



DEPARTMENT OF THE NAVY

NAVAL SEA SYSTEMS COMMAND
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IN REPLY TO

NAVSEAINST 5400.95C
Ser 05BX/004
3 FEB 2003

NAVSEA INSTRUCTION 5400.95C

From: Commander, Naval Sea Systems Command

Subj: WATERFRONT ENGINEERING AND TECHNICAL AUTHORITY POLICY

Ref: (a) NAVSEAINST 5400.97A, Engineering and Technical Authority Policy, of 3 Feb 2003
(b) NAVSEAINST 5400.57D, Engineering Agent Selection, Assignment, Responsibility, Tasking and Appraisal, of 3 Feb 2003
(c) NAVSEAINST 5450.119, NAVSEA Shipyard Representative's Offices, Operation of, of 19 Jun 2002
(d) NAVSEAINST 4700.17, Preparation and Review of Trouble Reports, of 11 Mar 2002
(e) CINCLANTFLT/CINCPACFLTINST 4790.3, Joint Fleet Maintenance Manual

Encl: (1) Regional Responsibilities of CHENGs
(2) Policy for Engineering Changes and Non-conformances

1. Purpose

a. To establish engineering and technical authority policy for Naval Shipyards, Supervisors of Shipbuilding (SUPSHIPS) and the Fleet that fulfills the responsibilities of reference (a) and supports programmatic authorities in providing best value engineering and technical products to the Fleet.

b. To define the responsibility, accountability and authority of Naval Shipyard, SUPSHIP and Fleet Technical Support Center (FTSC) Chief Engineers (CHENGs) for engineering and technical decisions within the scope of this instruction, and the exercise of that authority throughout their assigned regions.

c. To establish detailed policy for the selection and assignment of engineering agents at Naval Shipyards and SUPSHIPS consistent with reference (b), for disposition of engineering changes and non-conformances, and for Fleet technical support.

d. To provide general requirements for technical interactions of CHENGs with NAVSEA headquarters, Warfare Centers, Naval Shipyards, SUPSHIPS, and other field activities.

e. This instruction is a major revision and should be read in its entirety.

2. Cancellation. NAVSEAINST 5400.95B of 1 May 2002.

3. Fleet Concurrence. This instruction applies to all Fleet activities doing technical work within the scope of this instruction. COMLANTFLT and COMPACFLT have concurred.

4. Scope and Applicability. This instruction applies to engineering, technical work and technical authority performed by Naval Shipyards, SUPSHIPS and the Fleet within the scope and applicability of reference (a).

5. Policy

a. CHENG Technical Authority and Accountability. Technical authority is delegated to Naval Shipyard, SUPSHIP and FTSC CHENGs as detailed in reference (a), this instruction and other NAVSEA documents, based on technical competency, capability and expertise. Consistent with reference (a), CHENGs shall be accountable to the Deputy Commander for Ship Design, Integration and Engineering (SEA 05), on an additional duty (ADDU) basis, for all engineering and technical authority within their assigned regions, which are defined in enclosure (1). The technical authority warrants issued to the FTSC CHENGs define the limits of technical authority delegated to each FTSC CHENG to include only those technical areas where that FTSC has engineering competence. No other activity may delegate NAVSEA technical authority to FTSCs. CHENGs have available for their support the full resources and expertise of NAVSEA to resolve issues beyond their capability.

b. Responsibilities of CHENGs. CHENGs are responsible and accountable for all engineering and technical decision making accomplished throughout their assigned region and any assigned engineering agents. In addition to the reference (a) Technical Warrant Holder responsibilities, CHENGs shall:

(1) Lead the waterfront technical efforts of NAVSEA for construction, modernization, maintenance and repair, including implementation of configuration requirements. For example, Shipyard and SUPSHIP CHENGs are accountable for the detailed work procedures, detailed construction drawings, internal shipyard and contractor process requirements, testing, and shipyard and contractor responsible technical manuals and purchase technical documents used to ensure configuration requirements are met.

