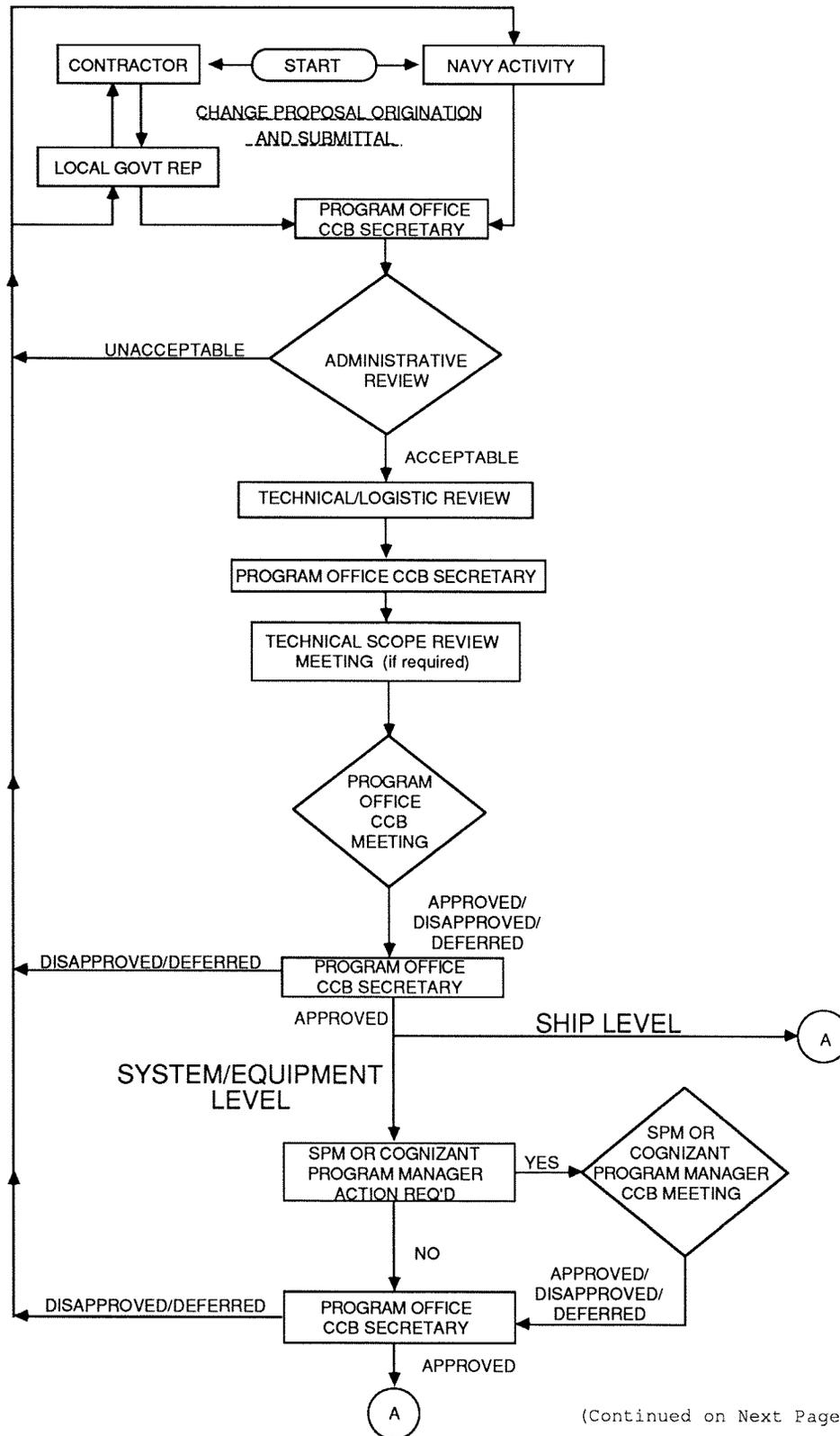
a. Engineering Change Proposals, Deviations and Waivers. Configuration change proposals are defined as Engineering Change Proposals (ECPs), Deviations or Waivers. Reference (p) and (q) define the requirements for use, content, format, classification, priority, justification, revisions or corrections, and target processing times of long and short form ECPs and Deviations and Waivers. Reference (p) also defines the purpose and use of Notices of Revision (NORs). References (p) and (r) discuss the purpose and use of Specification Change Notices (SCNs). Change proposals shall be prepared in accordance with these standards.