(2) Manage and provide leadership for engineering and for technical authority, integrity and discipline throughout their assigned regions. Engineering responsibilities shall be delegated based on integrity and expertise. Therefore, CHENGs shall develop and issue Memorandums of Agreement (MOAs) with other activities in their assigned region to document engineering responsibilities and interfaces and present those MOAs to SEA 05 for concurrence.

(3) Provide technical insight and ensure compliance with technical requirements, standards, processes and policies. Be the focal point for all technical issues associated with their assigned region, ensuring issues are properly staffed, and other engineering managers within the Navy technical community are engaged as needed.

(4) Advise and make recommendations to their Chain of Command, SEA 05 and NAVSEA Headquarters concerning significant technical issues and issues impacting performance of assigned duties; these include engineering capability (core equities, technical stewardship, and interoperability), personnel, safety and staffing.

(5) Exercise the technical authority described in enclosure (2), which provides NAVSEA policy for engineering changes and non-conformances. In addition, CHENGs have authority to: represent NAVSEA in interpreting and ensuring compliance with technical requirements, standards and policies; determine conformance and non-conformance to specifications; determine the significance of non-conformances and disposition them; make decisions where it is clear that no NAVSEA technical guidance or requirement is necessary; and, except for FTSC CHENGs, develop specifications using technical requirements, standards and policy. Where appropriate, technical decisions shall be coordinated with other engineering managers within the Navy technical community.

(6) Provide engineering support to project teams while maintaining a matrixed core engineering staff. To ensure technical competency and encourage engineers to develop broad-based knowledge, engineers should normally rotate between project team assignments and other engineering assignments.

(7) Be the department head, deputy, or equivalent for all engineering and the technical aspects of planning at their activity.

c. Engineering Agent Functions. Naval Shipyard and SUPSHIP CHENGs are responsible for the Planning Yard, Design Yard and other engineering agent functions performed within their assigned regions. In addition, SUPSHIP CHENGs are responsible for contract administration and oversight of contractor engineering agents. Policy for engineering agents includes:

(1) Engineering agents shall have sufficient engineering responsibilities delegated to perform assigned duties. Policy for the selection, assignment, responsibilities, tasking and appraisal of engineering agents is contained in reference (b).

(2) Where an engineering agent function is assigned to a contractor in the CHENG's region, a single contractor engineering manager shall be identified as accountable to that CHENG.

(3) Planning Yards manage and update the engineering technical data that defines a Class of in-service ships, and act

as the total ship systems engineering agent for that Class, providing assistance to the Program Manager (PM) and Ship Design Manager (SDM).

d. Fleet Technical Support. As depicted in enclosure (1), CHENGs are responsible for all aspects of resolving Fleet technical issues within their regions. This lead CHENG role includes: coordinating programmatic authority issues with the Fleet or PM; engaging other parts of the Navy technical community as needed for technical expertise or authority; and ensuring configuration control is properly coordinated.

e. Selection and Evaluation of CHENGs. SEA 05 concurrence shall be obtained prior to CHENG selection, and SEA 05 input for yearly performance appraisal shall be requested prior to closeout. Formal assessments will be conducted as needed to verify the CHENG's ability to properly exercise technical authority, to ensure compliance with technical requirements, standards, processes and policy, and to identify opportunities for improvement. As needed, CHENGs shall establish ADDU relationships and perform formal assessments in a similar manner within their assigned regions.

f. Engineering Field Representatives. Engineering Field Representatives (EFRs) shall be assigned full-time to provide independent oversight of those field activities and associated CHENGs engaged in engineering and the exercise of technical authority which are listed in enclosure (1). EFRs shall be SEA 05 employees, except for NAVSEA Shipyard Representatives (see reference (c)), who shall perform this oversight function at Naval Shipyards. Responsibilities include:

(1) Provide independent oversight of the exercise of technical authority.

(2) Evaluate and assess implementation and compliance with NAVSEA technical requirements, standards, processes, procedures and policy.

(3) Facilitate technical communications among activities in the Navy technical community.

(4) Advise NAVSEA technical leadership and engineering management on significant technical issues and technical core equities.

(5) Provide on-site assistance to SDMs and other Technical Warrant Holders in independent oversight of construction, modernization, maintenance and repair on the waterfront.

(6) Review and process field activity trouble reports in accordance with reference (d).

6. Action

a. All documents delegating technical authority to Naval Shipyards, SUPSHIPS or the Fleet shall be reviewed for consistency with this instruction by the organizations or individuals delegating that technical authority.

b. CHENGs shall review charters and organizational manuals to ensure the responsibility, accountability and authority of CHENGs is consistent with this instruction.

c. CHENGs shall write or update internal implementing instructions and external MOAs with other activities within their assigned regions. These external MOAs shall be submitted to SEA 05 for review and concurrence within 3 months of the date of this instruction. Changes to these documents shall be presented to SEA 05 for concurrence.

d. COMLANTFLT and COMPACFLT will ensure reference (e) is consistent with this instruction.



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REGIONAL RESPONSIBILITIES OF CHENG'S

CHENG (Notes 1 and 2)	OTHER ACTIVITIES IN THE CHENG'S REGION (Note 3)
NORFOLK NAVAL SHIPYARD (Note 4)	SIMA NORFOLK USS EMORY S LAND (AS-39) LAMADDELENA FTSCLANT (Note 5)
PEARL HARBOR NAVAL SHIPYARD AND IMF (Note 4)	SRF YOKOSUKA USS FRANK CABLE (AS40) GUAM
PORTSMOUTH NAVAL SHIPYARD (Note 4)	
PUGET SOUND NAVAL SHIPYARD (Note 4)	SUPSHIP JACKSONVILLE DET INGLESIDE IMF PACNORWEST (Note 6) TRF KINGS BAY SIMA NRF INGLESIDE FTSCPAC (Note 5) SIMA San Diego (submarines only)
FTSCLANT (Note 5)	
FTSCPAC (Note 5)	
SUPSHIP BATH	
SUPSHIP GROTON (Note 4)	NSSF NEW LONDON
SUPSHIP JACKSONVILLE	SIMA MAYPORT SIMA PASCAGOULA
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SUPSHIP PUGET SOUND (Note 6)	
SUPSHIP SAN DIEGO	SUPSHIP SAN DIEGO DET PEARL SIMA SAN DIEGO (except submarines) ASSAULT CRAFT UNIT FIVE (LCAC MAINT) ASSAULT CRAFT UNIT ONE (LCU and LCM 8 MAINT) FTSCPAC (Note 5)

Notes:

1. CHENG'S have full responsibility and accountability for all technical work in their regions. If a CHENG'S activity is performing work in conjunction with an activity in the region of a different CHENG, then the two CHENG'S shall formally agree on how engineering and technical authority policy will be applied for that work.

2. The lead CHENG is responsible for Fleet technical support in accordance with this instruction and as depicted by figure (1). This includes integration of work performed by Alteration Installation Teams (AITs). Where appropriate, the regional CHENG and the organization associated with tasking the AIT shall formally agree on engineering and technical authority policy, and technical support.

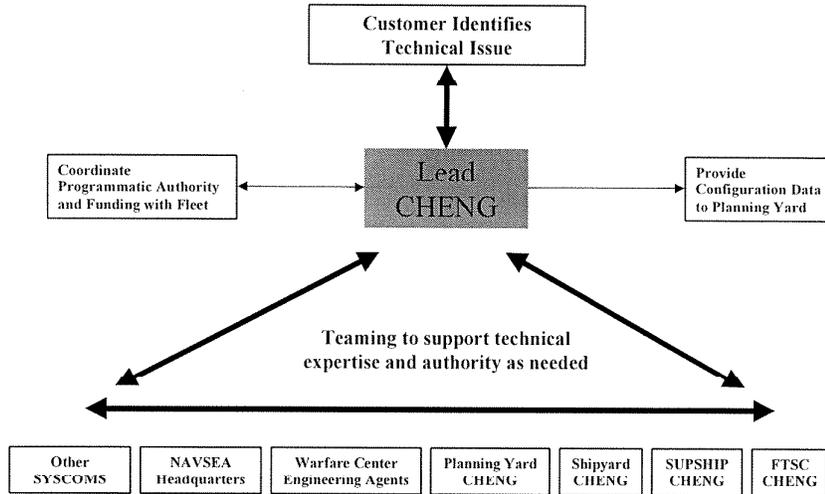
3. The definition of a CHENG's region includes associated contractors in accordance with any governing contracts.