However, the requirements of these standards can be tailored by the SPM or cognizant Program Manager or LCM to meet CM program objectives.

b. Computer Software and Firmware Changes. Software Change Proposals (SCPs) and/or Software Enhancement Proposals (SEPs) were previously developed in accordance with reference (t). Reference (t) has been superseded by reference (n) which does not address SCPs and SEPs. Systems or equipment acquisition programs should ensure contract and data requirements use the ECP format in accordance with references (p) or (q). SCP or SEP forms may be used as attachments to the ECP if desired.

c. Change Proposal Approval Authority. For systems and equipment, including computer software and firmware acquisitions, the program office will determine the level of authority required to approve a change proposal. The only restriction is that the authority for approval of Class I ECPs and Major and Critical Deviations and Waivers is reserved to the program office within NAVSEA. Class II ECPs and Minor Deviations and Waivers can be approved by the local government representative's office such as by the Administrative Contracting Officer (ACO). This authority has to be delegated by the PCO at NAVSEA to the supporting activity by letter of delegation. For ship acquisitions, the level of authority required to approve a change proposal is detailed in Chapter 12 reference (f).

CHANGE PROPOSAL PROCESSING



(Continued on Next Page)

Figure 7-1
7-11

CHANGE PROPOSAL PROCESSING (Cont'd)

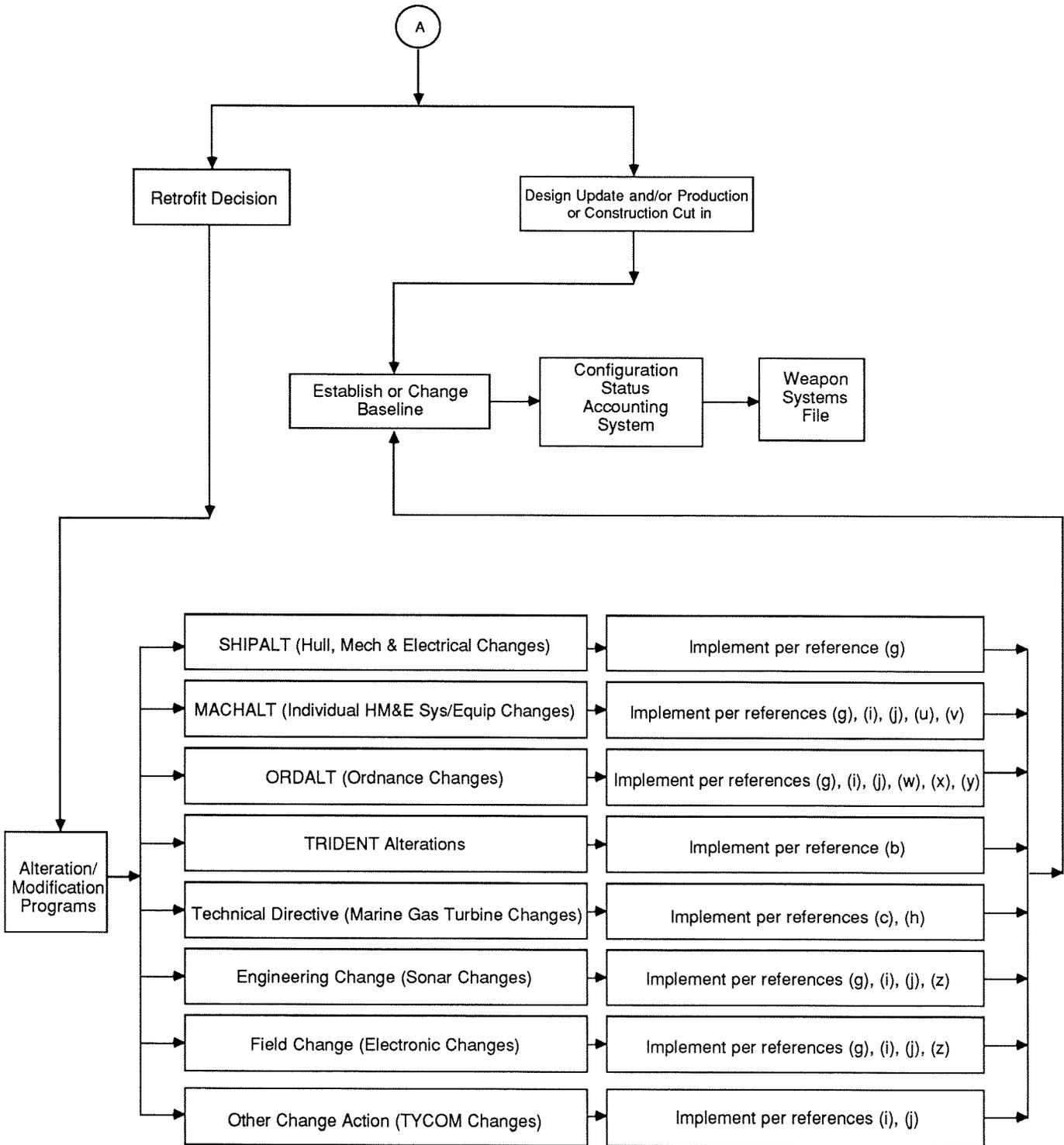


Figure 7-1 (Cont'd)
7-12

COMMENTS ON WAIVER, DEVIATION OR ENGINEERING CHANGE REQUEST		1. DATE OF REQUEST	
2. PRIME CONTRACTOR (Name, city and state)		3. PLANT (Name, city & state, if different than item 2)	
3. CLASS OF ECP OR TYPE OF NONCONFORMANCE <input type="checkbox"/> I <input type="checkbox"/> II <input type="checkbox"/> NOT CLASSIFIED		4. TYPE OF REQUEST <input type="checkbox"/> WAIVER <input type="checkbox"/> DEVIATION <input type="checkbox"/> ECP	
6. REQUEST OR ECP NUMBER		7. CONTRACT NUMBER	
ROUTINGS, ACTIONS, RECOMMENDATIONS, COMMENTS AND/OR REMARKS			
8. QUALITY ASSURANCE REPRESENTATIVE A. <input type="checkbox"/> ADEQUACY AND ACCURACY OF REQUEST VERIFIED B. <input type="checkbox"/> CONCUR IN CLASSIFICATION C. <input type="checkbox"/> NONCONCUR IN CLASSIFICATION D. <input type="checkbox"/> APPROVAL RECOMMENDED E. <input type="checkbox"/> APPROVAL NOT RECOMMENDED			
TYPED NAME AND TITLE OF INITIATOR		SIGNATURE	
		OFFICE SYMBOL:	
		PHONE NO.:	
		DATE SIGNED:	
9. <input type="checkbox"/> ROUTED TO QA STAFF OR ENGINEER A. <input type="checkbox"/> CONCUR IN CLASSIFICATION B. <input type="checkbox"/> NONCONCUR IN CLASSIFICATION C. <input type="checkbox"/> APPROVAL RECOMMENDED D. <input type="checkbox"/> APPROVAL NOT RECOMMENDED			
TYPED NAME AND TITLE OF REVIEWER		SIGNATURE	
		OFFICE SYMBOL:	
		PHONE NO.:	
		DATE SIGNED:	
10. <input type="checkbox"/> ROUTED TO CAO PRODUCTION OFFICE A. <input type="checkbox"/> APPROVAL RECOMMENDED B. <input type="checkbox"/> DISAPPROVAL RECOMMENDED			
TYPED NAME AND TITLE OF REVIEWER		SIGNATURE	
		OFFICE SYMBOL	
		PHONE NO.	
		DATE SIGNED	
11. <input type="checkbox"/> ROUTED TO ACO A. <input type="checkbox"/> APPROVAL RECOMMENDED B. <input type="checkbox"/> DISAPPROVAL RECOMMENDED			