4. These CHENGs exercise technical authority for SUBSAFE and Naval Nuclear Propulsion Plant work. The combined regions of these CHENGs shall encompass all such work at repair activities and contractors. MOAs shall be prepared as needed to clarify these regional assignments.

5. FTSC Technical Directors are designated as FTSC CHENGs. For technical areas outside FTSC engineering competencies: FTSCCLANT is part of the Norfolk Naval Shipyard CHENG's region for work in submarines and in CVN propulsion plants; FTSCCLANT is part of the SUPSHIP Portsmouth CHENG's region for other work; FTSCPAC is part of the Puget Sound Naval Shipyard CHENG's region for work in submarines and in CVN propulsion plants; and FTSCPAC is part of the SUPSHIP San Diego CHENG's region for other work.

6. In the Pacific Northwest, the SUPSHIP Puget Sound CHENG is responsible for ship work accomplished by private contractors when Puget Sound Naval Shipyard is not the Naval Supervising Activity.

Figure 1, Fleet Technical Support Model



The lead CHENG is the regional CHENG for the activity that is first contacted by the Fleet; for example:

- a. For technical issues during or related to a CNO or non-CNO availability, the CHENG with the naval supervising activity (NSA) in his region is normally the lead CHENG. If the NSA is not the CHENG's activity, but is within the CHENG's region, this function may be delegated to an individual at the NSA who has an adequate understanding of the Navy technical community.
- b. For functions like phased maintenance, where a contractor is contracted by SUPSHIP to perform work outside availabilities, the SUPSHIP CHENG is the lead CHENG.
- c. For emergent technical issues not associated with the above, the FTSC CHENG is typically the lead CHENG, since the FTSC's mission is to be the first point of contact for Fleet technical issues.
- d. If the issue exceeds FTSC's capabilities (e.g., submarine HM&E work), NAVSEA Headquarters or a Shipyards or SUPSHIP CHENG performs the lead CHENG function.
- e. Once assumed, lead CHENG responsibilities should only be transferred to another CHENG if the situation warrants. For example, when a routine FTSC visit evolves into a major repair that will be performed by a Naval Shipyards or SUPSHIP.

POLICY FOR ENGINEERING CHANGES AND NON-CONFORMANCESReferences:

- (a) NAVSEAINST 5400.97A, Engineering and Technical Authority Policy, of 3 Feb 2003
- (b) NAVSEAINST C9210.4A, Changes, Repair and Maintenance to Nuclear Powered Ships (U), of 24 Sep 90
- (c) CINCLANTFLT/CINCPACFLTINST 4790.3, Joint Fleet Maintenance Manual, Volume 5
- (d) NAVSEAINST 4730.1, Nuclear Powered Submarines; Shipyard Inspection and Required Conditions of Propulsion Plant Systems (Non-Nuclear)
- (e) NAVSEAINST 4730.2, Nuclear Powered Surface Ships; Shipyard Inspection and Required Conditions of Propulsion Plant Systems (Non-Nuclear)
- (f) NAVSEAINST 5400.57D, Engineering Agent Selection, Assignment, Responsibility, Tasking and Appraisal, of 3 Feb 2003
- (g) NAVSEA 0902-018-2010, General Overhaul Specifications for Deep Diving SSBN/SSN Submarines

1. Scope. This enclosure applies to engineering changes and non-conformances within the scope and applicability of reference (a). This enclosure does not apply to naval nuclear propulsion plant systems and equipment under the cognizance of SEA 08. This enclosure does apply to non-reactor plant systems and equipment defined in reference (b). For the non-reactor plant systems and equipment defined therein, a formal agreement shall be established between the CHENGs and their activity's nuclear engineering counterparts. The purpose of this agreement is to ensure that engineering changes and non-conformances in those applications are dispositioned properly, and that nuclear engineering concurrence with local approval actions is obtained where appropriate.