TYPED NAME AND TITLE OF REVIEWER		SIGNATURE	
		OFFICE SYMBOL	
		PHONE NO.	
		DATE SIGNED	
12. <input type="checkbox"/> ROUTED TO OTHER (Specify): A. <input type="checkbox"/> APPROVAL RECOMMENDED B. <input type="checkbox"/> DISAPPROVAL RECOMMENDED			
TYPED NAME AND TITLE OF REVIEWER		SIGNATURE	
		OFFICE SYMBOL	
		PHONE NO.	
		DATE SIGNED	
13. <input type="checkbox"/> ROUTED TO PCO			
		OFFICE SYMBOL	
		PHONE NO.	
14. COMMENTS AND/OR REMARKS (When commenting on items 8 thru 13, be sure to identify it with related item. Continue on reverse side if necessary)			
15. CONCLUDING DECISION OR ACTION A. <input type="checkbox"/> APPROVED B. <input type="checkbox"/> DISAPPROVED		16. MODIFICATION OF CONTRACT IS A. <input type="checkbox"/> REQUIRED (Modification Number: _____) B. <input type="checkbox"/> NOT REQUIRED	
17. TYPED NAME AND TITLE (Approving or disapproving authority)		SIGNATURE	
		DATE	
DISTRIBUTION OF COPIES: <input type="checkbox"/> CONTRACTOR <input type="checkbox"/> ACO <input type="checkbox"/> QAR <input type="checkbox"/> OTHER (Specify):			

DD FORM 1 JUL 75 1998

REPLACES DSA FORM 573 WHICH IS OBSOLETE

Figure 7-2
7-13

CHANGE PROPOSAL REVIEW

1. Ship/System/Equipment	2. Change Title
3. Review Activity/Code	4. Change Proposal Control No.
5. Comments:	
6. Recommendation:	
<input type="checkbox"/> Approve as is	
<input type="checkbox"/> Approve with the Following Changes:	
<input type="checkbox"/> Disapprove for the Following Reasons:	
Signature of Reviewer and Date _____	

Figure 7-3

ENGINEERING CHANGE PROPOSAL (ECP) EVALUATION

1. Ship/System/Equipment	2. Change Title
3. SPM/LCM ECP Control No.	4. Originator's ECP No.
5. ECP Originator Activity/Code	6. ECP Priority