2. Definitions

a. Engineering Change. A permanent change in the design of the ship, system or component (e.g., a technical ECP). Engineering Changes are divided into four levels, which are defined in appropriate contracts and specifications: Level 1 (CNO approval), Level 2 (COMNAVSEA approval), Level 3 (Program Manager approval), and Level 4 (contracting activity, e.g., SUPSHIP, approval).

b. Non-conformance. The failure of a system or component to conform to specified requirements. A non-conformance differs from an engineering change in that it does not involve a change

in design, just a change in configuration for the specific ship. There are two kinds of non-conformances, deviations and waivers. In reference (c), the Fleet refers to non-conformances using the term "Departure from Specification (DFS)".

c. Deviation. A written authorization, that is granted prior to conducting work that will result in a non-conformance, to depart from a specific requirement of an item's current approved configuration documentation.

d. Waiver. A written authorization to accept a condition that has been discovered to be a non-conformance, but is determined to be acceptable.

e. Departure from Specification (DFS). The Joint Fleet Maintenance Manual, reference (c), provides a form (QA Form 12) for documenting non-conformances and for approving the associated deviations and waivers. Reference (c) provides requirements for Fleet activities dispositioning DFSs. Reference (c) recognizes both permanent DFSs and temporary DFSs. Temporary DFSs allow for continued operation of the ship with known non-conformances when the risks associated with those non-conformances do not out-weigh the operational commitments.

f. Major Non-conformance. Major non-conformances are those that have a significant adverse effect on at least one of the following:

- (1) Performance
- (2) Survivability or Force Protection
- (3) Durability
- (4) Reliability
- (5) Maintainability
- (6) Interchangeability
- (7) Effective use or operation
- (8) Weight, stability or structural integrity
- (9) Health or safety
- (10) System design parameters such as schematics, flows, pressures, temperatures, electric loads
- (11) Reactor or reactor plant safety
- (12) Compartment arrangements or assigned function
- (13) URO/MRC requirement
- (14) Manning or training
- (15) Logistics

g. Examples. Examples of significant adverse effects are non-conformances that:

- (1) Create a hazardous or unsafe condition for personnel or equipment.

- (2) Make the item unusable or unable to perform its intended function.
- (3) Make the equipment unable to interface with or be integrated into required systems without adversely impacting the performance or installation of the equipment or interfacing systems.
- (4) Significantly affect lifecycle cost or logistic support of the equipment or interfacing systems.
- (5) Result in operational restrictions.

h. Minor Non-conformance. Minor non-conformances are non-conformances that do not meet the definition for major non-conformances.

3. Approval of Engineering Changes. The approval authority for engineering changes is identified in the definition above. The corresponding NAVSEA technical authority for engineering changes is shown below. Disagreements shall be adjudicated in accordance with reference (a).

Level	Approval Authority	NAVSEA Technical Authority
1	CNO	Cognizant Deputy Commander
2	COMNAVSEA	Cognizant Deputy Commander
3	PM	SDM
4	Contracting Activity	Contracting Activity CHENG

The NAVSEA Technical Authority shall coordinate with other Deputy Commanders or Technical Warrant Holders to ensure appropriate parts of the engineering community agree with the changes.

4. Dispositioning Non-conformances. Non-conformances shall be addressed by correcting the condition that is keeping the unit or product from conforming to specified requirements, or by obtaining documented approval in accordance with this instruction. Figure (1) is a flow chart describing the process by which non-conformances are normally dispositioned.

a. Identification. Non-conforming conditions will be identified under many different conditions and by different personnel. In all cases, identified non-conformances that are not corrected shall be reported and adjudicated according to the requirements of this instruction, whether an "as-arrived" or "existing" condition, or one directly related to a current work item. Note that many "newly identified" non-conformances may have previously been approved and these are not required to be re-evaluated, provided the condition has not deteriorated or been altered from the previously approved configuration. This configuration control policy does not change the requirements of

references (d) and (e), which require certain inspections and certifications of nuclear propulsion plant systems.