NOTE: PROVIDE EXPLANATION AND SPECIFIC DETAILS UNDER REMARKS

7. A. Technical: Does the ECP affect the following?	YES	NO
1. Design	<input type="checkbox"/>	<input type="checkbox"/>
2. Performance	<input type="checkbox"/>	<input type="checkbox"/>
3. Reliability & Maintainability	<input type="checkbox"/>	<input type="checkbox"/>
4. Operational Effectiveness	<input type="checkbox"/>	<input type="checkbox"/>
5. Interoperability/Interchangeability	<input type="checkbox"/>	<input type="checkbox"/>
6. Human Engineering	<input type="checkbox"/>	<input type="checkbox"/>
7. Survivability	<input type="checkbox"/>	<input type="checkbox"/>
8. Electromagnetic Characteristics	<input type="checkbox"/>	<input type="checkbox"/>
9. Safety	<input type="checkbox"/>	<input type="checkbox"/>
10. Space	<input type="checkbox"/>	<input type="checkbox"/>
11. Weight/Moment	<input type="checkbox"/>	<input type="checkbox"/>
12. Power	<input type="checkbox"/>	<input type="checkbox"/>
13. Cooling	<input type="checkbox"/>	<input type="checkbox"/>
14. System or Equipment Interfaces	<input type="checkbox"/>	<input type="checkbox"/>
15. Testing/Proofing	<input type="checkbox"/>	<input type="checkbox"/>
16. Age Dependency	<input type="checkbox"/>	<input type="checkbox"/>
17. Other	<input type="checkbox"/>	<input type="checkbox"/>
 B. Integrated Logistic Support (ILS): Does the ECP impact the following?		
1. Logistic Support Analysis (LSA)	<input type="checkbox"/>	<input type="checkbox"/>
2. Maintenance Planning		
a. Level of Repair Analysis (LORA)	<input type="checkbox"/>	<input type="checkbox"/>
b. Maintenance Plan (MP)	<input type="checkbox"/>	<input type="checkbox"/>
c. Planned Maintenance System (PMS)	<input type="checkbox"/>	<input type="checkbox"/>
d. Other _____	<input type="checkbox"/>	<input type="checkbox"/>

Figure 7-4

B. ILS (cont'd)	IMPACT	
	YES	NO
3. Supply Support		
a. Program Support Data (PSD)	<input type="checkbox"/>	<input type="checkbox"/>
b. Provisioning Technical Documentation (PTD)	<input type="checkbox"/>	<input type="checkbox"/>
c. Coordinated Shipboard Allowance List (COSAL)	<input type="checkbox"/>	<input type="checkbox"/>
d. Coordinated Shore Based Allowance List (COSBAL)	<input type="checkbox"/>	<input type="checkbox"/>
e. Allowance Parts List (APL)	<input type="checkbox"/>	<input type="checkbox"/>
f. Allowance Equipage List (AEL)	<input type="checkbox"/>	<input type="checkbox"/>
g. Operating Space Items (OSIs)	<input type="checkbox"/>	<input type="checkbox"/>
h. Maintenance Assistance Modules (MAMs)	<input type="checkbox"/>	<input type="checkbox"/>
i. Material Support Date (MSD)	<input type="checkbox"/>	<input type="checkbox"/>
j. Installation and Checkout (I&C) Spares	<input type="checkbox"/>	<input type="checkbox"/>
k. National Stock Number (NSN)	<input type="checkbox"/>	<input type="checkbox"/>
l. Other _____	<input type="checkbox"/>	<input type="checkbox"/>
4. Support and Test Equipment		
a. General Purpose Electronic Test Equipment (GPETE) Requirements List	<input type="checkbox"/>	<input type="checkbox"/>
b. General Purpose Tools	<input type="checkbox"/>	<input type="checkbox"/>
c. General Purpose Test Equipment	<input type="checkbox"/>	<input type="checkbox"/>
d. Special Purpose Electronic Test Equipment (SPETE) Requirements List	<input type="checkbox"/>	<input type="checkbox"/>
e. Special Purpose Tools	<input type="checkbox"/>	<input type="checkbox"/>
f. Special Purpose Test Equipment	<input type="checkbox"/>	<input type="checkbox"/>
g. Calibration Standards	<input type="checkbox"/>	<input type="checkbox"/>
h. Automatic Test Equipment/Test Program Sets	<input type="checkbox"/>	<input type="checkbox"/>
i. Other _____	<input type="checkbox"/>	<input type="checkbox"/>
5. Logistic Technical Data		
a. Integrated Logistics Support Plan (ILSP)	<input type="checkbox"/>	<input type="checkbox"/>
b. Life Cycle Support Plan(s)	<input type="checkbox"/>	<input type="checkbox"/>
c. Specifications	<input type="checkbox"/>	<input type="checkbox"/>
d. Interface/Installation Design Specifications (IDS)	<input type="checkbox"/>	<input type="checkbox"/>
e. Interface Control Drawings (ICD)	<input type="checkbox"/>	<input type="checkbox"/>
f. Selected Record Drawings (SRD)	<input type="checkbox"/>	<input type="checkbox"/>

Figure 7-4

	IMPACT	
	YES	NO
B. ILS (cont'd)		
5. Logistic Technical Data (cont'd)		
g. Wiring Tables	<input type="checkbox"/>	<input type="checkbox"/>
h. Index of Technical Publications (ITP)	<input type="checkbox"/>	<input type="checkbox"/>
i. Technical Manuals	<input type="checkbox"/>	<input type="checkbox"/>
j. Test Plans	<input type="checkbox"/>	<input type="checkbox"/>
k. Test Procedures	<input type="checkbox"/>	<input type="checkbox"/>
l. Operating Procedures	<input type="checkbox"/>	<input type="checkbox"/>
m. System Level Drawings	<input type="checkbox"/>	<input type="checkbox"/>
n. Equipment Level Drawings	<input type="checkbox"/>	<input type="checkbox"/>
o. Ships Systems Manuals/Ships Information Books	<input type="checkbox"/>	<input type="checkbox"/>
p. Ships Drawing Index (SDI)	<input type="checkbox"/>	<input type="checkbox"/>
q. Training Aid Booklets (TABs)	<input type="checkbox"/>	<input type="checkbox"/>
r. Other _____	<input type="checkbox"/>	<input type="checkbox"/>
6. Computer Resources Support		
a. Computer Program Package (CPP)	<input type="checkbox"/>	<input type="checkbox"/>
b. Computer Program Operating Manual (CPOM)	<input type="checkbox"/>	<input type="checkbox"/>
c. Computer Program Design Specification (CPDS)	<input type="checkbox"/>	<input type="checkbox"/>
d. Computer Program Performance Specification (CPPS)	<input type="checkbox"/>	<input type="checkbox"/>
e. Data Base Design Document (DBDD)	<input type="checkbox"/>	<input type="checkbox"/>
f. Computer Subprogram Design Document (CSDD)	<input type="checkbox"/>	<input type="checkbox"/>
g. Users Reference Manual (URM)	<input type="checkbox"/>	<input type="checkbox"/>
h. Computer Program Design Document (CPDD)	<input type="checkbox"/>	<input type="checkbox"/>
i. Computer Program Test Plan (CPTP)	<input type="checkbox"/>	<input type="checkbox"/>
j. Computer Program Test Procedure (CPTPR)	<input type="checkbox"/>	<input type="checkbox"/>
k. Software	<input type="checkbox"/>	<input type="checkbox"/>
l. Firmware	<input type="checkbox"/>	<input type="checkbox"/>
m. Other _____	<input type="checkbox"/>	<input type="checkbox"/>
7. Training		
a. Navy Training Plan (NTP)	<input type="checkbox"/>	<input type="checkbox"/>
b. Initial Training	<input type="checkbox"/>	<input type="checkbox"/>
c. Curricula	<input type="checkbox"/>	<input type="checkbox"/>
d. Training Devices/Trainers	<input type="checkbox"/>	<input type="checkbox"/>