b. Evaluation. In accordance with the Fleet Technical Support requirements of this instruction, the non-conformance shall be reported to the responsible CHENG. The CHENG is responsible for evaluation of the condition, and if it is not to be corrected prior to the operation of the component/system, for dispositioning the non-conformance in accordance with this instruction prior to operation. The CHENG is responsible for determining the correct designation (major or minor) of the non-conformance in accordance with this enclosure. CHENGs may delegate portions of this responsibility to performing activities in accordance with the requirements of this instruction.

c. Minor Non-conformances. CHENGs are authorized to approve minor non-conformances throughout their assigned regions.

d. Major Non-conformances. CHENGs are authorized to approve major non-conformances when the non-conformance can be proven acceptable in accordance with NAVSEA approved technical requirements or standards. When higher technical authority correspondence is used, it must be for the specific non-conformances and approvals addressed by that correspondence, and not used to establish precedent that modifies technical requirements beyond what is specifically approved. Otherwise, the major non-conformance shall either be corrected or be addressed using the Fleet Technical Support requirements of this instruction, as amplified by Figure (1). This will normally involve forwarding the non-conformance, for approval, to one of the following:

(1) The PM in accordance with the point of entry requirements of reference (a).

(2) The cognizant Technical Warrant Holder in accordance with reference (a).

(3) A Warfare Center, Naval Shipyard, SUPSHIP or other field activity engineering agent (see reference (f)) with the expertise to be able to classify the non-conformance as minor, or the authority to approve such non-conformances.

e. Temporary Non-conformances. In cases where the CHENG cannot classify the non-conformance as minor, but can classify the non-conformance as minor for a limited period of time, the CHENG may approve a temporary non-conformance for that period of time.

f. Submarine Planning Yard Concurrence. For submarine work, reference (g), paragraph 9020-1-q requires that:

"Planning Yard technical concurrence should be obtained for non-conformances involving the following: configuration control of systems and equipment shown on ND piping, changes to logistics (ILS), changes/problems with Shipalt drawings, and modifications involving SUBSAFE Design Review flexibility analysis (SSDR piping and hanger changes)."

g. Programmatic Authority. Typically, the programmatic authority that CHENGs have to approve non-conformances is equivalent to their delegated technical authority. In other words, where the CHENG has technical authority to approve a non-conformance, he may also approve the technical decision to do so. Where this is not the case, appropriate written agreements shall be made with the programmatic authority. For example, TYCOM notification and/or concurrence is required for all temporary non-conformance approvals, and PM approval is required for all Deep Submergence - Scope of Certification non-conformances.

5. Documentation

a. All engineering change and non-conformance approvals shall be documented in an auditable manner with supporting justification, technical documentation, calculations, rationale and related correspondence. For submarines, this shall include identification of whether the engineering change or non-conformance is within the SUBSAFE boundary. For all nuclear powered ships, this shall include identification of whether the engineering change or non-conformance could be applicable to a naval nuclear propulsion plant system per reference (b).

b. The reference (c) Joint Fleet Maintenance Manual QA Form 12 DFS form and the Electronic DFS (EDFS) form and centralized database are acceptable forms for all activities documenting and approving non-conformances in accordance with this instruction.

c. The approving activity is responsible for providing any configuration change information to the Planning Yard, and the Planning Yard is responsible for updating the configuration control records in accordance with PM policies.

d. The responsible CHENG shall make distribution of approved engineering changes and non-conformances (within appropriate security guidelines) as follows. For delivered ships (i.e. after construction and PSA), Ship's Force and the Type Commander shall be provided copies, typically within one week of approval. The cognizant Planning Yard shall be provided copies

of all approvals that affect configuration in accordance with paragraph 5.c above, typically at the end of the availability. The cognizant Technical Warrant Holders and the appropriate PEO or PM shall be provided copies of all engineering change and major non-conformance approvals in a timely manner. SEA 08 shall be provided copies of all engineering change and major non-conformance approvals for non-reactor plant systems and equipment in naval nuclear propulsion plants.

Figure 1, Flow Chart for Typical Non-conformances