Figure 7-4
7-17

		IMPACT	
		YES	NO
B.	ILS (cont'd)		
7.	Training (cont'd)		
e.	Training Aids/Simulators	<input type="checkbox"/>	<input type="checkbox"/>
f.	Instructor Handbook	<input type="checkbox"/>	<input type="checkbox"/>
g.	Factory Training	<input type="checkbox"/>	<input type="checkbox"/>
h.	Training Path System (TPS)	<input type="checkbox"/>	<input type="checkbox"/>
i.	Personel Performance Profile (PPS)	<input type="checkbox"/>	<input type="checkbox"/>
j.	Technical Training Equipment	<input type="checkbox"/>	<input type="checkbox"/>
k.	Other _____	<input type="checkbox"/>	<input type="checkbox"/>
8.	Facilities		
a.	Facility Criteria Package	<input type="checkbox"/>	<input type="checkbox"/>
b.	As-built Drawings	<input type="checkbox"/>	<input type="checkbox"/>
c.	Other _____	<input type="checkbox"/>	<input type="checkbox"/>
9.	Manpower and Personnel		
a.	Ship Manning Document	<input type="checkbox"/>	<input type="checkbox"/>
b.	Shore Manpower Document	<input type="checkbox"/>	<input type="checkbox"/>
c.	Other _____	<input type="checkbox"/>	<input type="checkbox"/>
10.	Packaging, Handling, Storage and Transportation		
a.	Hazardous and Flammable Material	<input type="checkbox"/>	<input type="checkbox"/>
b.	Electrostatic Discharge (ESD) Sensitive Material	<input type="checkbox"/>	<input type="checkbox"/>
c.	Storage/Stowage	<input type="checkbox"/>	<input type="checkbox"/>
d.	Special Handling Procedures	<input type="checkbox"/>	<input type="checkbox"/>
e.	Special Packaging Procedures	<input type="checkbox"/>	<input type="checkbox"/>
f.	Other _____	<input type="checkbox"/>	<input type="checkbox"/>
C.	Configuration Item (CI) Identification	YES	NO
1.	Has (have) affected CI(s) been clearly identified?	<input type="checkbox"/>	<input type="checkbox"/>
2.	Has affected CI identification documentation been identified for update?	<input type="checkbox"/>	<input type="checkbox"/>

Figure 7-4
7-18

D. Financial	YES	NO
1. Are program funds available?	<input type="checkbox"/>	<input type="checkbox"/>
2. Will the change result in an overall program cost reduction?	<input type="checkbox"/>	<input type="checkbox"/>
3. Is life cycle cost affected?	<input type="checkbox"/>	<input type="checkbox"/>
E. Other		
1. Does the ECP affect schedule?	<input type="checkbox"/>	<input type="checkbox"/>
2. Has the impact of not approving the ECP been considered?	<input type="checkbox"/>	<input type="checkbox"/>
3. Is review by another CCB required?	<input type="checkbox"/>	<input type="checkbox"/>
4. Have related changes been considered?	<input type="checkbox"/>	<input type="checkbox"/>
5. Is this change compatible with existing systems?	<input type="checkbox"/>	<input type="checkbox"/>
6. Is GFE affected?	<input type="checkbox"/>	<input type="checkbox"/>
7. Has necessary coordination been accomplished?	<input type="checkbox"/>	<input type="checkbox"/>
8. Remarks:		
Signature of Evaluator and Date _____		

Figure 7-4
7-19

SECTION 8
Configuration Control Board (CCB)
Charter Promulgation Letter

(EXAMPLE)

From: Commander, Naval Sea Systems Command

Subj: ESTABLISHMENT OF PROGRAM NAME & COMMAND CODE CONFIGURATION CONTROL BOARD (CCB)

Ref: (a) SECNAVINST 4130.2, Subj: Department of the Navy Configuration Management Policy
(b) NAVSEAINST 4130.12A, Subj: Configuration Management (CM) Policy and Guidance

Encl: (1) Program Name & Command Code Configuration Control Board Charter

1. The purpose of this letter is to establish the Program Name & Command Code Configuration Control Board (CCB). Reference (a) prescribes uniform policies and guidance for implementation of configuration management within the Department of the Navy.
2. Establishment of Program Name & Command Code CCB is effective this date. It will function in accordance with references (a) and (b) and the Charter is hereby established as enclosure (1). Enclosure (1) specifies CCB membership by Code and functional responsibilities.
3. The point of contact for additional information concerning the CCB Charter is Configuration Manager's Name, Code, and Telephone Number.

Distribution:
CEL-PA
etc.

**Program Name and NAVSEA Code
Configuration Control Board Charter**

(Enclosure 1 to Promulgation Letter)

1. Purpose
2. Applicability
3. Composition of CCB and Functional Responsibilities
4.
 - a. Chairperson (Alternate Chairperson)
 - b. Secretary
 - c. Technical Manager
 - d. ILS Manager
 - e. Other Members, as appropriate:
 - (1) Configuration Manager
 - (2) Safety Manager
 - (3) Reliability and Maintainability Manager
 - (4) Business and Financial Manager
 - (5) Test and Evaluation Manager
 - (6) Weight Control Engineer
 - (7) Interfacing Manager(s)
 - (8) Other Technical Advisors
(Government Activities and Contractors as required by the
CCB Chairperson)

SECTION 9
Configuration Management (CM) Contract Requirements

(EXAMPLES)

The following are examples of typical CM contract requirements. Specific CM contract requirements should be tailored to the product being procured and to the applicable program life cycle phase.

1. **Configuration Management Planning.** A contractor's CM Plan shall be developed in accordance with MIL-STD-1456 and DID# DI-CMAN-80405.

2. **Configuration Identification**

a. A ship work breakdown structure shall be developed and maintained in accordance with MIL-STD-881A and DID# UDI-F-23863B.

b. Request for assignment of Joint Electronics Type Designation System (JETDS) "AN/" nomenclature shall be in accordance with MIL-STD-196D and DID# DI-E-7194.

c. Requests for assignment of MARK and MOD nomenclature shall be in accordance with MIL-STD-1661 and DID# DI-E-2000A.

d. Level 3 drawings shall be developed in accordance with DOD-STD-100C and DID# DI-E-7031.

3. **Configuration Control**

a. Engineering Change Proposal (ECPs) shall be prepared in accordance with MIL-STD-480B and DID# DI-CMAN-80639.

b. Engineering Change Proposals (ECPs) (Short Form) shall be prepared in accordance with MIL-STD-481B and DID# DI-CMAN-80644.

c. Request for Deviations shall be prepared in accordance with MIL-STD-480B or MIL-STD-481B and DID# DI-CMAN-80640.

d. Request for Waivers shall be prepared in accordance with MIL-STD-480B or MIL-STD-481B and DID# DI-CMAN-80641.

e. Notices of Revision (NORs) shall be prepared in accordance with MIL-STD-480B and DID# DI-CMAN-80642.

f. Specification Change Notices (SCNs) shall be prepared in accordance with MIL-STD-480B and DID# DI-CMAN-80643.

g. Field Change Bulletins or Engineering Change Orders shall be in accordance with MIL-F-17655C and DID# UDI-M-23998.

h. ORDALT's shall be prepared in accordance with MIL-STD-1662B and DID# DI-CMAN-80225.

i. MACHALTs shall be prepared in accordance with DOD-STD-2140 and DID# DI-E-2188.

j. Proofing or testing the retrofit kit shall be in accordance with MIL-F-17655C and DID# UDI-E-26089 or UDI-E-26052.

4. **Configuration Status Accounting**

a. A Configuration Identification Manual (CIM) shall be developed in accordance with MIL-STD-482A and DID# UDI-E-23846B.

b. Configuration Status Accounting (CSA) Reports shall be prepared in accordance with MIL-STD-482A and DID# DI-E-2039.

5. **Configuration Audits.** Configuration Audit Agenda and/or Reports shall be prepared in accordance with MIL-STD-1521B and DID# UDI-E-26064.

6. **Technical Reviews.** Technical or Design Review Reports shall be prepared in accordance with MIL-STD-1521B and DID# UDI-H-20002A.